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THE ULTIMATE GUIDE TO  
**CHESS KING**

Using Chess Software to Achieve  
Chess Greatness the FUN Way!

History of Computer Chess  
up to the 21st century  
&  
Chess King Software Manual

by Steve Lopez

**Steve LOPEZ**

**THE ULTIMATE GUIDE TO**

# **CHESS KING**

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Chess Greatness the FUN Way!**

**CHESS  KING**

# FOREWORD

## Dear Reader,

Thank you for reading this book. It is not only an exhaustive user manual for Chess King, but also an entertaining account about computer chess from its birth to the current state of affairs in the 21st century. We hope you will like it and that it will inspire you to play more chess and use our modern tools to become a better chess player.

We are grateful to Steve Lopez for his expertise in writing this book for us all. Grandmaster Alexandra Kosteniuk, the 12th women's world chess champion, recommends using Chess King to improve at chess. Feel free to contact us at [support@chessking.com](mailto:support@chessking.com) for any questions not covered in this book, feedback, upgrade options, or suggestions for improvement.

Diego Garcés, Chess King CEO

## About the Author

Steve Lopez is a human Swiss Army knife. He's been a professional voice actor/radio/announcer/narrator, standup comedian, singer/musician, writer/editor, and Civil War historian. Among his many current hats are writer/video producer/narrator and software "support guru" for Chess King software, and a writer/designer for Great Scott Games. He's written, produced, and narrated several video documentaries for the Maryland Department of Natural Resources, as well as researched and written guides to Maryland's Civil War battlefields. Steve is one of the most prolific chess writers in history; his credits include over a thousand articles on chess software, chess history/personalities, and game analysis, plus several chess books in electronic format (including the best-selling CD Guide to Computer Chess). In recent years Steve has branched out into video production, with more than four hundred Internet videos on chess software and chess game replays/analysis already to his credit, as well as numerous commercial chess DVD products for Chess King (and more are in the works). Occasionally, Steve even finds time to sleep.

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# PART 1

## **CHESS KING**

History of Computer Chess  
up to the 21st century



# CHAPTER 1

## Introduction

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Some thoughts on Kasparov vs. Deep blue
- The aftermath
- The twenty-first century

# INTRODUCTION

There's never been a better time to be a chess player.

When I was a teenager, struggling to improve my chess play, my options for play and practice were extremely limited. Personal computers were years in the future, and while there were a few dedicated tabletop chess computers available on the market, they were terrifically expensive – far out of the reach of a young teenager. I could try to content myself with reading my small collection of chess books, but the opportunities to practice what I thought I'd learned were sparse: a weekly downtown chess club meeting or the occasional “pickup” game against one of my friends, none of whom were as interested in chess as I was.

Compare those times to today's chess environment. A chess player can easily find a challenging game any time of the day or night on a wide array of Internet chess servers. Chess information and instruction is easily available online from a variety of web sites. Players can freely download and read classic chess books first published a century ago, books which are now in the public domain. And chess playing computer programs allow a chess student to practice and hone his skills virtually anywhere, anytime.

If I'd had these tools and opportunities when I was a teenager, I'd be a much stronger player today.

In fact, many people are of the opinion that chess computer software availability and Internet access are precisely why so many young people are becoming chess masters and grandmasters at earlier ages. I remember a time not very long ago when a seventeen year old grandmaster was considered a “prodigy”. These days it's more like, “What took you so long?”

It's an exciting time to be a chess player, regardless of your age. Chess isn't just the province of the young; in fact, playing chess is a great hobby for people of any age. Studies have shown that playing chess helps stave off the effects of aging on the human brain, including delaying the onset of Alzheimer's disease, dementia, and other ailments which can afflict older people. It's never too late to learn chess, and a great aspect of the game is that you never stop learning – there's always a new skill, idea, opening, or technique for you to master and add to your personal chess arsenal.

When it comes to chess you never stop learning, but many new players have the opposite problem: they don't know how to get started. There exists a bewildering array of chess software choices, all promising to aid the new player (while many of these programs aren't at all suitable for a

new player) or help an intermediate player improve. Even when a player makes a good software choice, oftentimes they have no idea how to actually use these digital tools to help them improve.

That's why I decided to write this book.

I've been supporting and writing about chess software for many years (more than I care to count!) and, in my opinion, Chess King is the ideal training software for the beginning and intermediate chess player, while at the same time offering useful tools for advanced players as well. In short, Chess King is the closest thing you'll find to a "universal" chess software program.

In Chess King's Training mode, you'll find chess puzzles to solve and chess "quests" to undertake, all of which will sharpen your chess skills. You can use Chess King as your sparring partner, and you'll be able to adjust how difficult your digital opponent will be.

Chess King offers a variety of analysis tools as well: you'll be able to add variations and notes (both verbal and visual) to games, plus have the Houdini chess engine analyze games for you, showing not just mistakes which were made but offering suggestions on how the play could have been improved. There are even tools included which make publishing games easy – you can add replayable games to your blog, for instance, or offer games as separate downloadable files.

Chess King also comes with a massive database of games from throughout chess history, as well as the tools you'll need to search that database and use the information it contains. You can replay games right on your computer screen (no setting up anew after each game!); you can even merge a particular player's games into a "chess tree" which contains a statistical analysis of each position, showing you at a glance which moves worked and which did poorly.

This book is divided into two parts. Part One presents a general history of computer chess, explains how a chess computer "thinks", and offers some general guidelines on how you can use chess computer software to improve your own chess play. In Part Two we'll look at some specifics: how the remarkable Chess King program can be your teacher, friend, and guide to chess success!

*Steve Lopez  
In the Skull Cave*

# FROM ANTIKYTHERA TO ZARKOV: A TOUR OF HOW WE CAME TO BE HERE

**The world of computers – we live in a world in which we use computers every day; many of us even carry powerful computers around in our pockets everywhere we go. But how did we come to be here, in this world of electronic brains?**

## WHEN'S THE NEXT ECLIPSE, SOCRATES?

It all started in ancient Greece...

Every school kid knows that the ancient Greeks were star-crazy. The nighttime sky is filled with people and creatures from Greek myth: the constellations and the brightest stars were all named by the Greeks, named which we still use today. But what most people don't know is that the ancient Greeks could calculate the positions of the stars and planets by using the world's first computer.

It's true. The Antikythera mechanism was found in the remains of an ancient shipwreck at the start of the twentieth century. Constructed of metal in the first century B.C., the device has thirty gears and some cryptic instructions written in Koine Greek. A mystery for over a century, the device's astronomical purpose (which included calculating the dates of solar eclipses) wasn't determined until the early twenty-first century. Today the mechanism is often referred to as the first analog (non-digital) computer.

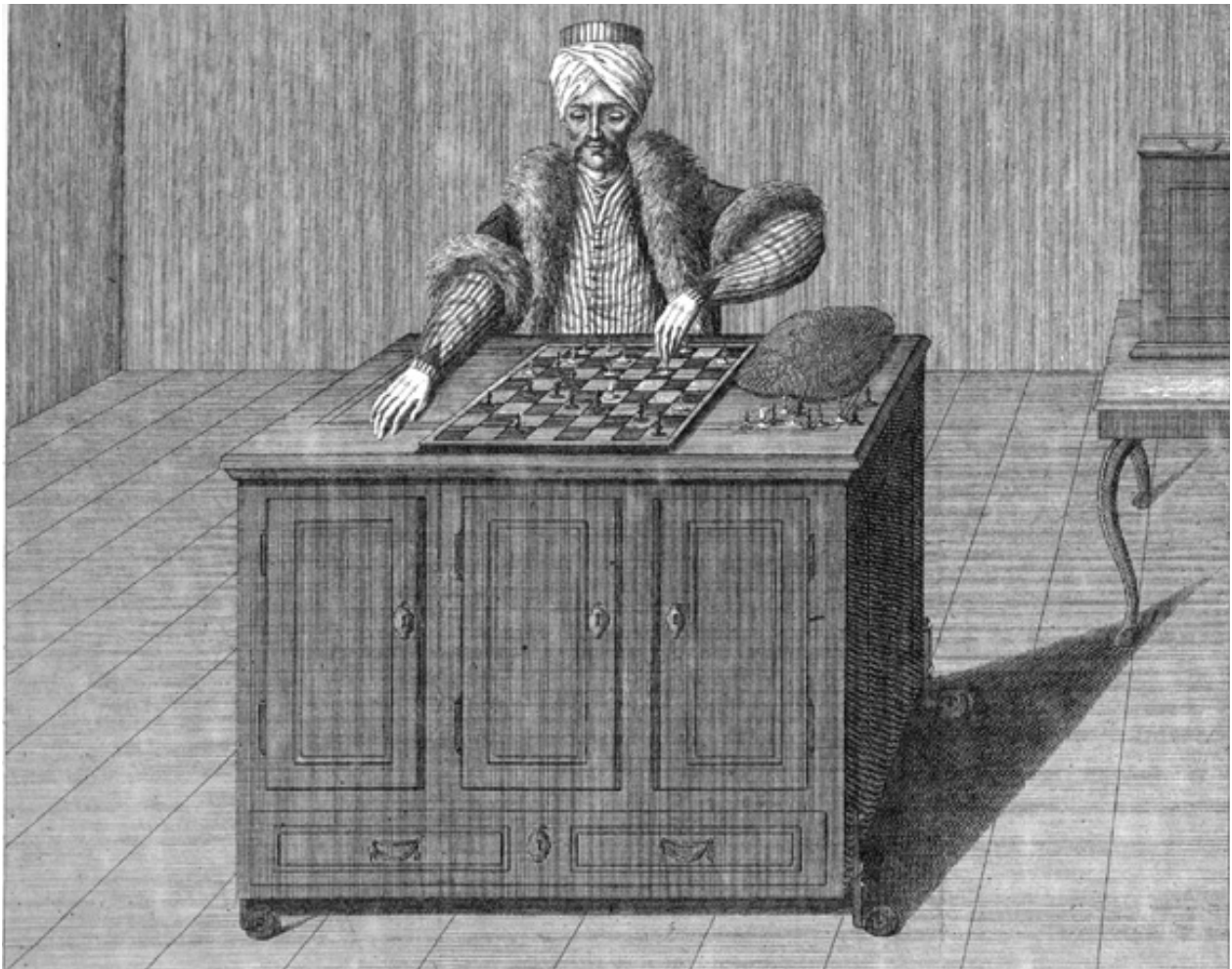
## CHARLES BABBAGE AND LADY ADA

If the Antikythera mechanism was, indeed, a computer, it took nineteen hundred years for someone to try constructing another one. In the mid-1800's, England's Charles Babbage went the ancient Greeks one better when he designed the first programmable computer. His first design was called a "difference engine" and (had it been completed) would have been able to perform simple mathematical calculations. His second, more complex (and also unfinished), design was called an "analytical engine" and would have been the world's first fully programmable computer; in fact, the accomplished mathematician Lady Ada Lovelace (daughter of famed poet Lord Byron) wrote an actual working program for use by the analytical engine. Babbage and Lady Ada even corresponded on the feasibility of programming the analytical engine to play chess. In recent years both of Babbage's engines have been successfully constructed and operated according to his original plans. Today Charles Babbage is known as the "father" of the computer, while Lady Ada is often hailed as the first computer programmer.

Both of Babbage's designs, as well as the Antikythera device, were analog (non-digital) computers, specifically ones which were mechanical in design. There were no electronics involved. Modern computers (as we think of them) would require another hundred years and a few more inventions (such as the vacuum tube) to become a reality.

## THE MAN IN THE BOX

Before we get to modern computers, though, we need to make a couple of quick stops. You've probably heard about the various mechanical chess marvels of the late 1700's and early 1800's, miraculous "robots" which could play a game of chess. Quite a few of these made the rounds over the years, bearing exotic names like "Mephisto" and "The Turk". Theories abound as to how these robot chess players actually worked, but one thing is for sure: they were not computers.



Here's a period engraving showing the famous Turk in action

The Turk was accompanied by a “master of ceremonies” presenter who would interact with the audience when the Turk was exhibited. An operator sat inside the cabinet (not inside the dummy, as some have speculated) and would make the moves; a complex series of rods and gears would transmit the move to the Turk's arm. The Turk would pick up a piece and move it to the desired square.

Although the “automaton” (today we'd say “robot”) or “mechanical mind” aspect of the Turk (and his contemporaries) was a complete hoax, the unit really was a remarkable feat of mechanical engineering, quite advanced for the time.

# THE FIRST CHESS MACHINE

A true (albeit limited) chess machine finally made an appearance just before World War I. A brilliant inventor named Leonardo Torres y Quevedo was cranking out amazing devices at a furious clip. He invented improved dirigible airships, remote control torpedoes, primitive radio control devices, numerous calculating machines, and a famous cable car which is still in use in Niagara Falls, Canada. I visited Niagara Falls in 2002, and just as my family was about to step into the famed Aerocar, a sudden thunderstorm came up and we weren't allowed to make the trip over the famous Niagara whirlpool. I did, however, get to loudly and publicly bug out when I saw Torres y Quevedo's name on the historical marker. I started yelling, "He's the guy! That's the guy who made the first working chess computer!" My family thought I'd lost my mind, until they read the whole marker (which confirmed what I'd said). So instead of riding the Aerocar, we sat indoors during the storm and I told my chess player sons about Torres y Quevedo's "miracle machine".

He built the device sometime around 1912, and it appeared in a famous public exhibition in 1914. It appears as a simple well-made wooden table with a chess board on top. The machine can't play a full game of chess; instead it can play a simple King and Rook vs. King endgame, but it always find a path to mate. It moved the pieces via a mechanical arm; magnets under the board allowed the machine to sense the opponent's move (which had to be made by sliding the King from square to square). The machine, electrically operated, could even speak the words "check" and "mate" (using a gramophone record which was part of the device). There were a few problems with Torres y Quevedo's machine, in that the White pieces had to start on specific squares, and the machine couldn't always deliver mate within the fifty moves stipulated by the laws of chess. But it stands as an amazing engineering triumph: the first operational chess "computer" (and it still works today!).

## SUPER-SCIENCE GIVES US THE MODERN COMPUTER

Nothing will spur scientific research and development like an old-fashioned war. The Second World War, the most horrific event in human history, drove scientists and governments to frenzied research in a number of fields of "super science" which, just a few years before, had been relegated to the pages of science fiction stories. Although quite a few ideas came up a bust, numerous fantastic plans bore fruit, giving us technology which we often take for granted today: radar, jet engines, space flight, atomic energy, and computers.

Although several scientists and researchers had experimented with digital computers before the war (most notably Germany's Konrad Zuse), it took the war itself to drive the development of the computer to a form re-

sembling that which we know today. In the 1940's, properly aiming and firing a long-range artillery piece required the use of complex mathematical tables. The tables were be consulted due to the many variables which could affect the flight of a shell: distance, wind speed and direction, even temperature and humidity could influence a shell's trajectory. These artillery tables (which were printed and distributed to gunners in book form) had to be calculated manually, by hand; a full set of tables for a particular caliber gun could contain thousands of entries, each of which had to be figured out by a person who made the calculations. In fact, if you look up the word "computer" in a pre-World War II dictionary, you'll learn that the word refers to a person who makes complex calculations.

Truth be known, it was actually easier to design and create a new artillery piece than it was to calculate the firing tables for it. Thousands of people (mostly women, as the men were off on the front lines) were employed as human calculators, figuring out the proper numbers to plug into the firing tables for a new field piece. There had to be an easier way...

The U.S. War Department went full-bore into research on electronic calculating devices; electrically powered and running on vacuum tubes, these machines, primitive though they might be by today's standards, could greatly speed up the calculation of firing tables (as well as any other fairly complex math which might be required). Although the first electronic computer wasn't completed until it was too late for the machine to have any active role in the war, it was indeed the world war which prompted the development of the first electronic computer.

These early computers were room-sized and could run for only a few minutes at a time; vacuum tubes heated up easily and, with thousands of them working in a confined area, it was a common occurrence to blow out a tube due to the high temperatures they generated. How powerful were these computers? A hand-held calculator of the 1970's (considered quite primitive today) could calculate faster than the old "big box" computers. But these mammoth machines sowed the seeds of the coming digital revolution.

We should take a short look at what "digital" means while we're here. It's not strictly necessary that you know this stuff, but it's fairly interesting and good to know regardless.

Computers don't do a danged thing, really, except manipulate two numbers: 1's and 0's. They wouldn't know what a "2" was if one walked up and smacked it in the memory bank. But any number can be expressed in nothing but zeros and ones, using a number system called "binary".



Here's an example of how you'd count to ten in binary using zeros and ones:

<b>0 = 0</b>	<b>6 = 110</b>
<b>1 = 1</b>	<b>7 = 111</b>
<b>2 = 10</b>	<b>8 = 1000</b>
<b>3 = 11</b>	<b>9 = 1001</b>
<b>4 = 100</b>	<b>10 = 1010</b>
<b>5 = 101</b>	

and so on

In the normal counting scheme that we humans use, the rightmost number represents the number of ones (through nine), the next column to the left shows the number of tens (through 9 sets of ten), the next column to the left in the number of hundreds, etc. But in binary the rightmost number is the number of ones, the next column to the left is the number of twos, the next column to the left is the number of fours, the next leftmost column is the number of eights, the next would be the number of sixteens, etc.

That explains why vacuum tubes were used. If a vacuum tube is on, that's a "1". If the tube is off, that's a "0". Thus "on" and "off" correspond to "ones" and "zeroes" and, by extrapolation, also to "yes" and "no", which also explains how computer programs operate. A program asks a computer a question; if the answer is "yes" the program makes the computer do one thing, while if the answer is "no" the computer must do something else. There are no "maybes" where digital computers are concerned; everything must be answerable by a "yes" or "no". (This can make writing a program a tricky process. I used to be involved in amateur robotics, a hobby in which writing a program for a computer or robot, although it might make the machine do something relatively simple, was often an exercise in mind-bending frustration.)

No matter how complex a program may be, at its core it consists of nothing more than a series of "yes" and "no" questions. And although computers can do really cool things, like display pictures, show movies, do spreadsheet math, and play chess, when you strip away the layers of programming they're just juggling a whole lot of zeroes and ones.

# CHESS AND COMPUTERS – THEY GO TOGETHER LIKE CHOCOLATE AND PEANUT BUTTER

Chess and computers seem like a natural match. Chess players like to talk about the “calculations” they had to make when thinking about a move; since a computer is simply a calculating machine, chess and computers go together like a hand and glove.

Claude Shannon thought so too. Shannon was a seriously brainy guy who worked as a researcher at Bell Labs in New Jersey. In 1949, Shannon began to give public talks about how a computer might be programmed to play chess. He wrote two versions of a paper on the subject, a “crunchy” version for other scientists, which was published in *Philosophical Magazine*, and a less math-intensive “mass market” (in other words, simplified) version for public consumption, which was published in *Scientific American*; both articles appeared at about the same time.

Shannon speculated that a computer might be programmed to play a passable game of chess, not that there was any intrinsic value to such a pursuit in itself (we have to remember that computers at the time were still room-sized machines which cost a fortune to operate), but that research into this area might be transferable to a number of other, more useful purposes, such as automated telephone switching (still performed by human operators in 1949 – Shannon worked for Bell Labs, remember?), language translation, even as an aid to making military decisions (later explored in-depth by Trevor Dupuy in a book I own which can make your head explode from all the math in it). Shannon explored the basics of how a computer might be made to “think ahead” in chess, evaluate positions, and come to a logical conclusion as to what to play in a given position. Although some of his ideas have been shot down or replaced over time, many others are still used in programming chess computers today; his papers are still considered basic required reading for anyone who wishes to write a chess program. (You can easily find Shannon's “Programming a Computer for Playing Chess” on the Internet if you'd like to read it. And although Shannon's paper didn't furnish the algorithm [formula] for an actual chess playing program, you can find at least one downloadable program named “Shannon” [in a proprietary format] which is based primarily on his original ideas.)

The first stab at a working chess program came from across the pond from Shannon. England's legendary Alan Turing (hailed today as “the father of computer science”) wrote an actual working chess program he called *Turochamp* around the same time as Claude Shannon's theories saw print. As mentioned a paragraph ago, computers were obscenely

expensive to operate in the late 1940's, and the huge number of people (primarily government workers and academics) who needed access to them made using a computer for anything comparatively frivolous (like running a chess program) impossible. Consequently, Turing was never able to run Turochamp on an actual machine, but in 1951 he was able to have Turochamp play a human player by making all of the program's calculations manually.

**Turochamp wasn't a sophisticated program; here's a short list of the program's parameters (reproduced here verbatim from a copyrighted article I wrote in 2011 and based on information in Levy and Newborn's book *How Computers Play Chess*):**

- **Mobility:** For the pieces other than Kings and pawns, add the square roots of the number of moves that the piece can make, counting a capture as two moves.
- **Piece safety:** If a Rook, Bishop, or Knight is defended once, add 1 point; add 1.5 points if it is defended twice.
- **King mobility:** Use the same method as above, but don't count castling.
- **King safety:** Deduct x points for a vulnerable King, with x being the number of moves that a Queen could move if it were on the same square as the one occupied by the King.
- **Castling:** When evaluating a move, add 1 point if castling is still possible after the move is made. Add another point if castling is immediately possible or if the castling move has just been performed.
- **Pawn credit:** Score 0.2 points for each square advanced, plus 0.3 points for each pawn defended by one or more non-pawns.
- **Checks and mate threats:** Score 1 point for the threat of mate and a half-point for a check.
- **Point Values for Material:** Pawn=1, Knight=3, Bishop=3.5, Rook=5, Queen=10

Using these parameters, you could actually play a “test” game with (or as) Turochamp yourself, although it would be very slow going since each possible move in any position would have to be evaluated by hand using the above criteria. In fact, Turochamp's only “game” was abandoned before it was finished because it took such a long time for Turing to hand-calculate the moves.

Turochamp is also primitive because there is no “look ahead” factor; it evaluates only the moves currently possible and doesn't consider the opponent's replies or look any farther ahead. It also doesn't take factors such as stalemate into account. Here are the moves from the original Turochamp's only known game, in which Turing himself hand-calculated the moves:

.....

**Turochamp (via Turing) – Glennie, Manchester, 1952**

**1.e4 e5 2.Nc3 Nf6 3.d4 Bb4 4.Nf3 d6 5.Bd2 Nc6 6.d5 Nd4 7.h4 Bg4  
8.a4 Nxf3+ 9.gxf3 Bh5 10.Bb5+ c6 11.dxc6 0-0 12.cxb7 Rb8 13.Ba6  
Qa5 14.Qe2 Nd7 15.Rg1 Nc5 16.Rg5 Bg6 17.Bb5 Nxb7 18.0-0-0 Nc5  
19.Bc6 Rfc8 20.Bd5 Bxc3 21.Bxc3 Qxa4 22.Kd2 Ne6 23.Rg4 Nd4  
24.Qd3 Nb5 25.Bb3 Qa6 26.Bc4 Bh5 27.Rg3 Qa4 28.Bxb5 Qxb5 29.Qxd6  
Rd8 0-1**

.....

If you'd like to play against Turochamp, a proprietary downloadable version does exist on the Internet, which, however, only runs in a particular brand of commercial chess software. A Web search should turn it up. I've played against it and, while its historical value as the first real chess program is indisputable, it admittedly does play some pretty dreadful chess.

Many more scientists and theoreticians (including World Chess Champion and computer scientist Mikhail Botvinnik) would become involved with computer chess as the decades passed, but it would require further technological developments to get us to where we are today.

# COMPUTERS GET SMALLER

Vacuum tubes were big, bulky, ran really hot, and sucked a lot of electrical “juice”. Just after World War II research began on semiconductors, replacements for the vacuum tube. Various materials for their construction were tried with different levels of success, with the first silicon transistor (short for “transfer resistor”) appearing in 1954. By 1960, a new style of transistor was invented – and that's when things really took off.

Transistors replaced vacuum tubes almost immediately. Transistors were more reliable, ran cooler, were easily mass produced, and were far smaller than tubes – large radios which needed to be plugged into an AC outlet were immediately replaced by smaller portable (hand-held) radios which ran on 9 volt batteries (in fact, those rectangular batteries are still often referred to by old-timers [like me] as “radio batteries”).

Computers became more dependable, less expensive, and much smaller after the introduction of transistors. By saying “much smaller”, I mean they became ridiculously large instead of impossibly large; computers went from being room-sized to closet-sized, but they were still really big. It wasn't until the development of an affordable silicon microchip (invented in the late 1960's and developed through the 1970's) that computers became small enough and, best of all, affordable enough, to become home appliances, which happened after the microchip began to replace the transistor.

## A CHESS COMPUTER ON THE TABLE

Owning an actual computer was still a dream of many people in the 1970's; even a very simple pocket calculator was something of an expenditure. A basic pocket calculator in the mid-1970's cost several hours' pay to purchase; you can buy a more advanced disposable calculator these days for under a dollar. By contrast, when I was in the eighth grade in the mid-Seventies my physics teacher took considerable pains to teach us to use plastic slide rules, which you could then buy practically anywhere for a dollar or two; today it's almost impossible to find a slide rule anywhere outside of a museum and, if you do see one for sale, it's usually prohibitively expensive.

But dedicated computers (that is, a computer dedicated to a single task, as opposed to today's multi-purpose PCs) for the home market started to make their appearance in the mid-1970's. Simple computer games (usually based on sports, like baseball or football) became hot gift items during this time. And it was during this period that chess computers first became available to the public, but they were insanely expensive (at

a time when a cheap compact car cost \$3,000 to \$4,000, a tabletop chess computer could cost over a thousand dollars). These early chess computers were luxury items, but were also built to reflect that status, frequently being housed in expensive wood frames suitable for proud display in the home.

Tabletop computers of the time typically required the user to input a move via a keypad, similar to a calculator. You would type in the algebraic coordinates (we'll learn about algebraic chess notation in Part Two of this book) of a piece's starting square, then the coordinates of the destination square, then hit an "enter" key to submit the move. After some thinking time the computer would beep (or make some analogous sound) and display its move on a red LED (light emitting diode) display.

A bit later, the price of chess computers came down a little (but were still out of the price range of the average middle class family) and these units became more common. One of the more popular machines, which made its appearance in 1978, was known as BORIS:



**BORIS used the keypad move entry method and displayed its own moves (along with an occasional funny comment) on its LED screen. It came with a cardboard chess board and a set of plastic pieces, but the computer itself was housed in a fancy wooden box (as seen above) which easily fit on the typical coffee table. You'd open the box, remove the AC adapter, plug one end into a jack on the side of the box and the other end into any convenient wall outlet, set up the board, turn on the machine, and start a game.**

BORIS was a really cool little computer which had a very big flaw: it played terrible chess. Microchips and programming hadn't yet advanced to the point at which a chess computer could give even an average player a decent game. I own a working BORIS from that period, but seldom play

it. I'm not a terrifically strong chess player, but I can eat breakfast, with one eye on a newspaper and the other on the TV, while playing BORIS and still beat it with no difficulty.

Tabletop chess computers did continue to advance, though, and by the late 1980's you could buy a tabletop unit which played at master-level strength for a couple of hundred dollars (in 1989 money). I own two tabletop machines from that period and either of them can give me all I can handle at even a moderate level. Tabletop chess computers from this period (and many today) utilize pressure-sensitive boards, in which you press down on the piece you wish to move, pick up the piece, and press down with it on the destination square:



**Some (such as the one pictured) also feature LCD displays of the current board position, which are also often used to display the move the machine is currently considering.**



## A COMPUTER IN YOUR HAND

Handheld chess computers also became quite popular in the 1980's, when circuitry became small enough to allow a tiny chess set to play a reasonable game. Small "pegboard" sets (with pressure sensitive boards) became common; these were later supplanted by handhelds with touch-sensitive LCD screens replacing the physical board:

Handheld machines are still produced but usually aren't very strong opponents when compared to tabletop units, typically weighing in at about the chess strength of a moderate club player.

Tabletop and handheld chess computers are slowly being replaced by chess software programs which are run on personal computers (or on newer handheld devices like cell phones). Although the computers on which these programs run are more expensive than tabletop chess machines, PCs are also more versatile (they can run thousands of different programs besides chess), and the chess software itself is cheaper than most tabletop models and usually offers scores of features which dedicated chess computers don't (or can't) offer.



# STONE KNIVES AND BEARSKINS – WHAT DID CHESS PLAYERS DO BEFORE COMPUTERS?

Many present-day chess players find it hard to imagine what our game would have been like without computers. Speaking as someone who remembers those days, I can tell you that things were a lot tougher then. I don't mean to sound like the stereotypical “old guy who used to walk barefoot to school through three feet of snow uphill both ways”, but...

“Back in the day” if you wanted to play chess, you had to find someone to play with. When I was a kid in the 1970's we didn't own a chess computer, so if I wanted to play a game I had to corral someone: my dad, a friend, some kid at school. More often than not, there was no way to get a game – none. Nobody wanted to play, or there was no one around, or it was ten o'clock at night and my folks wouldn't let me leave the house.

So if you wanted to do something marginally chess-related, you'd most likely just crack open a chess book and do some studying. You might solve some tactics problems, or go over a particular endgame, or play the moves of a certain opening. And then you'd go over it again. Then again. And you'd hope that you'd be able to remember what you'd studied the next time you played a game. But there was no real way to practice your chess unless another person was available and wanted to play.

The closest I'd get to a game if no one was around was a book called Solitaire Chess, written by I.A. Horowitz. It was basically a “guess the next move” book in which you'd go through a classic game, taking the side of one of the players, and try to anticipate the opponent's next move. Horowitz would award you points if you guessed correctly, the number depending on how hard the next move was to figure out. It was fun, but it could only take you so far. (More recently, Bruce Pandolfini revived this same idea in his column in Chess Life magazine, paying appropriate tribute to Al Horowitz.)

I'm sometimes asked, “If studying and improving at chess was so hard back then, how could Bobby Fischer become world chess champion without a computer?” That's an excellent question, and I attribute his success to a variety of factors.

First of all, the great players of the pre-computer era frequently lived in metropolitan areas which were regarded as major centers for the game of chess. During the mid-1800's, London was considered a chess center, and quite a few strong players (most notably Howard Staunton) lived in or near London. A few decades later, a coterie of strong players (Brey-

er, Reti, and Tartakower among them) were based in Vienna. In America, New York was traditionally the center of chess activity (this is now beginning to change, however); when Fischer was a kid, he made his home in New York and belonged to the city's major chess clubs. In fact, Bobby was practically raised by Jack Collins whose house was essentially a chess library and museum, and the base for the small Hawthorne Chess Club. New York was the home of many strong players at the time Bobby was growing up.

That brings me to the second point: practically all Bobby did, from the time he was quite young to adulthood, was to play, read about, and think about chess. He did poorly in school because nearly everything except chess bored him terribly. His nearly monomaniacal obsession with chess is well-documented. He amassed a sizable chess library, books and magazines which he pored over and annotated (chess books which Fischer owned containing notes he'd scrawled in the margins are highly-priced collector items today).

Of course, being obsessed with a hobby or pursuit, or devoting your life to it, is not a guarantee that you'll be in any way successful at it – and that brings me to the third point. Bobby was gifted with a natural talent for the game, and it was a happy accident that he discovered chess given that he already innately possessed the “right tools for the job”.

Bobby's success can be attributed to the combination of several factors: being the right person in the right place at the right time with the right specific interest. And by far the biggest factor in his success was his own hard work – tons and tons of it, made especially hard by the absence of computerized chess tools.

The advent of chess computers, especially of playing and database programs, not to mention Internet communications (much of which will be considered later in Part One of this book), eliminate at least a couple of the hurdles which Fischer was forced to herculean lengths in order to overcome, and which held back many young players like myself in the pre-computer era. Among those hurdles are opportunity, feedback, and time, which we'll revisit later in Part One. Owning a chess playing software program provides you with limitless opportunities to play chess, opportunities which were few and far between for those of us who weren't blessed to live in a major city with a thriving chess scene. A chess playing program will also analyze your games, showing you where you went wrong and how you could have played better, thereby giving you feedback on your chess play. Chess programs with database capabilities save you literally hours of time: instead of

digging around through chess book after chess book, searching for one particular game, a chess program can pull it up from a database of games in an instant.

And it all started very simply sometime around 1980...

# CHESS COMES HOME FOR GOOD – IN THE BEGINNING...

The personal computer revolution began with the introduction of affordable home computers (like the various Tandy, Commodore, and Atari models) circa 1980. Although I didn't own a computer at that time, several of my friends bought home computers specifically to be able to run the new (and proliferating) computerized simulation wargames on them.

As noted before, chess and computers were a natural match. The first commercially available chess playing program for these new home PCs was called Microchess. First released in 1976 for one particular proprietary computer system, but by the turn of the decade it was available in versions tailored for all of the major home PC brands.

The idea of computer chess was so seductive that even the game console market got into the act. Atari, makers of the wildly popular Atari 2600 home video gaming system released a Video Chess cartridge in 1979. I'm happy to say that I was one of the first customers for this cartridge; although my family didn't own a personal computer, we did have an Atari 2600 console. The Atari chess game had several playing levels, which determined the program's thinking time (the amount of time it would ponder a reply before making its move), ranging from one second to twelve hours per move. I have to report that it played fairly miserable chess on any reasonable time setting (any time setting at which a person would actually feel like waiting around for the computer to move). You had to use a physical board, too, if you wanted to analyze a position while the computer was thinking – while the computer pondered a reply, it rapidly flashed an array of bright colors on the TV screen (which, rumor has it, could actually induce seizures in players afflicted with epilepsy).

## THE BOMBSHELL

By the mid-1980's home computers were still something of a rarity (when compared to the present day, anyway), but were selling well enough for computer stores to begin appearing in shopping centers and strip malls in moderate-sized towns (20,000 population and up). By this time two generations of potential computer buyers had seen Mr. Spock play chess against a computer on TV's Star Trek and the malfunctioning computer HAL 9000 win a chess game in the film 2001: A Space Odyssey. It was high time for a chess computer program to hit the fledgling mass market in a really big way.

In 1986, the first version of a chess program called Chessmaster hit the shelves of software stores like a bombshell. While not the first or only commercial chess program, Chessmaster immediately became the best known and most popular of the bunch. The program was published simultaneously (or nearly so) for ten separate proprietary systems; it seemed that no matter what kind of home computer system you owned, you could buy a version of Chessmaster that would run it. The software's publisher scored a major public relations coup by getting Chessmaster 2000 (the first version's title) featured on PBS's broadcasts of the 1986 World Chess Championship, played between Garry Kasparov and Anatoly Karpov; despite the fact that the software typically produced abysmally bad moves when consulted by Shelby Lyman, the program's host (due in part to the ineptitude of the computer's operator coupled with a lack of understanding of how computers analyze chess positions), the exposure provided a major sales driver. Chessmaster eventually became the world's best selling chess software, going through twelve versions before its final iteration was released in 2007.

Chessmaster set the benchmark for every chess playing and analysis program which followed it. Initially easy to use (successive versions would become more Byzantine as the series progressed), Chessmaster made several innovations along the way which influenced the rest of the chess software industry. The program featured variable time controls and level settings, and included rudimentary database features. Chessmaster 4000 in 1993 introduced multimedia features. By the time Chessmaster 6000 hit the shelves in 1998, the program contained multimedia chess instruction, plus a really great “hook”: dozens of personalities of all skill levels against which the user could compete – the overall effect was that of having a whole chess club full of players at your beck and call.

## THE GORILLA IN THE CORNER

In the mid-1980's a bunch of big brain graduate students began work on a chess computer like no other. Originally calling their project/computer Chiptest, the idea was to build a big honkin' chess computer to test ideas on how multiple computer processors could be run in parallel, dividing huge computing tasks between them to solve the problems in much less time. That was the “party line” anyway; I'm sure that in some small measure the project was to build a huge honkin' chess computer because it's an extremely cool thing to do.

By the end of the decade the computer had been rechristened Deep Thought. Its first version contained two parallel processors and could analyze three-quarters of a million chess positions a second. Bear in mind that this was at a time when the now-antiquated and hopelessly slow 8088 processor was the standard for home computers; as I write this in 2012, Chess King's engine Houdini 2 Pro analyzes more than three million positions a second on my relatively inexpensive dual-core home machine. But the reason why I even have a dual-core machine is due in large measure to the Deep Thought team's research into parallel processing back in the 1980's.

An improved version of Deep Thought, containing six processors and capable of analyzing a full two million positions a second, played a two game match against then world chess champion Garry Kasparov in New York in 1989. The computer lost both games, one because of a bad bug in the programming which miscalculated the importance of castling. The match earned some attention nationally and was the subject of a PBS Nova broadcast on how computers “think” (a show well worth tracking down if you'd like to watch it).

Kasparov was quoted at the time as saying, “Right now there is no limit, because I can win any challenge.” With 20/20 hindsight we can smile and emphasize the “right now” in that statement, as everything was soon to change.

Commercial computer hardware manufacturers weren't snoozing during this period. From the late 1980's to the mid-1990's home computer processors became faster and faster. A joke circulating at the time (said only partially in jest) was that home computer technology was advancing so quickly that any computer you bought would be obsolete by the time you took it home and got it out of the box. In 1994 Intel unveiled its first Pentium processor; Kasparov didn't know it at the time, but the Pentium's introduction would mark the beginning of his doom when playing chess against machines.

In May 1994 a major blitz tournament was held in Munich, Germany. Eighteen top players participated, including Kasparov and a commercial chess program called Fritz. In their individual contest, Garry with the White pieces opened with 1.e3, an old trick human players often use to try to get the computer out of its pre-programmed opening book. Fritz shot back 1...d5 to grab the center. The game's opening transposed into a Queen's Gambit Accepted and, when the proverbial smoke of battle cleared, Fritz was the winner. It was the first time that a chess computer had defeated a reigning world champion in a recognized tournament

game. A few months later, in August, Kasparov lost to another commercial program (called Chess Genius), again running on a Pentium computer, this time at a time control of game in twenty-five minutes, in an Intel-sponsored tournament in London.

The writing seemed to be on the wall for Garry Kasparov, but these games spurred a huge public interest in computer chess. Programming teams rushed to get chess playing computer programs onto the commercial market.

## SOME HIGHLIGHTS OF HOME COMPUTER CHESS THROUGH 1998

During the years 1995 through 1998 an amazing number of chess programs became available for purchase in software shops and “big box” department stores. It wasn't hard for interested consumers to find a chess program; the toughest job was to pick one.

Here are some advances and highlights from the home computer chess scene in the 1980's and 1990's (adapted and edited from a CD I wrote about computer chess in 2002):

Early 1980's: Interplay released Battle Chess, one of the most famous chess programs to ever hit the market. When one piece captured another an animated battle would occur between the two, with the captured piece as the loser. Battle Chess was immensely popular, as it was reminiscent of the Millennium Falcon's chess-like holographic Dejarik game featured in Star Wars Episode IV. The problem with Battle Chess was that it took an eternity to finish a game because of the animations. Regardless, it was a huge seller and is often the first thing many people mention when they hear the phrase “computer chess”.

1991: Chessmaster 3000 introduced “natural language advice” of a fairly rudimentary sort: “If White takes on c2, Black replies with a capture on c2, and White replies with a check on g5, White will be ahead.” Although this was just computer generated analysis tarted up with a few stock phrases, the illusion of “plain English” advice from a computer was impressive and drove quite a few sales.

1992: ChessBase University was a series of instructional chess courses which were not “standalones” but were run as add-ons to ChessBase's Knightstalker/Fritz playing programs. The idea was to use the inherently

interactive nature of a chess program to teach chess concepts to the user and help them improve. Numerous authors (including myself) contributed to the series of about two dozen titles. The lack of multimedia support, the necessity for the user to know DOS commands, and changes in the «host/platform» chess program Fritz caused the series to be canceled in 1994. Even so, ChessBase University paved the way for the numerous instructional chess programs which came later (including the Chess King family of instructional chess programs).

1993: Hiarcs2 became the first (to my knowledge) commercial program to utilize the «Fischer» (a.k.a. “delay”) clock. It also played a more positional, human-like game than many other chess programs, a characteristic that still applies to newer versions of Hiarcs today.

1993: Chessmaster 4000 introduced a feature which allowed users to create and edit new opening libraries for the computer's reference while playing a game. CM 4000 also made great use of then-new multimedia computer functions; the program included a beautiful “virtual tour” of the Cleveland Public Library's impressive, legendary chess collection.

1993: Another early software effort to effectively use multimedia was Kasparov's Gambit. As a game progressed, a digitized video of Garry Kasparov's face would occasionally appear and make brief comments directed at the user (such as “Nice move”) in Kasparov's actual voice. Even better (for those of us who had babies or toddlers in the house) was the ability to suspend a rated game in progress and return to it later.

1995: Maurice Ashley Teaches Chess made the best use of multimedia yet, as videos of GM Ashley guided the user through a series of chess problems and exercises; the overall effect was the illusion of having personalized instruction from Maurice Ashley himself. (My children loved this program in the late 1990's; today, as college students, they still mention GM Ashley frequently when the subject of chess comes up in the conversation.)

1996: One of the most remarkable commercial chess programs of all time, Power Chess, hit the market. The entire program was one huge “hook” to get you to keep coming back for more chess fun. Instead of having “difficulty levels”, Power Chess was populated by an assortment of characters (pirates, samurai, aliens, clergymen, robots, obnoxious children) ranked in a hierarchy of playing strength/difficulty; it was hard to not get caught up in a “virtual chess rivalry” with an especially tough to beat character. Reigning over all was the Power Chess King, a tyrant whom even his wife wanted to see deposed – thus the sexy-voiced Queen would coach you



between games in techniques to use against her power-mad husband, in the hope that you would beat him. Power Chess also contained the first “adaptive opponent” in a home chess application: the King was programmed to change his strength depending on how well you did against him – the idea was to allow the user to win about 25% of his or her games against the King. Power Chess also offered Internet play against other people; I was a happy member of a cool little online “Power Chess club” for a while, playing with the nicest bunch of people I’ve ever encountered on an online chess server. Power Chess was crippled by the fact that it never ran well on any Windows version after Windows 95 (a common failing with most Sierra software titles of the period); the company was sold, the programming team was disbanded, and Power Chess sadly faded into obscurity, fondly remembered by a few as one of the coolest chess programs of all time.

1996: A bizarre controversy surrounded the Chess Wars program. Similar in concept to Battle Chess, a capture in Chess Wars would be accompanied by a (bloodless) video of human medieval re-enactors fighting man to man. Despite the fact that I’ve seen worse fights over the last turkey leg at a Renaissance festival, some users overreacted at the “violence” of the program. Oddly, these same users never complained about the fact that a significant number of Chess Wars’ features didn’t work at all, and a promised upgrade to fix the problems never materialized. It’s worth tracking this one down at thrift shops or yard sales if you have an old computer to run it on, just so you can laugh at what all the “uproar” was about.

1997: Another controversial chess program hit the market when U.S. Chess Federation Chess made it to store shelves. The program allowed the user to play rated games and, if not yet a USCF member, print out a rating certificate based on his in-game results which could be used as the player’s official rating in his first USCF tournament. Established USCF rated players raised a ruckus over it and the (admittedly bad) idea faded away, due more to the fact that the program was riddled with bugs and was thus a commercial dud than to the objections of USCF rated players.

1997: The Fritz 5 program introduced “Sparring mode”; as the chess engine analyzed, if it saw a tactical shot for the human player in a future position, the program would steer toward that position instead of trying to avoid it, and would even notify the user by flashing a light on the screen. The feature was five years in development and was (in my opinion) a really significant advance in chess software. The actual workings of “Sparring mode” are a trade secret, and though the feature has been in every version of Fritz released since v5, it has never been duplicated by another software manufacturer.

1998: Chessmaster 6000 took a huge leap forward in “user friendliness” by lifting a page from the proverbial book of competing programs like Power Chess and Hoyle Board Games when it offered a bevy of “characters” to play against. But unlike the other programs which offered a dozen or so characters (including “over the top” personalities like dinosaurs and robots), CM 6000 offered sixty different characters as opponents, each with a photo, short biography, approximate rating, and capsule description of his/her chess preferences and tendencies. It was very much like having a large “virtual chess club” on your computer, as the players' ratings ranged from complete beginners to grandmaster levels.

The software-buying public seemed to have an insatiable appetite for chess programs throughout the 1990's. It was more a matter of fact than a matter of faith that if a computer user owned one chess program, he or she would own several. In addition to dozens of “mass market” programs, sold in software stores and department stores, there were numerous “specialty” chess programs marketed to the “serious” (e.g. club and tournament) chess player. While light on the tutorial features of mass-market software, these high-end programs were laden with features geared toward everyone from the weekend warrior tournament player to professional masters and grandmasters: these included opening book editors, database features, analysis and annotation tools, and “modular” engines (which allowed multiple engines to simultaneously analyze positions). The programs were correspondingly more expensive: software like Chess Genius, Fritz, Hiarc, and Zarkov typically cost over a hundred dollars each (compared to the mass market offerings which typically sported price tags in the \$15 to \$20 range).

As I said earlier, the toughest chore for a potential buyer of a chess program was choosing one. That would change in a few short years after a couple of new developments at the top levels...

## HUMANS MEET THEIR MATCH

Although chess engines running on high end home computer hardware had been able to defeat all but the world's top echelon of chess players for a couple of years by the start of 1996 (and, even on average hardware, had been able to defeat club players for even longer), many human players held it as an article of faith that a computer program would never be able to defeat a world champion.

Early in 1996, Garry Kasparov once again met his silicon nemesis, now rechristened Deep Blue (since “Big Blue” [IBM] was now sponsoring the

project) in a six game match played in Philadelphia. The event garnered a huge amount of interest, even among the non-chessplaying public. At the time the match was played, I was employed as a computer analyst for a large corporation and, following each game, co-workers from all over the facility would drop by the lab to discuss the latest results with me; most of these folks were either non-players or interested casual players. And, despite the fact that many of these people were programmers, technicians, or other computer professionals, nearly every one of them expressed the hope that Garry Kasparov would emerge victorious.

Fans rooting for Garry weren't disappointed. The champion scored a 4-2 victory (but a computer win in the last game would have made the match a tie).

The following year brought the ultimate challenge for the human world champion. A solid year of tinkering and analysis brought forth a Deep Blue that was even stronger than the version Kasparov had fought the previous year. In May, 1997 Garry Kasparov faced Deep Blue in New York City, in a six game match against the imposing behemoth housed in a pair of black metal cabinets.

And lost.

Much ink has been spilled in the print medium (and many electrons sacrificed online) in analysis of this match; I own two or three books written about the event and have perused innumerable web sites devoted to the subject. The following, in “Cliff Notes” terms, is basically what happened.

Garry won the first game, but lost the second – and, worse yet, had resigned in a drawing position. In an incident which demonstrates the power of the Internet (which at that time was just beginning to become a tool for the general public rather than the domain of academics), an amateur player posted analysis within hours of the game's end in which he successfully demonstrated that Kasparov could have drawn Game Two.

There has been a world of controversy surrounding the match which began the day after Game Two, including arguments which persist to this day. Kasparov couldn't believe what he'd done, and much of the fight seemed to go out of him at that point. Kasparov (as well as his supporters) began to accuse IBM of cheating by using human grandmaster analysis during games; the champion publicly refused to believe that he'd been bested by a machine “fair and square” (despite the fact that he'd

previously lost the first game of the 1996 match to an earlier version of the computer). Supporters of the IBM team accused Kasparov mere blustering to mask the psychological shock he'd suffered by resigning in a drawn position.

By the end of Game Five, the score was tied at 2.5 games each. The final game was played on a Sunday, May 11th. I remember the game well, as it was a day off from work for me, and I was providing live opening book, database (from what was at the time one of the world's largest privately-owned chess databases), and computer analysis for online viewers of the match. The world champion, playing the Black pieces, committed a horrible blunder on his seventh move (and a surprising one, since the move was a well-known stinker, even at the amateur level) and he was never able to recover from his mistake; he resigned after White's nineteenth move.

The following day I wrote an essay on what I saw as the future impact of Kasparov's defeat, which was published a week after the event on a ChessBase-sponsored web site. I'm reprinting it verbatim here (being as I'm the copyright holder) because it addresses a few points about chess and computers which we'll return to a bit later on in this book.

# CONFRONTING THE BEAST: SOME THOUGHTS ON KASPAROV VS. DEEP BLUE

**(Originally published by Steve Lopez in May 1997)**

It's been just over 24 hours as I sit and type these words and I'm still waiting patiently for Doomsday to hit. As I look out the window of my basement office, I can see that the leaves are finally out on the two maple trees in the yard and that the grass is still green (and badly in need of cutting. «Doomsday» at my house comes when I see giant anacondas slithering through the tall grass and I realize that I can't put off mowing the lawn any longer). The view of the yard looks the same as it did two days ago, before Kasparov lost Game Six, and I expect that it will look much the same tomorrow. I can infer from this that Doomsday ain't coming.

I've been avidly reading the posts on the Usenet chess newsgroups for over a day now. Those that are posting fall generally into two camps: those that think humankind irretrievably lost something yesterday when Garry tipped his King and those that don't understand what the fuss is all about. Count me in the latter category.

I have a somewhat different take on computers than many people. I guess I can chalk that up to the time in which I was born. I'm old enough to remember what it was like when nobody except universities and large corporations had access to computers, but young enough to not be intimidated by the dang things. I bought my first PC in 1992; in fact, I'm typing these words on the same PC right now. I bought it for one reason (and never mind what I told my wife): to play chess. But a month after I bought the box, I had an epiphany of sorts while reading a book on information theory. I realized that a computer, by definition, by design, is a tool. Nothing more, nothing less. It's a bit more complex and versatile than a screwdriver but you can pretty much lump it into the same category. If I have a job to do, I need the correct tool. If I need to put together bikes for my kids I use a screwdriver. If I need to put together an analysis sheet on the hideous opening Kasparov played in yesterday's game I use a computer.

Now before someone takes me to task for saying that the World Chess Champion just lost a match to an electronic screwdriver, let's approach the thesis from a different angle. Bear with me here and keep the «tool» analogy in mind as we go along.

## THE BIRTH OF A NEW TOOL

No, it's not the Binford Rocket Boy 9000 speed drill with four-speed reverse motor and adjustable chuck. It's something even more manly. Let's all grunt together as we read the following quote:

“

*By 'augmenting man's intellect' we mean increasing the capability of a man to approach a complex problem situation, gain comprehension to suit his particular needs, and to derive solutions to problems. Increased capability in this respect is taken to mean...that comprehension can be gained more quickly; that better comprehension can be gained; that a useful degree of comprehension can be gained where previously the situation was too complex; that solutions can be produced more quickly; that better solutions can be produced; that solutions can be found where previously the human could find none. And by 'complex situations' we include the professional problems of diplomats, executives, social scientists, life scientists, physical scientists, attorneys, designers -- whether the problem situation exists for twenty minutes or twenty years. We do not speak of isolated clever tricks that help in particular situations. We refer to a way of life in an integrated domain where hunches, cut--and-try, intangibles, and the human 'feel for a situation' usefully coexist with powerful concepts, streamlined terminology and notation, sophisticated methods, and high-powered electronic aids.*

”

When Douglas Englebart penned those words in 1963, a new tool was born. «Congratulations, Mr. Englebart...it's a processor!»

Computers had been around for close to twenty years when Doug Englebart wrote «A Conceptual Framework for Augmenting Man's Intellect» but nobody was quite sure what to do with them. Sure, one could do complex mathematical operations with a computer, one could do mindbending statistical analysis, but what were the machines really good for besides crunching numbers?

Englebart's article defined what a computer was good for and even dared to go beyond that simple definition. He envisioned a world in which humans and computers worked together to solve problems that humans couldn't solve unaided. That world is defined with startling clarity in the paragraph I just quoted. Go back and read it again. Once the comprehension of what he's saying hits you, I defy you to prevent a Tim Allen-esque grunt from passing your lips.

But do you know the sad part? This brilliant vision was either ignored or scoffed at for close to another two decades. It took a couple of hippie-types named Steve to bring the concept to the world's attention in the

early 80's. Nowadays many of us are so closely wedded to our computers that we can't imagine life without them. What took us so long to figure it all out?

## FIGURING OUT THE NEW TOOL

The personal computer really is a remarkable tool. I can do all sorts of interesting and valuable things on it. I can store an entire encyclopedia on a compact disk and search for specific information on nearly any topic quickly and easily. I can simulate an entire English League soccer season in a matter of seconds. I can write letters and send them electronically without a pen having touched a paper or a tongue having licked a stamp. I can «talk» to friends the world over in real time by typing words on my keyboard, words which they see on their screens a mere fraction of a second later. I can control my personal finances, do my taxes, and even send my 1040 to the IRS electronically.

And then there's chess, the reason I bought the infernal device. I can play a game against a computer any time of the day or night, without shame or embarrassment if I should lose. Many years ago, I made part of my living as a bar-room chess hustler and never had a problem getting a game. Nowadays I take my set out and hit the town and I may have to go to three or four places before I find an opponent. Everybody who wants to play is at home either challenging their computer or playing online.

It's a far cry from the days of my childhood. Back then, if I wanted to play chess I had to either find an opponent or be stuck playing through games from books. The closest I could get to anything competitive in the latter case was Al Horowitz's «Solitaire Chess» feature in Chess Life. These days, I just turn on my PC and fire up any of my 50+ chessplaying programs. I can get a game at any level, from the no-brain play of Clueless to the razor-sharp tactics of Fritz4.

When my game is done, I can use that game I've played to help me improve. I can fire up ChessBase and do a database search on the opening I played in my game against the computer. I have access to opening trees and games with grandmaster commentary as well as hundreds of thousands of unannotated games. I can find out quickly and easily where I strayed in the opening and whether or not there's a better line that I could have played.

After that, I can have a strong chessplaying engine analyze every move of my game and show me exactly where I went wrong. And, after several of these analyzed games, I can see patterns developing in my play. I can isolate fundamental gaps and weaknesses in my chess knowledge and concentrate on improving these weak points.

Then I can go back and test myself in another game against the computer, starting the process anew. This is exactly the kind of «integrated domain» envisioned by Doug Englebart. I use the computer to test me and to educate me. I use it as a tool to find the answers to complex questions about chess, to test out ideas that I have, to help me identify strengths and isolate weaknesses. In short, the computer is my partner in the quest to improve my chess, rather than an enemy to be feared and reviled.

Just where did this idea of «computer as enemy» come from, anyway?

### **ELECTRONIC BRAINS: THE COMPUTER IS YOUR ENEMY**

It's ironic that one of the world's leading «tech heads», Arthur C. Clarke, did so much to engender society's general mistrust of computers.

By the mid-1960's, most people had a mental picture of a computer as being some kind of large cabinet with flashing lights and spinning tape reels and which could perform mathematical tasks at a prodigious rate. Computers were interesting, a bit off-putting, but essentially benign machines in the minds of most.

Then came HAL.

HAL9000 from 2001: A Space Odyssey (and, to a lesser extent, the female-voiced computer on Star Trek) helped to define computers and the concept of artificial intelligence for a whole generation of people. And the picture HAL painted wasn't pretty.

In the film, a strange black monolith is uncovered at the bottom of the crater Tycho on the moon. It beams a high-powered signal outward to the vicinity of Jupiter. The government sends a team of scientists to Jupiter to investigate the recipient of this transmission. The spacecraft carrying these scientists is controlled in large measure by an intelligent supercomputer named HAL.

Making a long story short, two of the scientists decide to scuttle the mission. HAL has been programmed to carry out the mission at all costs. So he (it?) murders all of the scientists save one, who manages to disconnect HAL just as the ship is approaching Jupiter.

Charming picture, eh? And I find it ironic that the story was penned by one of technology's greatest champions, the father of the communications satellite, Arthur C. Clarke.



2001: A Space Odyssey didn't shape our perceptions about computers and AI single-handedly. It had a lot of help from the endless imitators that followed, from the computer-as-menace no-brainer film *Colossus: The Forbin Project* to the highly derivative David Gerrold novel *When Harlie was One*. The grand tradition continues to this day, with luddite films such as *Ghost in the Machine* appearing with alarming regularity (said film having the singular distinction of being the only movie I have ever walked out on. And, speaking as a connoisseur of «B» movies, that really says something about how totally tasteless and moronic it was). Even good science fiction programs (such as *Star Trek: The Next Generation*) suffer an occasional lapse and dredge up the hoary old cliché of the «maniac out of control» computer. It's a hard image to avoid, even if you want to, even if you try to.

Advertisers of computers even get lazy and fall back on this stupid stuff. I recall one ad in particular that showed a professional woman sitting at her PC, waving a floppy disk in front of the monitor, and telling the machine in a chiding tone, «Now I want this back...» I vowed on the spot to never buy a computer from the company that dreamed up that idiotic ad.

Unfortunately, the net result of this «computer as menace» blitz is that the message has been hammered into our heads over and over: «Computers are evil, computers are taking over the world, computers are bent on human destruction». It lurks in the backs of all our minds, even the minds of those of us who know better. No wonder thousands of people are still today afraid to touch the dang things, even after they've spent thousands to purchase one. Nobody really believes that these devices are sentient beings bent on achieving our downfall, but the message from the films that I mentioned nag at the backs of our minds.

Consider for a moment the fear that many first-time PC users display, just from having to work with a desktop Pentium 133MHz computer with 16 MB RAM and a 1 gig hard drive. Now imagine what these folks would do when confronted by a (\*GASP\*) mainframe?

### WHITHER GOES IBM?

Deep Blue is one intimidating piece of hardware. It looks like two black refrigerators sitting side by side. The power cables for it make standard 220 cord look like angelhair pasta. Plus it requires a specialized environment: Deep Blue craves air conditioning as badly as the main character in H.P. Lovecraft's story «Cool Air». It calculates and evaluates chess moves so quickly that any attempt to display all of its thoughts on a monitor simply results in a cursor blur. And it accesses a database of over a million games so quickly that ChessBase looks like a snail by comparison.

This stuff is a bit overwhelming even for those of us who don't buy into «HALphobia». I can imagine what this beast looks like to someone who watched Colossus three too many times.

So why did IBM spend millions of dollars on a computer that would ultimately play chess better than any human in the world? Was it an insidious attempt to destroy humanity? (If you answered «yes» to that, turn off your computer right now and go turn on your TV. You're missing The X-Files). Was it an altruistic gesture designed to entertain and enthrall chess fans the world over? (If you answered «yes» to that, go turn on your TV as well; there should be some Fantasy Island reruns coming on soon).

First of all, they wanted to make buckets of ducats. That goes without saying (but I said it anyway). They received tons of PR value from it. CNN ran pieces on the match all week long; you can't buy publicity like that.

But they had another motive too, one which may also translate into tons of greenbacks for Big Blue. It was a foray into the realm of «expert systems», sort of the poor man's Artificial Intelligence.

Picture this: you're a doctor and you have a patient who is suffering from some kind of «mystery» ailment. You've consulted with your colleagues, read stacks of medical references until your eyes are red, and you're still baffled.

Wouldn't it be great to just fire up a computer, type in some information, and have it find a solution for you? And wouldn't it be awesome if it could do it interactively? The «conversation» might go like this:

You (the doctor) type in a list of symptoms. After a database search of a few seconds, the program presents you with a list of fifty possible maladies. It then asks you to get more specific: «Is the patient running a high fever?»

You answer «no» and the program eliminates the Malaysian Jungle Fever as well as 34 other afflictions. Next it inquires, «Does the patient display a nasal discharge?»

You reply «yes,» and 10 more illnesses go out the window. The program then shows the remaining five diseases and asks, «Does the patient suffer from sinus congestion?» You say «yes» and BOOM! -- we're down to two.

The program asks «Is it ragweed season?». You reply «no» and one more affliction is eliminated. The screen now displays simply «Common cold».

You click a button marked «Treatment» on the screen and after another database search, you finally get the answer you need:

«Chicken Soup»

Aside from the fact that you're now quacking like a duck, «doctor», I'm sure you see the potential here. Such a computer/program would be an invaluable tool to the medical profession. My kid nephew is extremely sick right now, has been for months, and nobody can figure out what's wrong with him. I would love for the doctors to be able to utilize an interactive tool like this one and cure this kid today.

Of course, we saw how this «miracle» device works. Through a combination of database searching and interactive questioning (an active function of the program's set of instructions, or «heuristics») you get a sort of «doctor's helper», able to unravel the knotty problems facing members of the medical profession.

We call these computers/programs «expert systems». It's a way to digitize expert knowledge in a particular field of endeavor and make that knowledge available to less skilled individuals.

With a little thought, we can imagine other applications for this technology. Engineers can use expert systems to better design everything from stronger bridges to more aerodynamic NASCAR vehicles. Palentologists could type in the mineral composition of a plot of ground as well as the depth at which to search and come up with a probability of fossils being discovered there. The same process could be used in the search for fossil fuels. The possibilities are astounding.

## **CHESS EXPERT SYSTEMS?**

Deep Blue used the two functions we've discussed (database search and heuristic questioning) to defeat the world's strongest human player. It asked itself questions to evaluate positions and simultaneously conducted database searches to look for similar positions.

Can this primitive expert systems technology be adapted to other, more important fields of endeavor? Only time will tell but the future looks bright.

But what about the chessplayers who feel let down and cheated by the fact that a big chunk of silicon just trashed the world's best carbon-based chessplayer? What's going to happen to chessplayers after IBM packs up its chess toy and moves on to these more vital areas of research?

I have news for you, my fellow player: we're all going to get better.

Allow me to digress for just a moment. I mentioned earlier how I couldn't play chess as a kid unless I managed to find a friend or relative who would sit down and give me a game. I learned the game of chess at the age of four but I never progressed to a competent level until I was over 30 years old. A big reason for this slow progress was a lack of opportunities to play chess.

I still remember (back in 1992) the first time I saw the combination of Knightstalker and ChessBase University. I told Don Maddox, «If I'd had this when I was a kid, I'd be a much better player today!» And it's true -- if I'd had these tools then, I might be halfway good now.

The strength of chessplaying programs has increased dramatically over the years. In the late 1970's it was considered a big deal if a program beat a Class B player. These days you can buy a chessplaying program for your PC that'll tear the head off of many grandmasters.

The technology is now in place and most grandmasters have embraced it rather than shied away from it. Many of them are overjoyed that they finally have a training/analysis partner available 24 hours a day. Vladimir no longer wakes up in the middle of the night with a great new novelty running through his head, picks up a phone, and yells «Nikolai! You must come over right now! I have an idea I want to test!» He instead makes a pot of coffee, sits down at a computer, fires up a database program to see if the idea's been played, and then uses a strong playing program to analyze the resulting position and to test the idea in practical play.

The net result: better grandmasters playing more beautiful chess games for all of us to enjoy.

This approach works for players of all levels. I remember (from my pre-computer days) a position from a book that was driving me nuts. The book evaluated the position as being won for White. I searched and searched and couldn't see a win. Then, after getting a PC, I first did a database search for the position. One game came up on the list, a game which I replayed, sitting back and enjoying the entertaining King hunt. Then I let a playing program chew on the position, setting it up to play game after game. White never lost, and now I finally understand the analysis.

## SO WHAT'S MISSING?

The tools are all here: a primitive type of heuristic questioning in the form of chessplaying programs plus the database search functions. The number of different types of database searches has increased as well over the last couple of years. Now in ChessBase you can do position searches that include what's on the board, what's not on the board, and what might be on the board (for example, White's King on either f1 or g1). We can do material searches, right down to opposite-colored Bishops. We can even search for material sacrifices.

The hardware has made a difference too. Five years ago, when a 486/25 was considered a miracle of technology, 50,000 games was a big database. These days it's considered to be laughably small. Databases of more than a million games can be compiled and accessed quickly, easily, and cheaply. On my Pentium 133 I can do a search of 600,000 games off of a CD (which is slower than accessing them from a hard drive) in less time than it takes to go get a cup of coffee.

So what's missing? What keeps all of this from being a complete expert system?

One school of thought says «nothing». In Englebart's original vision, humans and computers worked in an integrated domain, sharing the workload. Humans defined the problem, computers helped them find the answers.

The tools to do that are in place. But researchers in expert systems want to take this one step further. They want the computer to be able to define the problem.

Let's look at an example. Suppose you're playing the White side of the Caro-Kann Advance and you keep getting your butt kicked game after game. The logical steps here are to do database searches to see what strong players are doing with the opening plus have playing programs do analysis of your games to see where your weakness lies.

Suppose, though, even after doing that, you're still unable to interpret the data and figure out the problem. Wouldn't it be wonderful to feed your games as well as collected GM data to a computer and have it spit out an answer in plain English?

That's the second school of thought, the missing piece of the expert systems puzzle. Remarkable as the present tools are, they still can't slap one in the face and say «No, stupid! Not that -- this!!!» They can't take the workload completely off one's shoulders.

But help is lurking somewhere just over the horizon. Instructional software is getting better and better. I had my first look at Chess Mentor last week and I was really impressed. It's not every piece of software that can throw you a position, ask you what you'd play, and then explain why dang near any move you made is right or wrong. True, the analysis is pre-written, but I can see a day coming, possibly in my lifetime, when the computer will actually generate the analysis and dialog right on the spot. It will be able to analyze our weaknesses and provide us with corrective measures, improving our play.

Something a bit like this exists now for beginning to low-intermediate players. The program Power Chess will allow you to play a game against it and then provide you with spoken analysis of your play immediately following the game. The analysis is a bit superficial for stronger players but it's still a slick little program and worth the 18 bucks just to see the spoken analysis in action.

Programmers have taken their first baby steps towards giving us expert system chess tools for our PCs, but they've taken a big jump forward this past week toward proving that an expert program can be a match for the acknowledged best in a specialized field of endeavor. When a computer can teach a human something beneficial, the event becomes a cause for celebration, not a reason to regard the machine in the same light as Arthur C. Clarke's fictional creation.

No, Kasparov losing to Deep Blue isn't the end of the world. To crib from Aldous Huxley, I believe it's the start of a brave new world. If it's a world that will help us to become better at what we do, whether it's playing chess or performing chemical research or hunting for Apatosaurus remains, I for one am ready to embrace that world wholeheartedly.

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is copyrighted 1997, Steven A. Lopez.  
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## ADDENDUM

I had to smile when I first re-read my essay after these many years. In it, I mentioned a 600,000 game database search that takes about the same amount of time as getting a cup of coffee. Today's databases usually top five million games, and if you start to get up once you start a search, the results are usually on the screen before your butt clears the chair. And there's something else which really makes me smile: the doctors did (eventually) cure my "kid" nephew, who is now grown up and a chef for an upscale restaurant in the Pacific Northwest.

We're going to come back (more than once) to some of the points I referenced in the preceding essay; in fact, learning to use that whole "integrated environment" thing is the entire point of this book. But for now, let's return to our overview of computer chess history...

# THE AFTERMATH

The naysayers were out in full force after the 1998 match between Garry Kasparov and Deep Blue. After Kasparov's loss to Fritz in a 1994 blitz tournament, their cant was, "Oh, but it was blitz. What about speed games?" A few months later after he lost to Chess Genius at "game in 25", the complaint went, "Oh, but that was a speed game. What about longer time controls?" When Kasparov lost Game One of the 1997 Deep Blue match, the naysayers crowed, "Oh, sure, a game. What about a whole match?"

Within hours of Kasparov's loss of the 1998 match, it started again, with online comments like, "Well, of course that was a six game match. What about a traditional twenty-four games?" And so it goes – as soon as a computer clears the bar, somebody else just raises the bar. Today no one but a complete Luddite would doubt the power of chess computers, to the point that many people don't find chess matches pitting human champions against computers very interesting anymore. But I'm getting ahead of the story...

Debate still rages today over what really happened in 1998. Despite the accusations of cheating on IBM's part, voiced by a loud coterie of players (Kasparov among them), no solid evidence of such cheating has ever been found. IBM made the transcripts of Deep Blue's analysis available for public inspection (I took a quick look at them myself, back in the day), which doesn't prevent a few players even today from accusing IBM of faking the transcripts. Of course, that's the beauty of conspiracy theories: you can't prove a conspiracy didn't occur, because of the impossibility of "proving a negative".

What we do know is that after their machine's victory, IBM wasn't interested in a rematch. The corporation sold the Deep Blue hardware to an airline, which repurposed the machine to the complex task of juggling thousands of airline reservations. The Deep Blue research into parallel processing, the idea of dividing complex computations among several processors, paid off in a big way from which we're all reaping the benefits today: even a modestly priced home computer utilizes parallel processing these days.

Kasparov was still game for more "human vs. computer" challenges. A few of these were televised, such as his match against a multi-processor version of the commercial program Fritz which was carried by ESPN in 2003. But each time the spectacle was repeated, fewer viewers tuned in. When coupled with the "balkanization" of the world chess championships, with multiple groups claiming to have the "official" chess champion (a la professional boxing), the "chess fever" which had gripped the chess



public in the late 1990's eventually cooled. Stores went from carrying a dozen or more chess programs to just one or two; these days it's not unusual to not find a single chess program on the software racks in a "big box" department store. Even the "specialty" market, which catered mainly to "serious" chess players started drying up, with many of the once major players (such as Chess Genius) falling by the wayside.

## THE TWENTY-FIRST CENTURY

The biggest change to chess has come from the Internet. Although Internet chess had existed in various forms for years (I played my first online games online using Power Chess or, occasionally, an IRC client as far back as 1997), it really exploded as a phenomenon in the late 1990's with the advent of Javascript and the increased popularity of the World Wide Web; by the turn of the century literally dozens of Internet sites offered online chess play (either "real time" or at correspondence time controls) -- and the number has only increased since.

Today the Internet offers limitless opportunities for chess play with thousands of players worldwide playing tens of thousands of chess games each day. Some chess web sites offer free basic chess instruction, while access to more advanced instruction might require a subscription fee. Players can discuss chess on public message boards (though the "signal to noise ratio" [the ratio of worthwhile discussion to useless polemics such as trolling and flamewars] on such sites is open to debate).

Meanwhile some chess software vendors seem to have learned that beginners and average players are looking for chess instruction which goes beyond the traditional "paper book" form. An idea which was started by a company I worked for in the early 1990's, that of computer-based chess instruction, has been taken up by many other programmers and companies in the years since. Now a player can select from a huge variety of instructional offerings.

As we've seen earlier in this chapter, improving chess players need opportunities to play, opportunities to train and learn, and opportunities to get feedback on their play. Chess King is the first (and best!) program I've seen in many, many years to offer all three opportunities in a single package. As you continue through the first part of this book, you'll learn why and how proper use of a computer chess software program can help you improve your chess play. Later, in Part Two, you'll learn about the specific Chess King functions which will help you achieve your chess goals.

# CHAPTER 2

## Under the chess engine's hood: how a computer plays chess

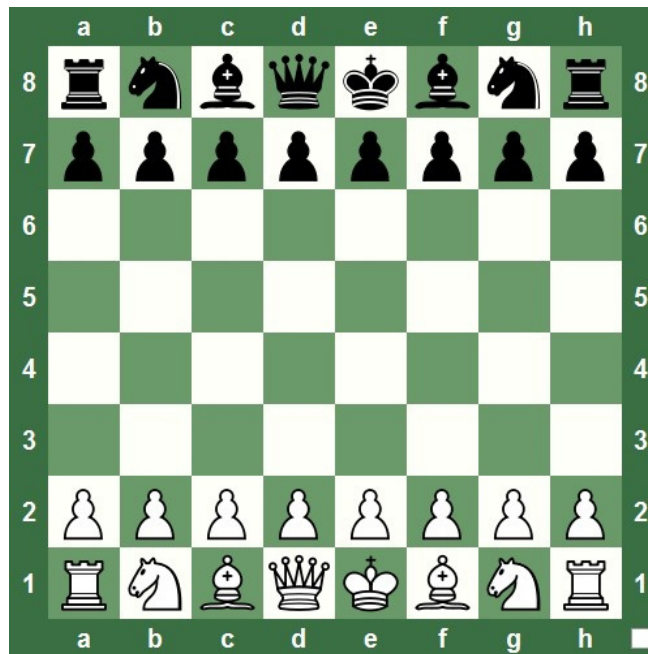
- Under the chess engine's hood:  
how a computer plays chess
- A tree of possibilities
- Crunching the numbers
- Moving backward down the branches
- What you'll need to remember

# UNDER THE CHESS ENGINE'S HOOD: HOW A COMPUTER PLAYS CHESS

It's not my intent to provide a complete course in how a computer chess engine is programmed; most readers would find the topic pointless and maybe a little boring. But, to be able to make full use of a digital training and analysis partner, there are a few things which every player who uses a chess program needs to know about how a computer plays chess and analyzes positions. I promise to make this chapter as painless as possible; hopefully I can even make it a little bit entertaining.

# A TREE OF POSSIBILITIES

Every chess position offers endless possibilities. Don't believe me? Let's set up a chess board, take a look, and consider a few simple numbers.



- Yep, it's the starting position for a game of chess. White has twenty possible moves at the game's start (two for each of eight pawns and two for each of two Knights;  $16 + 4 = 20$ ). After any of White's twenty possible starting moves, Black has twenty possible moves of his own. Thus there are 400 possible chess positions after just one move by each player ( $20 \times 20 = 400$ ).

Four hundred possible positions – after just one move for each side. Wow!

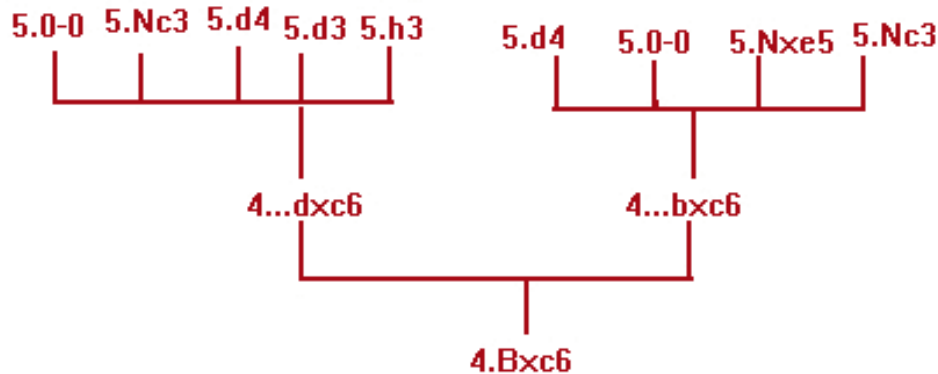
- Now let's expand on that idea. Just as an example, we'll imagine a position in which White has exactly thirty possible moves (we call each of these a candidate move), for each of which Black has exactly thirty candidate moves in reply, after each of which White has exactly thirty possible replies to each of Black's moves, and so on. Sure, it's highly unlikely that a position which produces such nice orderly numbers exists, but that's why I said we need to imagine it. Besides, the initial position isn't the point – it's the number of positions which come later.
- So we'll imagine that such a position exists. After White makes one move (which computer chess guys call a “half move” or a “ply” -- remember this terminology, it's important), there are thirty possible

new chess positions. After Black's first reply, that number increases to exactly 900 possible positions. Assuming exactly thirty possible moves in each new board position, watch what happens to the numbers each time the players go one half-move (one ply) ahead:

<b>White's first move</b>	(1 ply):	30 positions
<b>Black's first move</b>	(2 ply):	900 positions
<b>White's second move</b>	(3 ply):	27,000 positions
<b>Black's second move</b>	(4 ply):	810,000 positions
<b>White's third move</b>	(5 ply):	24,300,000 positions
<b>Black's third move</b>	(6 ply):	729,000,000 positions
<b>White's fourth move</b>	(7 ply):	21,870,000,000 positions
<b>Black's fourth move</b>	(8 ply):	656,100,000,000 positions

I wanted to keep going, but black smoke started rolling out of my calculator. If you don't believe the numbers, try it yourself (but quit when you see smoke). In our imaginary position, after just four moves for both players (eight plies, in computer chess terms), there are more than six hundred and fifty billion possible board positions, billions of combinations of pieces on the board. So the next time you meet a strong chess player and he claims that he sees "everything" four moves ahead, you have my permission to say, "Liar, liar, pants on fire!" (And if you want his pants to really be on fire, do all of that multiplication on your calculator again and then stick it in his back pocket when he's not looking.)

We call that big ol' batch of potential moves the “chess tree”. And I'll bet you're dying to know why aren't you? I'm glad you asked. Have a look at this (very small) example which occurs after the moves 1.e4 e5 2.Nf3 Nc6 3.Bb5 a6:



These are the initial moves of the Ruy Lopez Exchange Variation (and don't worry if you can't read algebraic chess notation – I'll teach you how in Part Two of this book). White plays 4.Bxc6 (that move is what makes it the Exchange Variation). Black has a lot of moves he can play next, but only two which make any real chess sense; White has a few good replies to both of Black's moves. If we start reading the diagram at the bottom (with 4.Bxc6), then add Black's replies above it, then add White's replies above Black's, and connect them all with lines, we get something that looks very like a tree. That's why it's called a chess tree (and you'll often hear chess variations called “branches”, and hear a position at the end of a variation called a “leaf node”. It's a wonder that chess analysts aren't called “gardeners”, for crying out loud).

## CRUNCHING THE NUMBERS

When we talk about evaluating a chess position, we mean looking at the board (with knowledge of which side is to move – that does make a big difference!) and figuring out which player currently has the advantage. We all do this all the time when we play chess. We look at the board, figure out who's ahead, and then we start looking at candidate moves, figuring what the opponent might do in reply to each of them, then what we'd do next, and then we decide who's ahead (“If I do this, he'll do that, then I'll do this – who's ahead then?”). It's a little more complicated than

this in actual practice, but when you get right down to it, that's what we all do as we play – we assess the current position, look at candidate moves for both players (repeating this for as many moves ahead as we can envision), and then reassess the resulting positions.

(And while we're here, do you want to know the big difference between how an average player evaluates positions compared to a grandmaster? A grandmaster considers better candidate moves than the average player does. It's pretty much as simple as that. [Grandmaster Yasser Seirawan talks about this in the PBS Nova episode about computer chess.])

Chess computer engines basically do the same thing as humans, just a few million times faster, and by reducing the problem to a mathematical formula. A chess engine uses a complicated formula, called an algorithm, to evaluate a position. Going back to our chess tree example, a computer would look at the position after 4.Bxc6 and then refer to its algorithm to come up with a numerical evaluation of the position. Many, many chess factors are assigned numbers in the engine's algorithm. These factors include really simple things, like material – who has more pieces on the board. Other factors include space and mobility (whose pieces can move to, and thus control, more squares), pawn structures (factors such as pawn islands or backward and isolated pawns), King safety (is the opponent's King in an exposed spot?), and scores of other similar chess ideas. Each factor is assigned a number by the programmer (and different chess programmers assign different values, which is why all chess engines don't play chess the exact same way) – the numbers are plugged into the algorithm, the calculations are made, and BOOM! The position is assigned a numerical value, an evaluation of the position.

In our example, the chess engine would look at the position after 4.Bxc6 and assign it an evaluation. Then it would move ahead one ply and evaluate every Black reply to 4.Bxc6. Then it would move ahead another ply and evaluate all of White's responses to every possible Black move, assigning each new board position a numerical evaluation. And on and on, evaluating millions of positions a second (on present day hardware).

But due to the size of the game tree we considered earlier, even Houdini 2, evaluating 3 million positions a second on a home PC, would tend to bog down after just a few moves. Going way back to our chess tree example, in which four moves for each player results in over 650 billion chess positions, it would take Houdini 2 more than two hundred thousand seconds (over sixty hours) to look just four moves ahead if it had to consider every single position. That's why chess engines prune the chess tree (and, yes, that's the actual technical term. Gardening again). Moves

which lead to positions which have a very bad numerical evaluation get cut from further consideration early on in the search, and the engine just stops considering them (in the same way that a human player blows off a first move which immediately loses his or her Queen or Rook, and then doesn't think about that move anymore).

## MOVING BACKWARD DOWN THE BRANCHES

After a chess engine has assigned evaluations to a lot of positions, it takes the evaluations of the leaf nodes (the final positions of variations) and moves them backwards through the tree, assigning them to earlier positions in an attempt to find out which candidate moves lead to the biggest rewards (higher evaluations) and, conversely, which lead to the biggest losses (lower evaluations). The engine, armed with this information, will steer toward the best possible outcome for it (by playing the candidate move which leads to that outcome) while avoiding the worst possible outcome. In practice, it's a bit more complicated than this, but that's basically how it works. Our old friend Claude Shannon came up with this in his early computer science writings (see Chapter One), and it's still used in varying forms today – it's known as a min-max system of evaluation. When a chess program evaluates candidate moves in a position, it assumes best possible play for both sides from that point – it always assumes that the opponent will play the best possible move as part of min-maxing to arrive at a decision.



# WHAT YOU'LL NEED TO REMEMBER

To use a chess engine properly, you'll need to remember just a couple of important things we've learned in this chapter.

When an engine shows you its search depth, that is, how many moves ahead it's looked, it expresses this value in half-moves or plies.

When a chess engine shows you a numerical evaluation at the end of a suggested variation, those moves reflect best play for both sides in the chess engine's judgment (computers never say “Maybe he won't see it...”), and the numerical evaluation the engine assigns applies to for the board position at the end of the variation it shows.

Finally, the farther ahead a computer searches (we often say “the deeper the engine looks into the position”), the better and more accurate the evaluation will tend to be. That's why the old 1970's and 1980's chess computers often played such awful chess; their processors weren't strong enough to look deeply ahead, and their primitive algorithms sometimes miscalculated positions. Present day chess engines are not only faster, but smarter, too – the art of programming a chess computer has advanced a great deal over the years.

Now let's get to work making you a better chess player!

# CHAPTER 3

## Some good old fashioned chess advice

- **Tip #1: study chess tactics**
- **Tip #2: study the endgame**
- **Tip #3: learn some opening basics, but don't spend hours memorizing variations**
- **Tip #4: study positional chess (e.g. chess strategy)**
- **Tip #5: Play as much chess as you can**
- **Tip #6: Write down or record the moves to every game you play**
- **Tip #7: Review your games later**
- **Tip #8: Get help and advice from stronger players**
- **Tip #9: When you buy books, videos, software, and other training materials, use them!**
- **Tip #10: Play over the chess games of other players**
- **Tip #11: Don't kick yourself over losing a game**

# SOME GOOD OLD FASHIONED CHESS ADVICE

For many years, the great American grandmaster Larry Evans wrote a very popular column in Chess Life magazine. I remember a time when I was reading his column (in which he answered some letters from readers) and saw a letter from a player of my acquaintance, a fellow I'd once met and played against at a chess tournament years before. I don't have the column handy to quote the letter, but the gist of his problem was this: the player had hit a "plateau" in his chess advancement and he felt like he'd kind of stalled. Even though he was playing and studying chess, he seemed to have stopped progressing as a player and he felt like his chess development was stuck in neutral.

Grandmaster Evans gave the guy some great advice, which I've expanded upon and modified in a number of articles I've written in the years since. Here I'll offer you my latest version consisting of eleven tips, five from GM Evans and six from me, all of which I've followed and which have helped me in my own chess career.

## TIP #1:

### Study chess tactics

- For the average player, two areas of chess study will produce improved results faster than any other. One of these areas is chess tactics (short-term move combinations which result in material gains or a win, such as pins, forks, skewers, checkmates, etc.). Much of a player's tactical prowess involves pattern recognition – in many tactical themes, the same kind of chess position comes up again and again. Learn to spot these tactical opportunities, not only when it's your turn to move but also as far as your opponent's pieces are concerned (if you spot an opportunity for your opponent before he does, you may be able to head him off at the pass and correct the problem before he has a chance to drop the bomb on you). A great player from the “classical era” named Richard Teichmann once famously declared that “chess is 99% tactics”. While I'd argue that he might have overstated the case just a bit, tactical prowess is undeniably very important in chess. You don't have to become a Mikhail Tal, but you do need to be able to pick up on the fact that a simple intermediate move on your part will set up a material-winning tactic.

## TIP #2:

### Study the endgame

- Many, many (too many) players hate studying chess endgames, and that's pretty unfortunate. The endgame is pretty interesting, full of surprises and exceptions which every player needs to know about. And if I had a buck for every time I've seen a player blow a hard-won material advantage in the endgame and wind up losing a game he/she should have won, I'd own a tropical paradise and be there now with a tall frosty one (and a cold drink, too), and you and I would not be having this discussion.
- **STUDY YOUR ENDGAMES!** There's no excuse for losing a game you have easily won because you spent hours memorizing obscure opening variations instead of learning basic endgame principles! (And if there's one thing I've learned from my own recent Chess King training sessions, it's that I, too, need to spend more time with the chess endings.)

## TIP #3:

### Learn some opening basics, but don't spend hours memorizing variations

- GM Evans asserted that no player rated lower than 2000 Elo (USCF) should worry about studying openings. I agree with him in general principle, but I disagree on the specifics. I think that every chess player (including beginners) should know the basic ideas behind the chess openings they regularly play, as well as one to three main variations. But no untitled (below Expert level) chess player needs to spend countless hours memorizing dozens upon dozens of opening variations; most of your opponents are going to play something weird around move 8 anyway, and all of that careful “opening preparation” just becomes wasted time. And just because a chess opening encyclopedia says you have a “winning position” at the end of your “pet” variation doesn't mean that you have an “insta-win” -- the game doesn't play itself, and you still have to prove you have a win by actually winning the danged game. The only short “insta-wins” I've ever enjoyed were in correspondence games, and with three days to ponder a move plus chess library access allowed by the rules, those wins were gifts from poor opponents, not the result of my “brilliant” opening play from hours of preparation and memorization. Take that time you spend on memorizing openings and use it to study tactics and endgames instead; you'll thank me (and GM Evans) later.

## TIP #4:

### Study positional chess (e.g. chess strategy)

- Some wiseguy once said that tactics are what you do when there's something to do, while strategy is what you do when there's nothing to do. That's wrong, but not by much. A tactic is typically a series of moves which end in a demonstrable material gain. Strategy, on the other hand, involves long range planning, getting your pieces to good squares, making sure your pawn structure is sound, placing your chess men on squares where they act harmoniously to give you a strong position. It's also the process by which your moves cause your opponent to weaken his position a bit at a time, and to the mental process by which you can recognize those weaknesses. It sounds complicated, but studying chess strategy can really improve your game. Until I learned some fundamentals of strategy and long-term planning, I was really just hacking around with chess, playing at the game instead of really playing it. After I learned a number of strategic themes (through the books of Ludek Pachman, as well as through some other good sources), my games became easier; it was more simple for me to not only play with a plan, but to play with a good plan.

## TIP #5

### Play as much chess as you can

- Quite simply, the more you play, the more you understand. You can read about rook endgames all day long, but it won't mean a thing until you actually play some rook endgames. Likewise, nothing teaches us what we don't know the way playing chess games does; until you completely blow a Rook endgame, you might not realize that you need to study Rook endgames. Conversely, few things are as satisfying as learning a new chess concept and then successfully applying it in a game. To be good at chess, you have to play chess.

## TIP #6

### Write down or record the moves to every game you play

- Obviously if you're playing a blitz game face to face with someone (as opposed to over the Internet), you're not going to be able to record the moves. But for games at a reasonably long time controls (I've written down moves for games with a ten minute limit), as well as for Internet games, you should record your moves. If you're playing online chess, there's no reason not to record your moves (even in blitz or bullet games); most sites have a feature that keeps track of your moves and lets you download the game score (or will send it to you via e-mail) at the click of a button. If you own a chess program with database features, you should create a database of your own games (both online games and games played face to face); if you don't have such a program, keep your games in a notebook or chess score book. There are plenty of good reasons for keeping your games. If nothing else, they're a record of your chess exploits; over time, you'll be able to go back over old games you've played and see how you've improved. When you play a really good game, you'll be able to replay it as often as you like if you recorded the moves. If you play an awful game, you can go over it to try to learn where you made your mistakes. Keeping your games in an electronic database gives you the chance to analyze them with a chess engine later; it also makes it easy to add your own notes and variations to the game. That brings us directly to the next tip:

## TIP #7

### Review your games later

- Go back and replay as many of your games as you can, especially your losses. And you should do this as soon as possible after the game is played (not immediately, of course, but within a day or two). When I was an active tournament player, I would copy my games into a physical score book and input them to a computer database within a couple of days after the event. I'd also add notes to my games, writing down what I'd been thinking or what my plan was at various points during the game. Today I can go back and review these games and, now that I know more about chess than I did at the time, I can see that some of my ideas were good, some were bad (and this connects directly with a point made under Tip #6: the ability to see how your chess has improved over time).

## TIP #8

### Get help and advice from stronger players

- This is another reason why you should record your games: you can review them with a stronger player to get an opinion and some advice. Most chess clubs I've belonged to had a strong player or three who loved to help out club members who wanted their advice. When you lose a tournament game to a stronger player, the post mortem (the after the game discussion) is often very instructive and enlightening. And you may not know this now (trust me, you will by the time you get to the end of this book!), but the biggest advantage to owning a chess playing program is the ability to have a strong chess engine analyze your games, show where you made mistakes, and offer suggestions for better moves.

## TIP #9

# When you buy books, videos, software, and other training materials, use them!

- Nobody ever improved at chess just by maxing out his credit card purchasing chess books, programs, videos, etc.; otherwise many of could buy our way to the grandmaster title. Don't laugh – I've known many players (and had many customers) over the years who act like they must own every new chess video or software training disk that comes down the pike. They wind up with shelves of it, and guess where the stuff mostly stays? On the shelf. If you spend good money on chess instructional materials, use them. Don't leave them lying around unused, or you've just wasted your money. As I've said in previous articles when I've listed these tips, sleeping with a chess book or disk under your pillow will not cause the material to seep into your head through some kind of strange osmosis. If you buy a book, read it. If you purchase a video, watch it. If you get a software training disk, use it. Learn the lessons they contain and, most of all, learn to apply those lessons in your own games.

## Tip #10

# Play over the chess games of other players

- You can learn a lot about chess by replaying the games of stronger players, especially games which have annotations (comments and variations which explain the game), as long as you understand what's going on. I'm a huge fan of games played between the 1850's and World War II, and it's for a very practical reason. One of my favorite chess players and writers was a brainy mug named Richard Reti, who wrote one of the greatest chess books of all time, *Masters of the Chessboard*, in which he offers plenty of commented games by great players. When Reti was trying to come up with a way to organize his book, he came to a sudden epiphany, a real brainstorm: he realized that most players learn about chess concepts in roughly the same order as the way these concepts developed historically. In other words, beginners can easily understand old Paul Morphy and Adolf Anderssen games from the 1800's, while a game played last night between two top players will baffle them. That's why I love older games – I get them, I understand what's happening (and, when I don't understand something, I can usually figure it out). On the other hand, a lot of post-war chess just shoots right over my head. So don't avoid older games because “they don't have the latest opening theory”; that's just crazy (and see Tip #3 anyway). You should absolutely study pre-war chess games, because you'll find them a whole lot easier to understand.



As far as current games go, if your home state, province, region, etc. publishes a chess newsletter, you should subscribe to it, as these little magazines are often a treasure trove of commented games, often played between average club players, games which are easily understood and enormously instructive.

- And, finally, the most important tip of all:

## TIP #11

### Don't kick yourself over losing a game

- Winning is more fun than losing, I'll admit that. But I view a chess loss as an opportunity for improvement. When I figure out why I lost a game, I learn what I need to work on to become a better player. I don't kick myself, I don't get depressed – instead, I get to work. Besides, everybody loses; we've already seen how Garry Kasparov, considered by many to be the strongest chess player of all time, lost to a machine. Losing is disappointing, but it's up to you to turn that disadvantage into an advantage – treat your chess losses as opportunities, chances to become a better player, and you're likely to find that you've become something of a better person as well.
- In my opinion, that's the real value of chess (as well as just about any other competitive endeavor, come to think of it). Although this has become something of a passé notion in the twenty-first century, I'm a firm believer in the idea that competition builds character. Since chess is a one-on-one contest, it provides a unique opportunity for each of us to learn about ourselves, how we react to adversity, how we behave when we win. Chess gives us a means to test ourselves, to better ourselves. But we can't do that when we kick ourselves, get depressed, or throw a tantrum over a loss. Don't despair over a loss – learn from it, and you'll likely learn something about yourself in the process, too.

# CHAPTER 4

## The path to improvement is a circle

- Practice
- Analysis
- Study
- Practice
- So what does a chess program have to do with it?

# THE PATH TO IMPROVEMENT IS A CIRCLE

Before we start to consider the general ways to use chess software as a tool to become a better chess player, we need to look at a road map first. I've spent the best part of two decades teaching other chess players how to use computer chess programs and, along the way, I've learned something too: I've learned how people learn about chess.

Don't rush for a scorecard to try to figure that one out. I can explain it to you pretty simply. The path to chess improvement has three steps: study, practice, and analysis. You study chess to learn new concepts, you then play games to put those ideas and concepts into practice, then you analyze your performance – to learn what you need to study.

Every step of the process leads to another step. So the path to improvement is actually a circle:



...with the steps following each other in clockwise order around the ring shown above.

You might be saying, “But that never ends!”; if so, you're correct. Chess is a lifetime pursuit, and there's always something new to be learned no matter how good a player you become.

That's exactly why chess is so cool. You never stop learning.

Let's look at each step of the learning process and figure out how it works; trust me, understanding the process will help you use it to your advantage later.

# PRACTICE

The term “practice” refers to any time you're playing chess. It might be a casual game with a friend on your lunch break, an online blitz game, the final round of a weekend tournament with a cash prize on the line, or solving chess problems in a chess software program. Any time you're looking at a chess position, analyzing it, weighing possibilities, using your noodle to find a good move, you're practicing chess – that is, you're putting your chess knowledge to a practical test.

Nobody gets better at chess without playing chess (as we learned in Chapter Three). That applies to pretty much everything in life: you can read books and magazines about skydiving all day long, learning everything you can about how to do it, but none of that study means a thing until you step out of the hatch at 14,000 feet. Acquiring knowledge for its own sake is nice, but it's even better when you put that acquired knowledge to practical use.

And, in this case, it means playing chess – as much of it as you can (again, see Chapter Three). When you play a game you're not just competing against an opponent, you're also testing yourself (some would argue that you're primarily testing yourself), pitting your accumulated knowledge and skills against those of another player (whether it's a human player or a machine makes no difference).

Practice leads directly to the next stage of the learning cycle...

# ANALYSIS

When we talk about analysis, we're talking about the process of reviewing the games you played during the “Practice” stage. This was also mentioned in Chapter Three: you should always review your games, as soon as you can after you've played them, and especially review your losses.

Analyzing your games means looking at them carefully to figure out what you did right, what you did wrong, and (most important of all) how you could improve upon what you did. When you won that last game, was it because your opponent blundered in time pressure? Did he make a mistake or have some positional weakness (say, a backward pawn) that you recognized and capitalized on? Or, best of all, did you force him to create that weakness with your own good move(s)?

Conversely, when you lost a game, was it because you lost on time? Did you have a positional weakness which your opponent exploited? Did your

opponent drop a bomb on you by hitting you with a tactical shot that you never saw coming? When did you first get a bad position – was it the middlegame or maybe the endgame?

Analyze your games by reviewing them yourself, then have another player (human or electronic) look at them. Look at your games closely; try to discover why you won or lost. Find the answers to the kinds of questions posed in the previous two paragraphs. When you find them, you're ready for the next step...

## STUDY

We analyze our games to try to determine why they turned out the way they did. We search for our strengths but, more importantly, we strive to isolate out weaknesses. Only by finding out what we're bad at do we discover what we need to study in order to improve.

The general study tips from Chapter Three are “road markers” you can use to chart your general course, but at some point you'll need to zero in on some specifics. It's one thing to say “Study positional chess”, but if you start to see a tendency in which you leave backward pawns around that your opponents pick off in an endgame, that knowledge provides you with two specific study areas right there: you should study pawn structures, and especially pawn structures as they apply to the endgame.

Instead, if you're cooking along with what you think is a decent position and suddenly your opponent hits you with a three-move combination that wins your Rook – and you tend to get blasted off the board in a similar way game after game – that's a big ol' red flag waving in the breeze with the words “Study your tactics!” emblazoned across it.

The mistakes we uncover in the Analysis part of the cycle will tell us what we should concentrate on in the Study phase. Lots of players love to study and memorize opening variations, but if you're getting popped by a tactical shot in middlegame after middlegame, it's time to put that opening encyclopedia back on the shelf and break out a tactics training CD instead. Not only will you learn to recognize tactical opportunities when you have them, but you'll also be able to spot recurring problems in your own positions which are providing these opportunities to your opponents. If you can spot 'em, you can fix 'em the next time you play, which brings us back to...

# PRACTICE

And so it goes, in a never ending cycle of playing and learning.

It's necessary to note here that these stages of the cycle often overlap. You might play in a four round weekend tournament on Saturday, analyze the games on Sunday and discover (in combination with games you played at the chess club over the last couple of weeks) that you need to brush up on your minor piece endgames. So you start working through some endgame books on your lunch break and, at home in the evening, setting up some of these positions in your favorite chess program and playing them against the computer. By the next weekly Wednesday chess club meeting you're still working through the examples in your endgame book, so "Study" and "Practice" overlap. Later, you don't get the chance to review your chess club games until Friday, but you're still not finished looking at minor piece endings yet, so "Study" and "Analysis" are now overlapping.

Regardless of the potential overlap, the chess learning cycle tends to follow the exact clockwise pattern in our previous illustration. You practice what you know by playing games, you learn what you don't know by analyzing your games, then you use your study time to fill those gaps in your knowledge.

## SO WHAT DOES A CHESS PROGRAM HAVE TO DO WITH IT?

A good computer chess program, if you use it right, will help you with all three areas of the learning cycle.

The "Practice" part is pretty self-evident: you can play chess anytime you want without trying to find a human opponent. (There are other aspects to this "Practice" angle, too, which we'll look at in the next chapter.) The "Analysis" angle is potentially the single most important reason to own a good chess program: the chess engine can analyze your games and help you spot problems in your chess play (and, if you've done the "self-analysis" part right, may just confirm what you've already spotted when you went over your own games). Chess programs, depending on their individual features, can help with various aspects of the "Study" part of the cycle, often containing searchable databases in which you can find hundreds of replayable sample games, along with the ability to set up a position and have a strong chess engine analyze it, chess tree functions to help spot problems in the early part of your game, and so on.

In short, a chess program can have everything to do with your own learning cycle. The most important thing a chess program can provide for you is time. Few of us have limitless time to spend on chess; more important things like work, family, social activities, take precedence. The limited time we can spend on playing and improving at chess is very precious, and a good chess program can help you make the most of your limited study and playing time.

Learning how to use your chess program as a study and improvement partner is what the rest of this book is about.

# CHAPTER 5

## A game anytime you like: playing with a chess engine

- How to beat your chess computer
- When it comes to computer chess, “handicap” is not a nasty word
- Trick yourself into playing more chess
- Set up a tournament and play!
- Oh, it's on now! Playing one on one matches
- To rate or not to rate? That is the question...
- Beat the clock
- Save your games – always!
- Summing up



# A GAME ANYTIME YOU LIKE: PLAYING WITH A CHESS ENGINE

Some books about computer chess go to great lengths in discussing Internet chess sites, places where you can play chess online; this book won't be one of them. This omission is deliberate, as online play at its core isn't terribly different from face to face chess – subtract the players' faces, substitute a 2D representation of a chess set, use a mouse instead of your hand, and it's pretty much the same.

Likewise I'm not going to go into minute detail about how to play a game against your chess software program. The first thing everybody does within five minutes of finishing the installation of a chess program is play a game with the danged thing. I did it, you did it, there's no point in mentioning that you can play chess with a chess program. What I want to do is show you how to better use your chess program's playing functions.

Right off the bat I'll tell you that it is completely pointless to play against a chess engine at its full strength (unless you're a master or grandmaster). Unless you use one or more of the well-publicized “anti-computer” tricks (which is, again, pointless when it comes to your development as a player), when you play against a chess engine at its full bore strength, you lose. Many programs offer to let you limit a chess engine's strength by setting casual time levels like “5 seconds a move”. If you're an average club level player, you'll still lose – at five seconds a move, most chess engines running on current (the year 2012 as I write this) hardware will look ten to sixteen plies (five to eight full moves) ahead within one second of the time they start their analysis.

So why would you want to buy a mega-strong chess engine if the infernal thing is just going to tear your head off in a straight-up game? For its analysis features, of course, which we'll learn about later.

This book is not about “how to beat your chess computer”. There are plenty of those books around, and most of them are a waste your money being as the point of owning a chess computer isn't to beat it, but to use it as a tool. But, for those who would be disappointed if I don't at least mention the topic...

# HOW TO BEAT YOUR CHESS COMPUTER

There are a lot of ways to beat a chess computer, all based on playing to your own strengths as a human while capitalizing on the computer's well publicized weaknesses.

First, there's the "general" method. Chess engines love wide open positions with lots of mobility for the pieces, and the danged programs can always be counted upon to crush you tactically in just such positions. So the first thing you need to do is keep the position closed. Keep the central pawn position locked up and avoid exchanging off those center pawns; openings that start with 1.d4 are especially good for this. It's even easier if you've studied strategy and positional chess, since computers tend to stink at long-range planning. Block the center to keep the computer cramped, then use your positional knowledge to maneuver, maneuver, maneuver, getting your pieces (especially your Knights) to good squares.

After you've ensured that the center will stay blocked (especially if the chess engine has moved a lot of its pieces to the Queenside), wait for the computer to castle Kingside (which it will do most of the time, unless its opening book directs otherwise), and then launch a Kingside pawn storm straight at the opposing King. Make sure your pawns are backed up by your heavy pieces. This is especially effective if you've studied pawn structures and other general pawn play.

After the breakthrough, when files are opened, swarm in with your heavy pieces and checkmate the silicon monster.

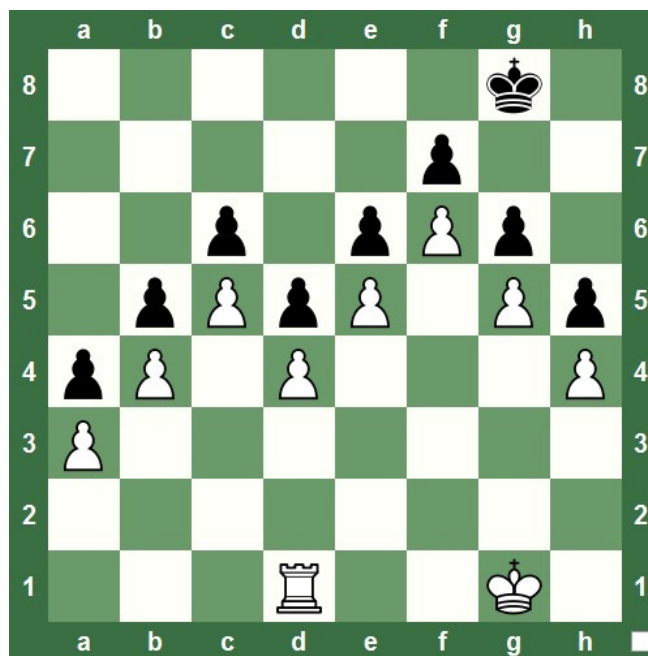
It's that simple. I know average club players who can do this at will against many chess engines, especially older programs. In recent years, programmers have improved their engines so that this technique isn't the "insta-win" that it used to be, but it can still be pretty effective.

There are more complex ways to beat your computer. If the chess program you bought gives you the ability to look at the engine's opening book (also known as the opening tree), you might be able to discover a "hole", a variation which is bad for the computer but which (due to an oversight on the programmers' part) the engine will always play. I can still remember when a 1300 Elo player found just such a bad variation in the opening book of an early version of the Fritz program. After 1.d4, Fritz (as Black) would invariably fall into this same hole, which allowed the human player as White to block the center, launch the Kingside pawn storm, and win (exactly as I described earlier). I checked the opening book and, sure enough, there was a hole. The next version of Fritz fixed the hole, and the version after that added a feature which made the engine stop playing

openings at which it kept losing. So this method isn't as easy as it used to be, but you can still try it.

The first version of Fritz would always play the best move it found, no matter what. That meant that if the best move caused a draw by threefold repetition of the position, the engine played it anyway. I got a couple of easy draws that way when playing it. Later versions fixed that problem by allowing the engine to play the second-best move as long as that move was evaluated as being pretty close in strength to the best move. Many chess engines have this feature programmed into their algorithms, but you still occasionally come across a chess program which will draw this way (even if it's winning materially).

That brings us to another method, which is a bit more tricky to execute. Have a look at this position:



White's a Rook up in this position. Big deal. The game is a draw: the pawns are locked, the Kings can't get through, and neither side can make progress, so White's extra Rook doesn't mean a blessed thing. But set up this position in your chess playing program and let your chess engine analyze it; I'll bet you dollars to donuts that it'll evaluate this as a winning position for White.

Computers do occasionally miscalculate a position, this position being a famous example. There are ways for a good player to exploit this tendency and win a game (or at least snatch an occasional draw), but it's a bit tricky for the average chess player to execute.

So there are ways to beat your chess computer at its full strength (these are just a few). If all you want to do is beat your chess engine, have at it. But I'm going to move on now and talk about ways to use your program's engine as an effective sparring partner to help you improve your own chess

## WHEN IT COMES TO COMPUTER CHESS, “HANDICAP” IS NOT A NASTY WORD

Since your chess engine will likely crush you like a bug on a windshield when you set it to full strength or even limit its thinking time to a second or two, how can you use it as a sparring partner?

Any chess playing program worth its salt these days will give you at least one mode (and usually more) in which you can get a competitive game without you being smashed up by the machine. Different software programs use different methods to accomplish this, and we'll look at a few of the most common. The important thing for you to remember is that there's no shame at all in playing against a chess engine at a reduced strength level; in fact, you're foolishly wasting your time if you don't use these levels.

Back in the day, when a 386 25MHz processor was a miracle of computer science, you could set a casual time setting of, say, five seconds a move and stand a reasonable chance of doing well against a chess program; the engine would look only a move or two ahead during that time. They were still tough for an average Joe or Jane to beat since they pretty much saw everything out to that depth (you couldn't surprise 'em), but you at least had a shot at winning. But those days are long gone; as we learned earlier, most engines today do a relatively deep search in one second or less.

When you're trying to get a competitive game with a chess engine without being killed, the first thing to do is check your program's documentation: the help files or a physical manual. While paper manuals are becoming a rarity, many chess programs offer a manual as a .pdf or .doc file somewhere on the disk; check the disk for a folder called “DOCS” or “MANUAL”. When all else fails, the F1 key is still the universal computer “S.O.S.” call; hitting it will usually bring up a help file. Check the help file or manual for a section on “handicap” modes or reduced strength levels offered by the software.

These easier play modes usually take one of a number of forms.

**Adaptive play** – the chess engine will, over time, attempt to change its strength to more closely match yours. The result of each game you play against the engine will help it to more closely align itself with your level of play until you are winning 20% to 25% of your games against it. While that number might not sound especially high, many experienced chess coaches will agree with that percentage as the “golden ratio”, at which a student (i.e. you) loses often enough to promote the desire to learn and improve, but wins often enough to not become demoralized. The old Power Chess program was the first to use such a play mode, but a few other chess playing programs have introduced this feature down through the years.

**The “tactics seeker”** - the playing programs produced by the German company ChessBase (Fritz, etc.) feature a mode in which the engine will look for tactics that you can play against it during its search and, when it finds such a possibility, steers play toward that position instead of away from it (as it would in a normal play mode). If you wish, the program will also flash a light on the screen to alert you of a tactical maneuver when you have a move that will create one in the present board position. The feature puts to rest the common concern among chess players that “you can study tactics all day long but you'll never get to use them against a computer”.

**Pre-programmed “personalities”** - these can be really cool to use if your chess program has them (I say “can be” because I've seen the idea abysmally executed in a few programs), especially if the personalities have approximate Elo ratings (you'll learn about the Elo rating system in Part Two). many programs down through the years have offered this feature in varying forms. Kasparov's Gambit named its personalities after historical figures (like Genghis Khan) but didn't offer anything other than a name and a rating. Power Chess contained various cartoon-like characters with a little bit of biographical information. Chessmaster 6000 (and every version since) has provided the best execution of the idea, with a name, a rating, a photo of a real person, a little bit of personal information, and a capsule description of their chess tendencies. Some programs, though, offer nothing but a one or two word description or, worse, fake the feature; one program from the 1990's offered a variety of “opponents” who would move and speak, but they all played chess the exact same way. The point of a program's suite of personalities is to “hook” you into playing more chess by (at least on a subconscious level) making you think you're playing people at a simulated chess club, and it's often pretty effective; I had a lively “virtual rivalry” with one of the Power Chess characters many years ago. I'll offer some creative ways of using personalities later.

**The Elo rating slider** – the “old standby” which is a part of nearly every commercial software program released in the last decade or so. The software offers a slider which you can adjust to make the program stronger or weaker; moving the slider also displays the approximate rating at which the program will play. These numbers are rarely exact, since a rating is just a benchmark of your expected performance against a specific opponent, based on your prior performance within a closed pool of players. Translated into English, that means that you as a player can actually have widely different ratings at the same time: one for your real life tournament games, one for correspondence games, one assigned by playing rated games against a chess computer, and one for every single online chess site at which you compete, and these may or may not even be close to each other. So any rating offered by a chess program, whether assigned to a “virtual” personality or the position of a rating slider, is an approximation at best. We'll be discussing this feature a bit later in this chapter, because it's almost a “universal” feature and is very useful for the average player.

Quite a few chess programs also allow you to adjust the engine's play according to specific criteria, such as aggressiveness, defensiveness, King safety, and central control, as well as to tweak the engine so that it might prefer certain chess openings or move some pieces more than others. I've used these features successfully in the past to roughly simulate the play of a few of my real life chess club opponents, but it's largely a matter of trial and error, and you have to be dang near a cross between Claude Shannon and Mikhail Botvinnik to get it just right on the first try. But I do encourage you to look for and play around with such features in your favorite chess program, though I won't be discussing them any further in this book.

# TRICK YOURSELF INTO PLAYING MORE CHESS

Nothing motivates a chess player like a good rivalry. Back when I started playing this game seriously (meaning I started spending a truly ridiculous amount of time playing and studying chess as my primary hobby), I had the misfortune of playing with a casual group of guys who were, by and large, buttheads. They'd usually win and, instead of offering advice on how to improve my play, would typically toss off a snotty remark about how bad a player I was. Now while I don't recommend that you go out and find a bunch of jerks to play chess with, I will tell you that the desire to give these guys a comeuppance was a great motivator which spurred my desire to improve my chess play. (And, having improved to the point at which I was regularly beating these guys [although I didn't act like them after I'd win], I will tell you that whoever said revenge isn't sweet didn't know what the heck he was talking about.)

So ultimately what you want to do when playing with your favorite chess program is to find some setting which challenges you without completely crushing and humiliating you. The idea is to find a setting at which you will win around a quarter of the time. If your particular program doesn't offer an adaptive opponent (see above) which will do this for you, then you'll need to take the bull by the horns and figure out how to find or create a setting which provides this level of challenge.

It's easy to do this with a program that offers pre-programmed rated personalities. The easiest thing to do is pick an opponent whose rating is about a hundred points higher than your own (assuming that you're a rated player) and start playing some games. If you're not a rated player, pick a personality as a starting point, then adjust your choice up or down the player list according to how well (or poorly) you do.

Ultimately, you need to try tricking yourself into thinking you're playing a real person. I don't mean in some psychologically unbalanced way in which you become obsessed with this non-person, but in a healthy way in which you want to become a better player so that you can beat this imaginary character. And doing so can provide a pretty healthy impetus to your growth as a player. As I mentioned earlier, one of the Power Chess characters became my imaginary rival for quite a while (primarily because of its opening choices, which took me into variations which none of my real life sparring partners ever played). The "hook" was the fact that the character had a name and a (cartoon) face; I doubt that I would have been nearly as eager to beat this character had it been just a group of settings and sliders.

Establishing a rivalry with a particularly tough to beat personality, setting, or level in a chess program is a great way to make yourself want to play and study more chess. It's a "virtual" rivalry, but without the snide comments and bad feelings you might be subjected to if you were playing against a bunch of jerks (the kind I had to play back in the day). Best of all, if you have a hard time beating an imaginary guy named "Toby" from a chess program, nobody knows except you and "Toby", and I greatly doubt old Toby much cares either way.

## SET UP A TOURNAMENT AND PLAY!

One of my favorite "tricks" when using chess programs with rated personalities was to play in "fake" tournaments. A popular tournament format is called a "quad", in which all of the players are ranked in order of their ratings, then divided into groups of four players. In theory, each player in a four player group should be fairly close to the others in rating; each group has a round-robin "mini tournament" amongst themselves, in which each player in the group plays each of the other three players once (and, if you do the math, each player will thus play three games, resulting in the combined number of games for the event being twelve).

Note that this approach only works well if your chess program lets its personalities play against each other (some don't). The Chessmaster series did allow the user to set up games between personalities, so that program was frequently my choice. I'd scroll through the list of characters and pick out three of them: two who were a bit more highly rated than my real life rating and one whose rating was a bit lower. I'd then randomly pair the first round by writing down the other three players' names and picking one out of a hat, then flipping a coin or rolling a die for choice of color in my game. I'd play my game against the first personality, save the game afterward for later review, then let the other two personalities play out their game. I'd repeat the process for three rounds, trying my best to alternate players' colors from round to round.

If I did well in the tournament, I'd drop the low rated player in the next "virtual" event I ran. I'd keep the other two players the next time and add the next higher rated player from the program's full list to replace the character I'd dropped. But if I did poorly in the event, I'd drop the highest rated player the next time and instead play against the other two players plus the next lowest rated player from the list.



If I felt especially ambitious (as I often did back then), I'd use the Elo rating formula to calculate my new “virtual rating” after each event and keep track of that from tournament to tournament as an extra incentive to keep studying and improving.

I can tell you from personal experience, this was not only a great way to “trick myself” into constantly trying to improve, the games I played also gave me more information about what I needed to study in order to make that improvement happen. Best of all, playing in these “virtual tournaments” is also a whale of a lot of fun.

## OH, IT'S ON NOW! PLAYING ONE ON ONE MATCHES

Another great method to spur yourself to play is to set up and play one on one matches against your chess engine. While this method works with a pre-programmed personality, it's a method you can easily use if the only thing your program of choice offers is a rating slider. In fact, a rating slider is ideal for this method, as we'll soon see.

If you're a rated player, set the rating slider to your own rating as a start; round your rating up if the slider can't be set to your exact rating (for example, 1635 might be rounded up to 1650 if the slider only recognizes fifty point increments). You'll now play a six game match against the chess engine set to at that rating. Obviously, you don't have to play all six games at one sitting; in fact, it's best that you don't so that you'll have time to analyze each one of your games afterward, before the next game (more about that later).

It's important that you alternate colors each game, so that you'll play exactly three games each as White and Black, switching colors from round to round. That's how a real chess match is played, so you should follow suit. And you'll score the results just as you would a real life match: you earn one point for a win, no points for a loss, and a draw scores a half-point for both you and your virtual foe (in other words the two of you split the point).

The result of your six game contest will determine your next virtual opponent. If you win the match by scoring at least 3.5 points, move the rating slider up to the next highest increment (I suggest by a minimum of twenty-five points) and then start another six game match. If you lose the match, lower the rating slider to the next lowest increment (I again

suggest a minimum change of twenty-five points if possible) and play a new six game match against the engine at that setting. If you tie the match (3-3), leave the slider where it is and start a new match. In this manner you'll advance when you win and get knocked back a step when you lose. Obviously you'll want to win so that you can face greater challenges.

If you spend more time playing chess than you spend studying, you're likely to “settle in” to a point at which you're bouncing up and down across a 100 or 150 point span. That's natural and very much like the situation you'd find at a real chess club, in which you often prefer to play three or four other players who are around your own playing strength. But, just as in real life, you'll want to study and improve so that you can play against other players; ultimately, when you work hard enough, you'll break out of that rating “plateau” and move up to greater challenges.

You can do this same thing quite easily with pre-programmed personalities in a chess program, moving up to the next higher-rated character when you win a match or down to the next lowest personality when you lose. And when you eventually “settle in” (as we saw in the last paragraph), this will be very much like a real chess club, as you'll likely be seeing the same faces on your screen again and again; the desire to “play someone new” will spur your desire to improve.

Just like the “virtual tournament” idea, the “home chess match” works really well. I've used both methods successfully and had a lot of fun doing it!

By the way, it's up to you as to whether or not you want to play timed games in either of these modes I've suggested. It's not a requirement to do so, but if you're one of those players who always finds himself in time trouble in real life games, I heartily recommend that you use the clock (more about this later in the chapter).

## TO RATE OR NOT TO RATE? THAT IS THE QUESTION...

Most chess programs offer a “rated game” mode, in which you play against the chess engine under simulated tournament conditions (timed game, no pausing the clock, no move takebacks, no hints, alternating piece color from game to game, etc.). But should you play rated games against your computer?

It's up to you, and depends in large measure upon what your particular chess program offers you. Some chess programs provide a rating slider so that you can choose the approximate strength of your opponent – the stronger the opponent, the more rating points you earn for a win and the less you risk for a loss. However, some programs' sliders will only go down to a certain point in a rated play mode. If your program's lowest rating setting is several hundred points higher than your actual tournament chess rating, I see no point in even bothering to play a rated game which you have little chance of winning. Note that many programs allow the use of “modular” engines, meaning that you can “unplug” one chess engine and use a different one instead. Different engines usually provide different ranges of ratings, so you might want to try multiple engines to see how the ratings differ. But if you're a 1400 rated player and the lowest rated game level is 1850, there's not much point in playing around with it. You might win, or course, but since most programs won't offer an “official” rating until many games (usually twenty) are played, the exercise may not have much of a point.

On the other hand, some programs do allow the slider to go quite low; for example, Chess King's rating slider can be set as low as 700 Elo. In this case, you might want to play a lot of rated games against a variety of opposition levels. I suggest that you try the rating slider in several casual games to get a feel for the difficulty before launching into rated games. Programs like Chess King will always display your rating as part of your on screen user profile (you'll learn more in Part Two of this book), which might encourage you to try raising your level (especially since every player starts with a default rating of 800, which is very low). My “Chess King friends” are perfectly happy to play mostly unrated games and seem unconcerned about their on screen ratings, worrying more about who has “leveled up” past them.

Bear in mind that the rating you earn in your games against any chess software program are nothing more than a measure of your performance while playing that program, and may have nothing to do with any rating you may earn using another program, playing online, or competing in tournament games.

The choice is yours. You shouldn't feel like you must play rated games against a chess engine, but the option is there and you can often learn a lot about your play from games when you don't have access to takebacks, the engine analysis panel (to see what the engine is thinking), or other hints.

# BEAT THE CLOCK

Likewise some people might question whether or not using a chess clock is strictly necessary (and, by the way, we'll learn more about chess time controls in Part Two). Some play modes, such as rated game mode, might require the use of a clock. I've also seen programs which require that a clock be set and used, but don't penalize overstepping the time limit in casual (non-rated) games against the computer.

As with rated games, it's your choice. But I will recommend one case in which a chess clock should always be used – by players who habitually and regularly find themselves in time trouble.

I've played scores of tournament games and have only found myself in time pressure once or twice. On the other hand, I have friends who've practically made a whole career of it. The time control makes no difference. Game in 30? They're in time pressure. Forty moves in two hours? They have four minutes left on the clock and they're only on move twenty-eight. It's completely ridiculous.

Assuming that you're not some kind of subconscious “adrenaline junky” and quite literally can't (and will never be able to) help yourself because you positively crave that rush, you can use your chess program's timed modes to break yourself of the habit. And it's easier than you might think. All you have to do is set the clock for a shorter time limit than that of the tournaments in which you normally play.

The method works, too. I used to direct tournaments which were run at “game in sixty minutes” time controls. So for the week leading up to a tournament, I would play all of my practice games against the computer at “game in forty-five”. Bear in mind that I was never one to usually get in time trouble anyway, but I found that playing at this slightly accelerated pace helped me in tournaments – I always had extra time whenever I needed it; in fact, in most of my games I had well over five minutes on the clock when the game ended.

So if you're one of those unfortunate souls who seems to always be in time pressure, use your computer chess software as a tool to help you break the habit: play faster games at home than you do in tournaments and, after a while, you'll discover that you seldom end up in time trouble anymore.

# SAVE YOUR GAMES – ALWAYS!

Always, always, always save the games you play against your chess computer! Reviewing and analyzing them later will provide you with bucketloads of valuable information on how you can improve. Only complete fly-by-night cheap junk chess programs don't allow you to save your games after you play them; in fact, most chess programs these days will save your games into a default database automatically.

The only real issue to discuss here is what format to use when you save your games. Many chess programs can save games into some proprietary file format, that is, a format that can be read by that particular program. Nearly every program, though, will save your games into a format called PGN, which stands for Portable Game Notation (“portable” meaning that the game can be ported [carried] from one program to another). A PGN file is just a glorified text file (you can easily open it in a word processor and read the game score) in which the information's formatting, such as game headers and move spacing, follows a set of strictly proscribed rules.

Each format has advantages. Saving a game in PGN format means that you can play a game in one program, save it, and then open it up and analyze it in a different program. Proprietary formats usually allow additional game annotation (comment) features, like colored arrows or pop-up windows showing a position's pawn structure, features which can't be used in a PGN text file.

**Consider the options and make your pick but, either way, save your games!!!**

## SUMMING UP

We'll look at some other chess computer playing tips later (especially when we talk about setting up positions). One could write almost a whole book about nothing but playing regular games against a chess engine.

There are just a few basic ideas you should take away with you after reading this chapter:

Playing a chess computer at its full strength is pointless. Find a level at which you win about a quarter of your games (if your chess program doesn't offer such an adaptive opponent). Play as much chess as you can; if you have to, find ways to “trick yourself” into wanting to play more chess which also help you measure your progress as a player (such as the “virtual” tournaments and matches I suggested). And always save your games!

# CHAPTER 6

## Learning your chess engine's lingo

- It's all in the numbers

# LEARNING YOUR CHESS ENGINE'S LINGO

It sure would be cool if you could feed one of your games to a chess computer, let it analyze for a while, and have it spit out a multi-page plain language commentary about your chess strengths and weaknesses, including several Kmochian paragraphs about your pawn structures, and a Dvoretsky-like breakdown of your endgame play. Yep, that would definitely be cool.

But it won't happen. At least not anytime soon.

Many computers can understand voice commands (as long as they're programmed to do so), but they have the devil of a time using natural language to talk back to us. Some chess programs claim to offer game analysis in such natural language – and they do – but it's mostly smoke and mirrors. The responses are “canned”, that is, pre-programmed and often not very informative.

A chess computer can give us a whole lot of input as to what we did wrong in a game and how we could have played better. Over the course of many such analyzed games we can also spot tendencies in how we play, categories of mistakes that we make over and over again, which will show us what problems we need to correct in order to improve. But to get that information, we'll have to meet our computer chess coach halfway. It can't learn to use our language but, believe it or not, it's actually pretty easy for us to learn its language.

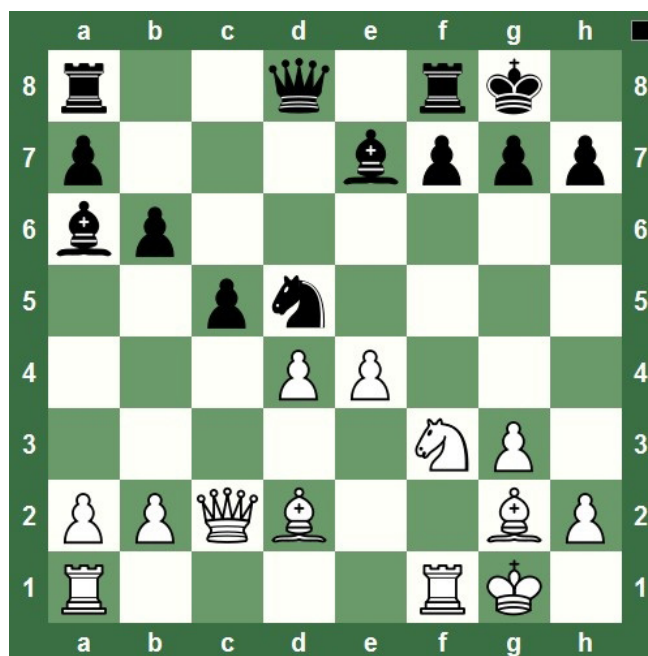
All you need to remember is this: 1.00 equals a pawn, and positive numbers mean that White's ahead.

I'm serious. At its core, it's that easy.

# IT'S ALL IN THE NUMBERS

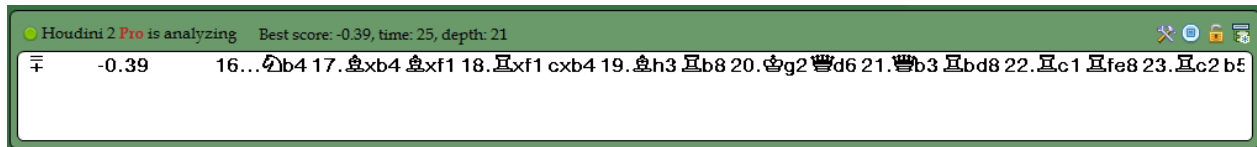
Way back in Chapter Two we learned that computers play chess by using a formula called an algorithm to assign a numerical evaluation to a particular position. The engine looks ahead as far as it can, evaluating millions of possible future positions, “backtracks” the numbers, and ultimately plays the one candidate move which leads to that best position.

What's even cooler is that the computer will show us what it's thinking. Pretty dang near every chess program ever made has some form of “analysis window” in which it will show the user what moves it's pondering at any given moment. The best way to illustrate how to read the info in a computer's analysis window is by using a practical example (I'll be running Houdini 2 in the Chess King program):





When we look at this position (with Black to move) we see the tempting Rook on f1 which is attacked by Black's Bishop. Would taking the Rook be a good idea? Let's fire up Houdini and see what it thinks:



Obviously, different programs will display chess engine analysis in different ways. But several pieces of information are common to all chess programs' engine displays.

Depth: how far ahead (in plies, or half moves) the engine looked ahead. When I took the screen shot, Houdini was then analyzing the 21st ply – in other words, it was looking ten and a half moves ahead.

Time: Most programs will also show the amount of time the engine has been analyzing. It took Houdini just twenty-five seconds to reach that 21-ply search depth. The longer you let an engine analyze a position, the more it sees and the more accurate the analysis should be. That's an important point, and you just know we'll be coming back to it.

Evaluation: This is also sometimes called the score (as it is in the illustration above). I mentioned earlier that a value of 1.00 is equal to a pawn. It follows then that a value of 3.00 is equal to a minor piece, 5.00 is equal to a Rook, and 9.00 is equal to a Queen.

Of course, a chess engine takes more than just material into account. It also looks at a large number of other factors, like mobility, King safety, control of space, how well the pieces guard each other, and on and on. That's why you'll very often see evaluations that are less than a pawn (as in the illustration above). That might not sound like much of a difference, but those little numbers can add up pretty quickly if one side keeps making small mistakes.

When you're reading a numeric evaluation, positive numbers mean an advantage for White, while negative numbers indicate an advantage for Black.

So what is Houdini telling us with its evaluation of the position above? It's looked 21 plies (ten and a half moves ahead) and determined that with best play for both sides (the moves shown by the variation in the analysis panel), after Black plays 23...b5 he will be 39/100ths of a pawn ahead. In chess terms, this is equivalent to having a slight advantage (which is what Houdini is displaying with the Chess Informant symbol to the left of "-0.39" in the analysis panel).

While we're on the subject, here's a list of the common Informant symbols and what they mean:

**+− White is winning**

**± White is much better**

**± White is slightly better**

**= Equal position**

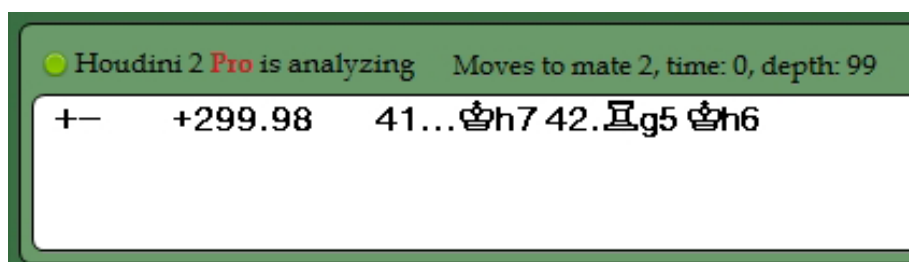
**∓ Black is slightly better**

**∓ Black is much better**

**−+ Black is winning**

So what does an advantage of 39/100ths of a pawn really indicate? As we've seen, Black is slightly ahead. In more concrete terms, a tempo is estimated at being equivalent to about a third of a pawn. So Black's advantage is about the same as being a tempo ahead. More important (and less abstract) is that we've learned Black is better off attacking White's Queen and trading minor pieces before he snaps off the f1-Rook to win the exchange.

What happens when one side has a forced mate? Different programs will display the fact in different ways. Some programs will replace the Informant symbol with a pound sign followed by a number (such as “#6”), which means that it's checkmate in that number of moves (e.g. “#6” means “mate in six”). Other programs (like Chess King) will display the Informant symbol for one side having a winning position, show a very high numerical evaluation (in the hundreds of pawns), and replace the “Score” value with the number of moves to checkmate, as seen here:



Your chess program's documentation will often contain specific information about the way it presents the engine's analysis, which can include additional parameters unique to that software.

Now that you understand how to read the engine's analysis, it's time to learn how to use it as a tool to help improve your chess.

# CHAPTER 7

## The real reason you bought a chess program

- Keeping a record of your games
- The art of manual game analysis
- Selecting games for computer analysis
- When it comes to chess engine analysis, longer is better
- Tips for more advanced users
- What you can expect to see after a game analysis
- A chess engine is your trusty sherpa guide

# THE REAL REASON YOU BOUGHT A CHESS PROGRAM

Every so often over the years I've been in a discussion with a chess software user who'll say to me, "Why should I bother analyzing my games? Who cares what I should play in a particular position? I'll never have a game with that exact position again anyway!"

That's a classic textbook example of "missing the woods for the trees". The important things you'll learn from a chess analysis engine aren't what you should have played in particular positions; by using a chess engine to analyze many of your games, you'll discover recurring problems in your chess play, mistakes you make regularly, bad tendencies which hurt your results. Only by analyzing a lot of your games and identifying these problems can you learn what areas of your play need improvement.

In fact, you might not know it, but the ability to have a chess engine analyze your games is the real reason you bought a chess program in the first place.

## KEEPING A RECORD OF YOUR GAMES

Multiple chapters of this book have already mentioned this, but I'll say it again: save your games! Save them all. Write down the moves of the games you play face to face, save the games you play online, and (if your chess program doesn't save them automatically) save the games you play against your chess computer program.

Most chess playing programs allow you to input and save "outside" games, that is, games you didn't play against the program itself. Create a new database for your games and save all of your games into it. For games you play online, you can very often click a button and have the game e-mailed to you as a text file or in PGN format. Some programs allow you to copy a PGN format game to a database directly. If not, just open the PGN file (after all, it's just text) in a word processor, print it out, and then add it to your database manually.

The important thing is to create a database of your personal chess history; it will potentially be your most valuable tool in your efforts to become a better chess player.

# THE ART OF MANUAL GAME ANALYSIS

Before you have a computer analyze your games, you should do it yourself. As soon as you can after a game (sometime in the next day or two), you should open the game up in your chess program and add some notes to it. The notes don't have to be anything elaborate, just a few thoughts and ideas you remember having during the game. Most chess programs allow you to add text commentary to particular moves, as well as variations (alternate moves which could have been played).

Keep in mind that these comments aren't for publication (although they can be; I've used chess software to annotate literally hundreds of games which have been published in print and on numerous web sites over the years). The comments you write will typically be for your eyes only, so you should treat your personal database as a "chess journal". If you remember being confused at some point in a game, you should make a note of it: "I wasn't sure here whether to retreat the Knight or counterattack with my Bishop". If you had a sudden epiphany during a game, note that too: "I realized that my 'bad' Bishop was outside my pawn chain, so it wasn't quite as bad as I'd first thought".

If at some point in the game you'd been horribly torn between two candidate moves, you should absolutely add a new variation which starts with the move you didn't play. This kind of move is a prime candidate (no pun intended) for engine analysis or for playing the game out against a chess engine starting from that position (we'll learn more about this technique later, in the chapter on setting up positions).

If your chess program allows you to use graphic commentary (colored squares and arrows), feel free to make liberal use of them. I often use them to show overprotected pawns or as a reminder that a piece is protected by a Bishop or Rook far off on the other side of the board.

Why should you annotate your own games? First, your comments are a record of your thoughts during a game. I wish I'd had a computer back at the start of my tournament career so that I could have added comments – when I replay games from over twenty years ago, I often find myself saying, "What in the world was I thinking there?" If I'd been able to annotate these games and save them to a database, I'd know. Second, when you're annotating a game you'll often see things you missed when you were playing it. I can't tell you the huge number of times I've gone back over a game at the quiet of my desk, away from the pressure of playing the game itself, and suddenly spotted something I'd missed during the game. While it's true that I've often felt like a real horse's patoot when I later spot something simple that I'd missed while the game was in progress, it's equally true that I usually learn something pretty important

in the process. Third, after you annotate a game and then have a chess engine analyze it, you'll be able to compare your ideas with the chess engine's variations and evaluations, seeing how well they match up. You might find out that the candidate move you didn't play at that crucial point of the game turned out to be the better move after all.

## SELECTING GAMES FOR COMPUTER ANALYSIS

If you play a whole lot of chess (like multiple games every day – gee, I wish I still had that kind of time myself), you probably won't be able to manually annotate all of them, nor have a chess engine analyze them all. That means you're going to have to select which games you'll concentrate on.

The primary candidate games for analysis should always be your losses. I know everybody loves to have their egos stroked, but if all you want to do is have a chess engine confirm how “brilliantly” you played, you're barking up the wrong tree both by owning a chess program and by reading this book. The hilarious part is that I've known players who start out loving the idea of having an engine analyze their wins to verify what “chess masterminds” they are, then they look at the analysis and discover that their opponent missed a mate in six right out of the opening – it always brings those guys right back down to earth in a heartbeat.

If your analysis time is limited and you can't have an engine analyze all of your games, have the engine analyze your losses – you'll learn more that way. You'll discover the areas you need to focus on during your study time. And if you have loads of losses (and thus don't have time for an engine to analyze them all), go over your games to find the ones in which you don't know why you lost. If you go over a game and see that you lost because you moved a Rook to an unprotected square where it got snapped off the board, don't bother having an engine look at it – you already know why you lost. If you lost a close game where the material stayed pretty even and you're not sure what happened, that's the game to have a chess engine analyze.

If you do have a little extra time for engine analysis of your victories, pick games that were tough for you. Don't bother with the tournament game where you beat the eight year old who hung his Queen on the fifth move; analyze the three and a half hour battle in the French Defense which was

a cut and thrust maneuvering battle that you won by the skin of your teeth when you promoted your pawn a move ahead of your opponent. (Yeah, I had a tournament game just like that once, 4+ hours long, sweat literally pouring off of the two of us by the endgame – my wife showed up just in time for the last half-hour and she said she felt like calling an ambulance for both me and my opponent, we both looked so bad. She thought I was going to have a stroke). Any game in which you were confused or for which you remember some “crisis point” in which you were confronted with a difficult decision (“Should I swap Bishops here or keep my Bishop for the endgame????”) is a good candidate for analysis.

So start with your losses; then, if you have time, use the chess engine to also analyze your tough wins.

Why do I say “if you have time”? Don't chess computers analyze games instantly?

No, they don't...

## WHEN IT COMES TO CHESS ENGINE ANALYSIS, LONGER IS BETTER

Many chess playing and analysis programs have all kinds of tweaks and toggles and ways you can configure an analysis session, and your best bet is to consult your program's documentation to learn what all of the settings can do. But a setting common to all chess programs is the analysis time – the amount of time the program will spend analyzing either the whole game or each individual move. In every case, one common rule applies:

The longer you let a chess engine analyze, the better and more accurate the analysis will tend to be.

While it's possible to have a chess engine analyze a game at, say, one second per move (which for most games means that the program will finish a game inside of two to three minutes), the analysis you get back won't be as good as if you set the “time” parameter for sixty seconds per move. Although this means that your chess engine will take two to three hours to analyze a game (instead of two to three minutes), the evaluations and suggestions you'll receive will be far better and more accurate than the more cursory analysis you'll get back from a quicker analysis session.



Players will occasionally ask me, “I play a lot of chess. Wouldn't it be better for an engine to analyze all of my games quickly than just a few of them at greater length?” I don't necessarily agree with that, but it really depends on what goes on in your games (and the previous section above on prioritizing the games you select for analysis talks a bit about this). If you lose a lot of games, but can easily see afterward why and how you lost most of them, then there's really no point to having an engine analyze them. But if you're losing a lot of times with no clue as to how the losses happen, then you might be better off analyzing more games at shorter time settings.

In general, though, for most of us who are experienced players I recommend having your chess engine analyze games at greater length. A longer analysis time means a deeper search for each move; the engine will evaluate more positions farther ahead, and thus give you back better suggestions and evaluations.

As for specific time settings, that's going to be a matter of trial and error on your part; any specific recommendations I'd give could likely be obsolete by the time this book sees print. It will depend on both your hardware (number of cores or processors and their speed) and your software chess engine (primarily whether it supports the use of multiple cores or processors, but also the inherent search speed of the engine as determined by the number of factors contained in its algorithm). It's not unreasonable to expect a chess engine to take one to two hours to perform a decent analysis of the average game.

A lot of people like to have their chess engine analyze games while they're away from the computer, for example while they're asleep, so that the computer will devote its full resources to the analysis task. On the other hand, if you have a multi-core or multi-processor machine and a chess engine which uses a single processor, you could have your chess engine analyze a game “in the background” while you're using your computer for other tasks. Even if you have a single-processor computer, but have a chess engine which lets you set a specific search depth instead of a “time per move” setting, you could set the depth for “19” (for example) and let the chess engine run for as long as it takes to reach that depth while you're using your computer for other tasks (but if such is the case, it's probably best to just let the chess engine have your computer and do a “while you sleep” analysis instead).

## TIPS FOR MORE ADVANCED USERS

Many chess engines will use your computer's RAM (Random Access Memory) as temporary storage for positions which it has already evaluated; if that same position comes up by a different move order elsewhere in the search, the engine won't have to evaluate it again -- it will "remember" the previous analysis. These evaluations are stored in something known as a "hash table", and many chess engines will let you set the size of the hash tables used in an analysis session. As a quick rule of thumb, setting the hash size for one-half to two-thirds of your computer's total RAM should do nicely.

If your chess engine can use the Nalimov endgame tablebases (which are special endgame databases that allow a chess engine to play or analyze simple endgames perfectly), and you have these tablebases available (through download or purchase – several commercial tablebase packages are available), you should consult your chess program's documentation to learn how to connect the engine to the tablebases. Not only will the tablebases provide perfect analysis, but they'll also often shorten the time required for the engine to analyze a game, since the endgame evaluations are already contained in the tablebases.

Most chess programs also come with an opening book (also known as an opening tree) for its chess engine. Make sure you load the proper opening book for the chess engine you're using; this, too, often shortens the time of an analysis session because many engines won't bother analyzing moves which are already in the chess tree. Many software vendors also offer larger, more comprehensive opening books as a separate "add-on" purchase; if you have one of these, use it instead of the book which came with the program.

## WHAT YOU CAN EXPECT TO SEE AFTER A GAME ANALYSIS

Here again, the analysis output of different chess engines will vary from program to program, but the basics of what you'll see should be about the same between them. You should see variations inserted into the game score at the places in the game where a player could have made a significantly better move than what he played. You'll also see numerical evaluations of what was actually played and of the suggested variation (so that you can determine exactly how much better the engine's suggested move would have been). In some cases, an engine might even provide a numeric evaluation for every move of the game.

Here's an example, showing Houdini 2's analysis of a game in Chess King:

```
[...] 1.e4 c5 2.♘f3 ♘c6 3.d4 cxd4 4.♘xd4 ♘f6 5.♘c3 d6 6.♗g5
e6 7.♖d2 a6 8.O-O ♗d7 9.f4 ♗e7 10.h3 b5+0.04* 11.g4N -0.18*
[11.a3+0.04 11...O-O+0.07 (11...♗c8 12.♗d3 ♘xd4 0-1, Frohman T -
Halstead Kevin, Plymouth 1984 It (open); 11...♖b6 12.♘f3 ♗d8 13.♗h4 b4
14.axb4 ♖xb4 15.♗d3 ♗b8...0-1, Geraldini Daniel - Lopes Marcelo F, Brasilia
1999 Tournament "Brasileiro") 12.e5+0.11 12...dxe5+0.07 13.♘f3+0.07;
11.♗xf6 gxf6 12.a3 ♖b6 13.g4 ♗c8 14.♘xc6 ♗xc6 15.f5 a5...0-1, Nabuurs
Joep 2206 - Van Eijk Sander 2203, Hengelo 2003 It (open) (juniors) (under 20)]
11...b4 -0.18* 12.♘ce2 -0.55*
[12.♗xf6 -0.18 12...bxc3 -0.15 13.♖xc3 -0.18]
12...♘xe4 -0.55* 13.♗xe7 -0.49* 13...♖xe7 -0.42* 14.♖e1 -0.53*
14...d5 -0.60* 15.♗g2 -0.53* 15...♘c5 -0.26*
[15...O-O -0.52 16.♗xe4 -0.68 16...dxe4 -0.56 17.♗b1 -0.56]
16.♗b1 -0.26* 16...a5 -0.26* 17.f5 -0.26* 17...O-O -0.26* 18.♗f1 -0.19
* 18...♘xd4 +0.00*
[18...♖d6 -0.18 19.♖h4 -0.22 19...♗fd8 -0.15 20.♗b5 -0.26]
19.♗xd4 -0.92*
[19.♘xd4 +0.00 19...♖d6 +0.07]
19...exf5 -0.92* 20.♗xd5 -0.92* 20...♗fe8 +1.95*
[20...♗ae8 -0.93 21.♗c4 -0.93]
21.♗f3 -1.66*
[21.♗xa8 +1.91]
21...fxg4 +0.01*
[21...♗ac8 -1.65 22.♖d2 -1.91]
22.hxg4 -1.11*
[22.♗xa8 +0.00]
22...♗b5 +0.55*
```

Houdini has provided evaluations of every move, suggested improvements at places where each player could have played something better, and even identified the point at which one player deviated from known opening theory (marked with an “N”, for “novelty”) and inserted examples of known opening play taken from Chess King's huge database of games.

When reviewing the analysis of this game, I realize that I could devote pages of this book to pointing out various aspects of this game and its analysis – both players made some significant mistakes. But here are just a few highlights which we can consider.

White's opening choice: White left “book” when he played 11.g4. Houdini provides two alternative moves which have been previously played in other games. But since White's choice gave Black an advantage of 0.18 pawns, while the suggested move would have kept the game essentially even (0.04 advantage to White), this isn't a major red flag for White. If the opening is one the player sees regularly, he might want to play over the suggested variation, and keep 11.a3 in the back of his mind for future reference.

White errs almost immediately thereafter: On his very next move (12.Nce2), White makes a notable mistake. Black has a slight advantage after 12.Bxf6 etc., but White's maneuvering idea changes the evaluation by about a third of a pawn, which is enough for him (and us!) to take notice of.

Black blunders badly at move 20: After the move 20.Bxd5, White's Bishop is attacking Black's a8-Rook. But Black overlooks the attack and moves his other Rook instead. The evaluation goes from being about a pawn in Black's favor (-0.92) to being almost two full pawns for White (+1.95, because White wins the exchange of a minor piece for a Rook), a net swing of almost three pawns! But White blow it, fails to take the Rook, and Black escapes...

What the analysis of this game says to me (and should say to both players if they were to have Houdini analyze it themselves) is that both players need to work on their tactical and visualization skills. Neither player is likely to see the exact position after 20.Bxd5 ever again in their respective chess careers, but they could both easily encounter a position very much like it. The ability to recognize similar patterns is an important chess skill which every player needs to develop; when a Bishop is suddenly centralized in their future games, both players should remember this game's analysis and think to check for any sudden attacks which that centralization move has created.

Specific moves suggested by a chess engine in specific positions aren't as important as what the numbers and the general nature of the suggested move point out to us.

# A CHESS ENGINE IS YOUR TRUSTY SHERPA GUIDE

The reason why you should analyze as many of your chess games as you can is not because of specific moves suggested by the engine in specific positions. It's because of what the analysis of many games will tell you over a longer period of time.

You should look at your games as an overall whole and try to spot tendencies, mistakes which you make repeatedly – not necessarily in every game, but often enough for you to see a pattern form. Take the example of the White player in the game we just looked at: he could have won the exchange (Black basically gave him the Rook), but he failed to take it. If the White player spots this as a regular pattern in his games, he should focus more of his study time on solving tactics problems. He missed a one-mover which wins material in this game; it's a fair bet that he's also overlooking two and three move combinations which can win material and set up checkmates.

There are two things for which you should be on the lookout when you're reviewing your games: how your losses occur and when they occur. It's not hard to spot these tendencies, either; your chess engine will act as your “Sherpa guide”, because the evaluation numbers will act as signposts which point the way.

The first thing to look for when you're reviewing the evaluation numbers is how you're losing. Are you losing a little bit at a time, with your position being eroded by a quarter-pawn here, a third of a pawn there, until your opponent has built a significant (about one pawn or more) positional advantage, even though the actual material on the board is even? If that's the case, you're losing because of what the first world chess champion Wilhelm Steinitz called “the accumulation of small advantages”. Steinitz is known today as the father of positional (a.k.a. strategic) chess. If your position is getting whittled down a bit at a time like that, through your opponent accumulating these small fractional advantages, you should concentrate a good portion of your study time on chess strategy. Learning common strategic themes will help your game, because you'll not only see how your opponents are building up their game (and maybe see how you can make moves to hinder them), but also discover ways to do the same thing as your opponents – that is, slowly build up your own position to match your opponents' buildup (nullifying their advantage) or even gain advantages of your own.

But if the evaluation numbers indicate that you're cooking along happily with a roughly even position when suddenly WHAM! Your opponent drops an A-bomb on you, winning material to gain an advantage, and you never saw it coming, you should spend more time studying chess tactics. This

will not only help you to see the coming explosion, but hopefully teach you how to drop a bomb on him before he does it to you.

And in both cases, you should definitely study chess defense; those techniques will help you limit your opponents' opportunities to do you harm.

Conversely, you might start seeing a tendency you have to make moves which are just okay, that preserve the status quo, but the your chess engine is showing you variations where you could win your opponents' material if you'd played differently (like White did in the above game when he missed the fact that he could win the exchange). In this case, you should definitely study chess tactics and study attacking chess (which are not necessarily exactly the same thing, as “attacking chess” refers to how to break down an opponent's position and ultimately attack his King).

You see the idea? When the evaluation numbers show that your opponents are gaining an advantage, the size of the numbers tells you whether the advantages are coming strategically or tactically, and that tells you on which area you should concentrate your chess study time.

That explains the “how”; the “when” is really easy.

Try to spot which part of the game you're in when the numbers start to go south in your opponents' favor. Does the slow decline or tactical shot tend to happen in the opening, the middlegame, or the endgame? That tells you which phase of the game you ought to be studying.

For example, let's say that you usually have a really good game going until the Queens come off the board. Then bad things start to happen and you wind up losing. That's a really good indicator that you need to get your nose out of that Winning with the Accelerated Dragon book and start studying (and practicing!) endgames; your Accelerated Dragon is fine – it's your endgame that needs work. (You might even be able to “fine tune” this, too – you might find that your Rook and pawn endings are fine, but you're messing up your minor piece play in the endgame. Don't be afraid to get specific if those are the kind of tendencies you spot in your games.)

Conversely, you might find that you get a great position right out of the opening; in fact, you often play variations from Modern Chess Openings perfectly to reach positions evaluated as “slightly ahead” for you, but within a half-dozen more moves your opponent usually has an advantage. You need to start studying the middlegame (and, more specifically, strategy or tactics depending on how your opponents are getting that advantage, as we learned above).

And if your chess program of choice has a big honkin' opening book containing millions of positions, but your analyzed games are often displaying the “N” (“Novelty”) notation at your fourth or fifth move, followed quickly by a big advantage for your opponent, that means you need to tune up your opening play (and, if it's happening that early in the game, you need to study general opening principles, not specific opening variations).

See how easy that is? None of this is remotely rocket science. You just need to have a chess engine analyze a whole bunch of your losses, then look at the evaluations, and find patterns in your play which will guide the way you spend your chess study time.

By the way, the process never ends. About the time you've punched up your opening play, you'll find that you're getting the whole way to the endgame before you fumble the ball. So you set aside the DVD on opening theory and fire one up on how to play the endgame. Maybe you'll correct some tactical deficiencies so that your chess foes aren't winning material nearly as often, but now you're seeing that “slow positional erosion” we talked about. Put that tactics training software aside and crack open a copy of Pachman's Modern Chess Strategy.

No matter how accomplished you become at chess, there's always more to learn. And the best part of having a strong chess engine at your beck and call is that no matter how good you get, your chess engine can still show you something new.

That reminds me of one last point before we move on, mentioned before but worth repeating. When you're shopping for a chess program, you're not buying a strong engine to play against (unless you're a titled player) – you want a really strong chess engine for the analysis it will provide for you.

# CHAPTER 8

## What's the best move? Positional analysis

- Set 'em up, Joe!
- The position is set – what now?



# WHAT'S THE BEST MOVE?

## POSITIONAL ANALYSIS

Chess engines aren't supposed to be divine oracles that always have the “perfect” answer. Let's imagine you have some chess position that's really bugging you, and you could show that position to any two world champions (living or dead) and get their personal advice on what to play in that position. Mikhail Tal, who was legendary for his scary attacking chess and sacrificial play would likely give you one answer, while Tigran Petrosian, who is renowned for his fine defensive play and patient moves (the guy was like a panther lying hidden on a jungle tree limb – he'd just quietly bide his time and then strike!) would most likely tell you something completely different. They'd both give you strong moves, each of which would fit that player's particular style. Which one you'd pick would depend on your own preferences, but the cool part is that both moves would likely be better than what you'd have come up with on your own.

The ability to get advice from a stronger player is another reason why you bought a chess playing program (and why many of us own more than one – it's that “one move from Tal, one move from Petrosian” thing). You can just ask a program for an opinion, you can have the chess engine play against itself from that position, or (best of all) you can even play against the engine using that position as the start, which is especially cool because it lets you try out your own ideas.

## SET 'EM UP, JOE!

I don't remember ever seeing a chess program which didn't let me set up a chess position from scratch. Most programs won't let you set up an illegal position (mainly to keep “junk” games out of your database – and everyone else's, too, if you share your games online), but all chess programs will let you set up legal ones. It's a crucial tool which is very underused by most chess software owners. A couple of decades ago, I wrote an electronic book as an “add-on” for a popular playing program in which the entire book consisted of positions the reader was encouraged to play out against the program. And do you know what I heard all the time from my readers? “I didn't know you could do that!”

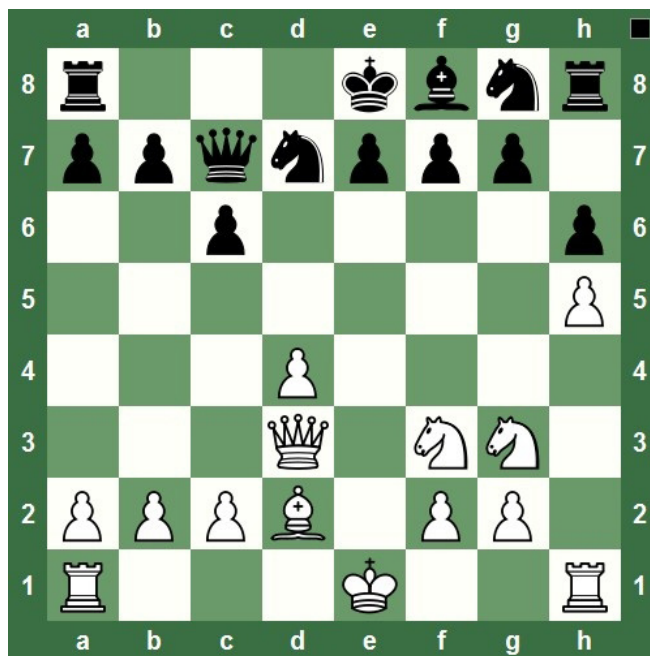
Yes. Yes, you can.

Take a look at the help files or manual for your chess playing software to learn the procedure for setting up a position in that specific program. The usual procedure is that you click a button to clear the chess board,

then you click once on a piece displayed in a “palette” (a visual display of all piece and color combinations – just think of it as you would a box of chess pieces), then click on the square where you want it to appear on the board.

## THE POSITION IS SET – WHAT NOW?

Once you have a position all set up, there are a number of ways you can explore the possibilities with the help of a chess engine. We'll start with a sample position which occurs after the moves:

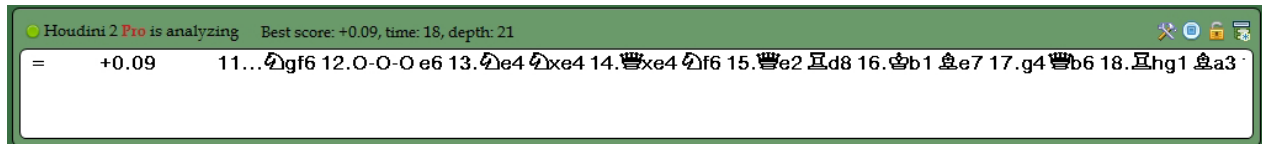


1. e4 c6
2. d4 d5
3. Nc3 dxe4
4. Nxe4 Bf5
5. Ng3 Bg6
6. h4 h6
7. Nf3 Nd7
8. h5 Bh7
9. Bd3 Bxd3
10. Qxd3 Qc7
11. Bd2

It's a common position in the main line Caro-Kann Defense and has been played about a half-zillion times. But I didn't know that back in the days when I didn't have a computer. So I'd set up this position on a physical chess board and stared at it and analyzed and scribbled in a notebook. With a chess engine, the process would have been much easier and a lot more fun.

Here are some ways we can explore this position with our chess engine's help.

Get an evaluation from a chess engine. This is the easiest and quickest way to get information, though not necessarily the best. Just fire up your favorite chess engine and let it chew on the position for a depth of nineteen or twenty-one plies. (Here's a tip: always try to have your engine analyze a position to an odd number of plies; some engines can get a bit “blind” tactically at even ply search depths.)



...and inside of twenty seconds I have an answer. Houdini 2 thinks that 11...Ngf6 is best here, and if the full variation shown in the analysis pane is played, the position should be about even.

Many chess programs give you a command to let the chess engine play the best move its found in the position (hitting the keyboard's spacebar seems to be a common way to make this happen). Then the engine will start analyzing again from this new position. You can have the engine analyze for another nineteen to twenty-one plies, hit the spacebar again, and keep repeating the process. You'll often find that the resulting variation is a bit different than what the engine initially thought; that's because you're letting the engine “creep ahead” move by move, always starting a fresh analysis from the new position – in effect, you're (artificially) letting it analyze deeper one move at a time. A few chess playing programs will do this sort of “creeping” analysis automatically (notably Fritz and Aquarium; the latter offers a wider variety of settings and controls but is also a bit harder to use).

If you're feeling especially ambitious, you can have multiple chess engines offer their analysis of the position. Some programs let you switch engines with a few mouse clicks; otherwise you might have to set up the position in a separate program. I find it really beneficial to get multiple “opinions” in this manner.

Have the engine play itself from the position. Many chess playing programs have a feature in which a chess engine can play games against itself starting from any legal chess position. This is a great way to see what can happen next from any given position, especially when you run multiple games and change the time or depth settings from game to game. Programs which allow the use of “modular” engines or more than one engine at a time will often let two engines play against each other from a given position as well.

Play practice games against the engine starting from your position. This is potentially the best way to explore chess positions using a playing program because it lets you test your own ideas against your computerized sparring partner. Try different ideas and candidate moves from game to game and, if you make a mistake, don't be afraid to take moves back and try something else. In this manner you're learning about the position "hands on", by doing, not just by looking at computer's suggested variation.

This method is especially useful for practicing endgames. After studying a particular type of endgame, set up the same positions you've studied from your book, video, or software and try your hand against a chess engine to see if you can duplicate the winning technique. Then set up some imaginary positions using the same material to try applying the concepts you've learned to other, similar endings.

Your chess engine can be both an advisor and a sparring partner when you're trying to figure out a chess position from a database, book, or video. Try all three methods; each will increase your chess knowledge in a different way, all by using the same basic function of your chess playing program.

# CHAPTER 9

## Shaking the chess tree

- Opening choices at a glance
- A shortcut for setting up opening positions
- Learning the opening codes
- Other chess tree tricks
- For masters and grandmasters: spying on your opponents
- Spotting your own weaknesses

# SHAKING THE CHESS TREE

Imagine that you could take a few million chess games and combine them into a single game, one which could show thousands of variations so you'd see at a glance what moves have been played in every position. Now imagine that the game would show you statistics for every move, giving you information on how often each was played and how successful each move was for the moving side.

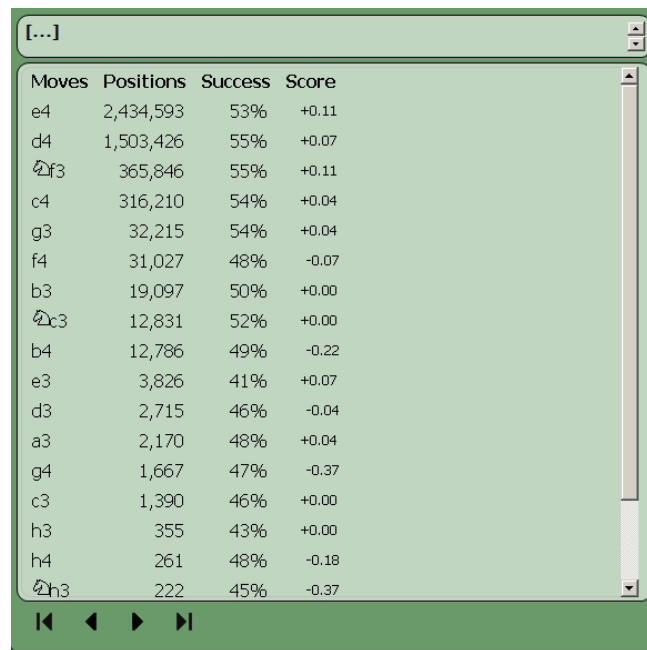
You've just imagined what we call a chess tree. Nearly every chess program has just such a tree as part of the software package. And since the tree most often applies to the chess openings, this tree is usually known as an “opening tree” or “opening book”.

# OPENING CHOICES AT A GLANCE

Let's open up a chess tree and see what it contains. As I said, pretty much every chess playing program has some sort of opening book; the better programs let you see the tree's contents. One reason why chess programs have opening trees is so that you, the user, will see a variety of openings when you play against a chess engine; if left on their own, chess engines will tend to play the same opening moves over and over.

But another reason chess playing programs have opening books is for you, the user, to use them to help you study and research opening variations.

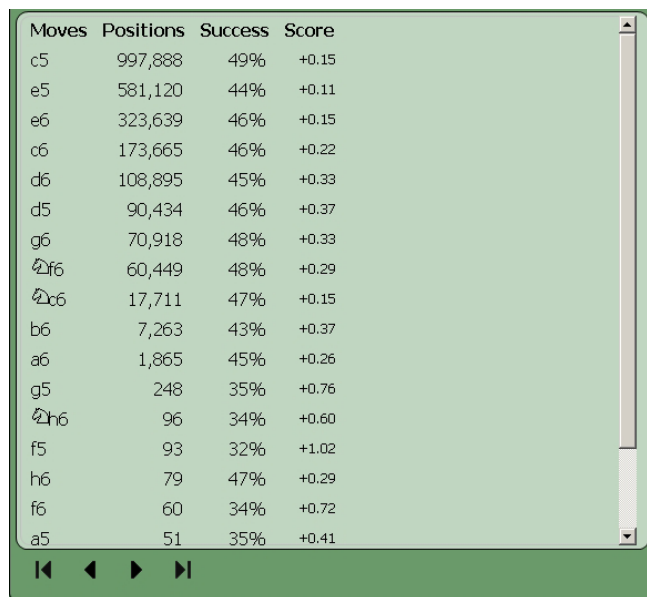
Here's Chess King's opening tree, showing the options for White's first move:



The screenshot shows a window titled "[...]" containing a table of chess opening moves. The table has four columns: Moves, Positions, Success, and Score. The moves are listed in descending order of position count. The table is scrollable, with a vertical scrollbar on the right side. At the bottom of the window, there are navigation icons: a left arrow, a double left arrow, a right arrow, and a double right arrow.

Moves	Positions	Success	Score
e4	2,434,593	53%	+0.11
d4	1,503,426	55%	+0.07
♘f3	365,846	55%	+0.11
c4	316,210	54%	+0.04
g3	32,215	54%	+0.04
f4	31,027	48%	-0.07
b3	19,097	50%	+0.00
♘c3	12,831	52%	+0.00
b4	12,786	49%	-0.22
e3	3,826	41%	+0.07
d3	2,715	46%	-0.04
a3	2,170	48%	+0.04
g4	1,667	47%	-0.37
c3	1,390	46%	+0.00
h3	355	43%	+0.00
h4	261	48%	-0.18
♘h3	222	45%	-0.37

Chess King's GigaKing database, which consists of nearly five million games, has been merged together into a single tree. Here in the standard position for a chess game, we see a list of the moves White has played in the games from GigaKing. We see that the move 1.e4 was played in more than 2 million games from GigaKing. The move 1.d4 appears in more than a million and a half games, and so on. As we make opening moves and “step through” the moves of the tree, we'll see the display change; for example, after we make the move 1.e4, we'll see:



Moves	Positions	Success	Score
c5	997,888	49%	+0.15
e5	581,120	44%	+0.11
e6	323,639	46%	+0.15
c6	173,665	46%	+0.22
d6	108,895	45%	+0.33
d5	90,434	46%	+0.37
g6	70,918	48%	+0.33
Qf6	60,449	48%	+0.29
Qc6	17,711	47%	+0.15
b6	7,263	43%	+0.37
a6	1,865	45%	+0.26
g5	248	35%	+0.76
Qh6	96	34%	+0.60
f5	93	32%	+1.02
h6	79	47%	+0.29
f6	60	34%	+0.72
a5	51	35%	+0.41

...which are Black's replies to 1.e4. In this particular display, the moves are ranked in order of popularity; we learn from the tree that the move 1...c5 (the Sicilian Defense) is by far the most popular reply to the move 1.e4.

What other things can we learn from a chess tree? Different chess programs will provide different information, but most will show you the success rate of every move. After 1...c5 we see a success percentage of 49%. This does not mean that Black wins 49% of the games in which the Sicilian is played. The number refers to the percentage of the available points which were earned by the moving side. When you win a tournament game, you score a point in the standings, but when you draw a game you score just half a point (you split that point with your opponent). Your chess program will look at the games and do some simple bean counting – since the Sicilian was played 997,888 times in the GigaKing database, and since it's Black's move in this position, Chess King totals Black's wins, totals half the number of draws (since they score half a point), adds both numbers together, divides that sum by the total number of Sicilian



games (997,888), and gets the percentage of points which Black won in all games in the database in which the position after 1.e4 c5 occurred.

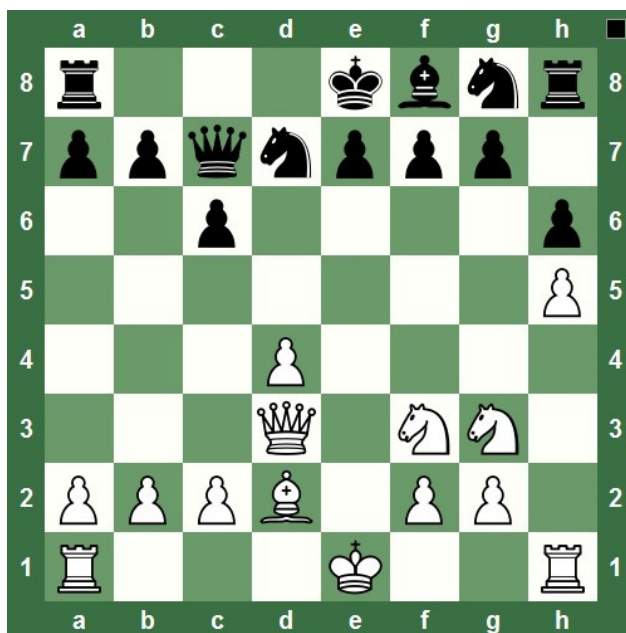
The big thing you need to remember is that the higher the actual percentage is, the better that move did as far as the final game results go. High percentages are good; low percentages are bad.

But (and this is a big “but”) you can't just blindly follow the numbers in an opening tree! If a move was played thousands of times successfully over many decades, it'll have a high percentage. But if just one reply to that move, discovered last year, is a total killer which destroys that variation so that no one will ever play it again, it'll still have a high success percentage in a chess tree because it was played so often before that new move which destroys it (chess players say “refutes it”) was discovered.

So the rule of thumb is to look at the numbers, use them as a rough guide, but always, always, always think for yourself!

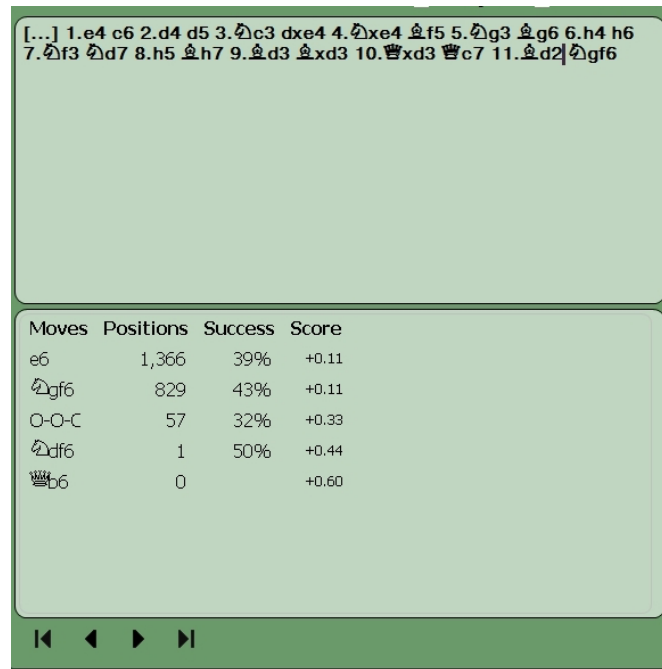
Chess King also offers an additional column, called the “score”. That's an evaluation of the position as generated by a chess engine. This is a useful additional guidepost. Even though 1...c5 earns nearly half of the available points when it's played (it succeeds 49% of the time), it's by no means a “killer move” for Black; in a chess engine's opinion, 1...c5 results in a position which favors White by 15/100ths of a pawn, by no means a major advantage for either player.

Remember our Caro-Kann position from the previous chapter?



1. e4 c6
2. d4 d5
3. Nc3 dxe4
4. Nxe4 Bf5
5. Ng3 Bg6
6. h4 h6
7. Nf3 Nd7
8. h5 Bh7
9. Bd3 Bxd3
10. Qxd3 Qc7
11. Bd2

Let's step through the tree, following those moves, and see what we get when we reach that position:



The screenshot shows a chess engine interface with a move list at the top and a statistics table below. The move list shows a sequence of moves: 1.e4 c6 2.d4 d5 3.♘c3 dxe4 4.♗xe4 ♟f5 5.♗g3 ♟g6 6.h4 h6 7.♗f3 ♗d7 8.h5 ♟h7 9.♟d3 ♟xd3 10.♞xd3 ♞c7 11.♟d2 ♗gf6. The statistics table below lists moves, positions, success percentages, and scores.

Moves	Positions	Success	Score
e6	1,366	39%	+0.11
♗gf6	829	43%	+0.11
O-O-C	57	32%	+0.33
♗df6	1	50%	+0.44
♞b6	0		+0.60

- You'll recall that after 11.Bd2, Houdini 2 recommended the move 11... Ngf6. But that's the second-favorite move on the list right?
- Look closer. While it's played less often than 11...e6, it's performed a bit better statistically than the Knight move. Meanwhile, a chess engine evaluates the two moves as being equal – a bit better than a tenth of a pawn in White's favor, close enough to zero to call the position an even game.
- The tree also shows three other moves, and while 11...Ndf6 scored a 50% success percentage, we need to note that it was played just once, meaning the game was a draw, and that a chess engine evaluated the position as being nearly a half-pawn in White's favor (a nice edge for White). So I think we can safely reject that idea.

That brings us to another important point: when looking at a move's statistics in a chess tree, take any “success” numbers with a big dose of salt if that move has been played very few times. In the case of the aforementioned 11...Ndf6, it scores well for White according to a chess engine, but the game was still a draw – it's entirely possible that Black squeaked by with a draw because of a White mistake later in the game. It's just another example of why statistical data should be used as a guide, a signpost, but it's never the last word – you should always think for yourself!

# A SHORTCUT FOR SETTING UP OPENING POSITIONS

We learned about setting up positions in Chapter 8. If you're setting up an opening position (like the Caro-Kann variation we were just looking at), you can often use an opening tree as a way to set up the position quickly; in fact, it's how I set up that very Caro-Kann position. Many chess programs will let you click or double-click on a move in a chess tree to make that move on the board. So I just stepped through the opening tree move by move until I got to the position after 11.Bd2. Bingo! Easy position setup!

# LEARNING THE OPENING CODES

There exists a five volume encyclopedia containing hundreds of thousands of chess openings, which you can buy as a set of books or on disk; not surprisingly, it's called The Encyclopedia of Chess Openings (or ECO, for short). Every possible chess opening variation is classified into one of 500 different opening groups, each of which has an alphanumeric designation, such as B12 or C68. The letter refers to which of the five volumes (A through E) the variation appear in, with the number referring to which of that volume's one hundred groups (00 through 99) the variation is sorted into. These alphanumeric designations are referred to as "ECO codes".

While I'm sure that a few brainy mugs know by heart which openings fall into which classifications for all 500 codes, that's far beyond the memorization skills of most of us. As time and your chess career go on, you'll learn the ECO codes for the openings you most often play, such as (in my case) B21 for the Smith-Morra Gambit or C68 and C69 for the Ruy Lopez Exchange Variation. To look up games by opening from a database (which we'll learn about in the next chapter), you'll often need to know the ECO code for a particular opening.

But what if you don't know it?

Many chess playing programs will display the ECO code somewhere on the screen after you input some opening moves (or, as we've just seen, use the opening tree to step through some moves). For example, after I stepped through those Caro-Kann moves from our example game in Chess King, the program displayed this in a box right above the chess board:

**B19 Caro-Kann: Classical, Spassky, 10.Qxd3 Qc7 11.Bd2**

**...which gives me not only the variation's ECO code (B19), but also a name for the variation (Classical Variation, Spassky line – named for former world chess champion Boris Spassky).**

That's a handy trick to know, especially when we get into the next chapter. There are also a number of Internet sites which list ECO codes. By far the best source of these codes (aside from the Encyclopedia itself) is a book by Roy DeVault called Chess Openings Lexicon, which lists the ECO codes and the specific variations they cover, along with the less often used NIC (New in Chess) code for each variation, too.

## OTHER CHESS TREE TRICKS

Some programs provide tools for you to create your own chess trees. This might involve creating trees by hand (a move at a time) or by merging games from a database. Either method works well for creating your own opening books based on one specific opening. You could manually input a couple of dozen variations in, say, the Queen's Gambit Accepted. Then you could load that tree as your program's default opening book to force your chess engine to play nothing but the Queen's Gambit Accepted; which is really handy when you're learning the basics of a new chess opening.

There's an even cooler trick you can try in programs which allow the merging of database games into an opening tree. Pick a favorite player and search for all of his or her games playing one color; for example, you could do a search for all of José Raul Capablanca's games as Black. Merge those games into an opening tree, load it as your chess engine's default opening book, and then play the other color; if you've created an opening tree of Capablanca's games as Black, you'd play the White pieces. Of course, it's not possible to actually play against Capablanca, but this is the next best thing: playing against Capablanca's opening repertoire.

## FOR MASTERS AND GRANDMASTERS: SPYING ON YOUR OPPONENTS

That last tip works exceptionally well for professional players (or even amateurs who play at the master level). Since many games played at your level are published (either in print or in Internet databases), you can easily perform a database search for all of a particular player's games of one color and merge them into a tree. You'd then step through the tree while keeping an eye on the opening statistics. You're looking for openings in which your potential opponent scores badly, or for "gaps" in that player's repertoire – openings that he or she doesn't play. For example, your opponent might score badly as White vs. the French Defense, indicating that you should consider playing it as Black if you face that player in an upcoming event. Likewise if your opponent never responds to 1.d4 with the King's Indian Defense, you probably shouldn't worry about playing against that opening if you have the White pieces.

Of course, none of this means that your opponent hasn't changed his or her repertoire recently and is waiting to spring something new on you in his/her next event. So my earlier warning still stands – take what you find in an opening tree with some measure of salt!

# SPOTTING YOUR OWN WEAKNESSES

You can use that same technique for spotting your own weaknesses in the openings. What you discover might surprise you; the first time I did this with my own games, it sure shocked me.

Do a database search for your games with the White pieces and merge them into a tree. Do the same for your games as Black. Open each tree and look at the numbers (it's one of the few times that you can actually take a tree's statistics at face value); look for openings in which you score very poorly. You should go back and study some basic ideas in those openings, and maybe a couple of main variations to reinforce those ideas.

Then you should reload the program's comprehensive opening tree and step through your games using those "bad" openings; in games where you deviated in the opening, the moves in large tree will show you what you should have played.

# CHAPTER 10

## A chess library on your computer

- Basic game searches
- Combining search terms
- Garbage in, garbage out
- The law of diminishing returns
- Why you need a chess database

# A CHESS LIBRARY ON YOUR COMPUTER

“This program has a database of five million games. Big deal – I'll never play through all of those games anyway.”

Every time I hear this, I do a facepalm. Nobody expects you to play through all of them. The point is that the games are there for you when you need them -- and having more games means a bigger library, which gives you a better chance of finding the material you need for your chess studies, such as games by a particular player or which feature a particular opening.



# BASIC GAME SEARCHES

Chess programs which provide large game databases will also provide you with tools to search that database (some people like to call it “mining the database” or “data mining”. I'm not a huge fan of data “mining”, because wearing that hardhat with the flashlight interferes with the headset I wear to block out the noise from the family watching television. I don't “mine” my databases; I search them). The specific tools you'll use, in this case the variety of searches you can perform, will vary from program to program. At the minimum you should be able to search a database's games for players and chess openings.

Your chess program's help file or manual will provide specific details on the type of searches you can perform and the method for using the search tools. But there tend to be some common features which will apply to all programs. The most common database searches many players perform are searches by player name and chess opening.

When you search a database for a player's name, type his or her last name first, followed by the first name's initial or the entire first name. Think of it like using a telephone book – if you're looking for “John Smith”, you'd look under “S” (not “J”) for “Smith,John”. Chess databases work the same way. Type the last name first. As far as the entry method for a first name or initial, different programs do this different ways; I've seen programs which provide a separate box in which you'd type the first name, others which require a comma followed by the first name in the same box as the last name, and still others which provide a drop-down menu of first name choices based on what's in the database.

You'll also typically see two fields in which you can type a player's name, one field for White and one for Black, with a separate toggle for turning the “color specific” feature on and off. With the feature turned on, you'd type a player's name in the box beside “White” or “Black” to get only the games in which the player had that color; with it turned off, you can type a player's name in either box to get all of that player's games, regardless of what color he or she played.

After you enter a player's name, you'll click a button to start the search. Chess playing programs (as opposed to the more sophisticated chess database applications) generally don't display the search results in a new window, but will “mask” games which don't meet your search criteria, showing you just the games which do match what you searched for. The length of time this will take depends on the size of the database, the speed of your computer's processor, and the manner in which the data is encoded, but generally shouldn't be more than a few seconds for simple searches. You can then load a game from the list (usually by double-clicking on it) and replay it on the program's chess board.

Searches for games of a specific opening are also regularly performed by most chess players (mainly because players tend to spend far too much time studying the opening, but that was mentioned earlier). Most chess playing programs allow you to search for openings by ECO code (described in Chapter Nine, along with tips for finding codes you don't already know). You'll just type the ECO code in a box, click "Search", and the program will pull up all of the database games which are identified as falling under that ECO classification.

Some programs will offer two boxes for opening searches, which allows for a search which covers a range of consecutive codes. For example, the Petroff Defense (1.e4 e5 2.Nf3 Nf6) falls under two separate ECO codes, C42 and C43. You would type "C42" in the first box and "C43" into the second, then do the search and see a list of all of the Petroff Defense games from the database.

As noted, different chess playing programs offer different database search tools, some more elaborate than others. In addition to player and opening searches, most also allow searches by year, result, and player rating. Others add factors such as length of game, tournament name or geographic location of the event, and sometimes even specific board positions. The more comprehensive (and much more expensive) database programs provide an even bigger variety of search terms, including maneuvers (specific piece moves) and material balances (two Rooks and three pawns vs. a Queen and one pawn, for example).

## COMBINING SEARCH TERMS

You can combine search terms when looking for games in a database. For example, you can type on player's name into the "White" box, another player's name into the "Black" field, and the program will show all of the games in which those two players faced each other. You can specify the colors they played, as well, so you can get all of the games in which Player A had the White pieces while Player B played Black.

Another commonly searched combination is "player and opening". For example, Garry Kasparov was well known for playing the King's Indian Defense at one time, so you could search for his name under "Black" and the ECO code range from "E60" to "E99" to see all of his games in which he played the Black side of the K.I.D.

The more search terms a program offers, the more specific your searches can be. But there are a couple of pitfalls you should be aware (or just beware) of...

# GARBAGE IN, GARBAGE OUT

Years ago, when I worked in an automotive parts house, I had a customer come in and ask for a fuel filter. I looked it up for his vehicle, pulled it from the shelf, and when I brought it back to the counter he told me it was wrong, it didn't look right. When he described the appearance of what he wanted, I realized he wanted an air filter, not the fuel filter he'd asked for. His reply? "Don't get me what I asked for – get me what I want!"

There's an old computer programming term called "GIGO", which stands for "garbage in, garbage out". It's a reference to the fact that computers can only look for what you can tell them to look for; they can't make intuitive leaps as to what you may have actually meant instead. If you type the wrong thing in a search field, you'll get the wrong thing (or nothing) back from the computer. Garbage in, garbage out.

I remember a chess software customer of mine who reminded me of that old parts customer. I received a very irate phone call from this guy, angry that we'd sold him a multi-million game database which, the customer claimed, "contained no games by Bobby Fischer". I asked him what he was typing in as a search term (figuring that he was using "Bobby" instead of "Robert"). No, came the reply, he was using "Robert" as the first name – still no "hits". I smiled to myself and asked him to spell Bobby's last name.

"F-i-s-h-e-r," he said.

"There's your problem," I told him, "You spelled it wrong."

"Well, it's a chess program – it should know what I want!"

Nope, sorry, it doesn't work that way. Besides, there actually is a "Robert Fisher" (no "c") in my chess database; he competes in Australia and is rated in the 1800 Elo range. A piece of software can't figure out which guy you mean; it can only find what you ask for. And if I was actually looking for the games of that Australian player, I'd be pretty hacked off if my chess program insisted that I wanted the ex-world champ's games instead. It'd be like this one time when I went to a burger joint and specifically said that I didn't want cheese on my burger – and they kept giving me a cheeseburger. ("No, you want cheese – cheese is good," the woman at the grille kept insisting. True story.)

Making a long story short, you need to be careful when you're preparing a search. Make sure that everything is spelled correctly, names are capitalized, you've used a capital letter and just two digits in an ECO code. Remember: if you put garbage in, you get garbage out.

# THE LAW OF DIMINISHING RETURNS

I've seen chess database users make another kind of mistake (more than once) when they're thinking that they have to fill in all of the search terms a program provides. A related mistake is when a user thinks that the more information you put into your search, the more information you get back; in fact, just the opposite is true.

I call it The Law of Diminishing Returns. The more search fields you fill in, the more specific you're making the search – and you'll get back less information as a result.

Here's an example using Chess King's GigaKing database. I can do a search for the games of Mikhail Tal and get 2,226 “hits” (games from the database). When I add a new criterion to the search by specifying his games as White, I get fewer hits: 1,417 games.

I'll narrow this down more by looking for games he played as White against Mikhail Botvinnik; I get twenty-three games back from the GigaKing database. If I add a year to this, say 1960, I get eleven games. And if I add a range of ECO codes (C00-C99, for the whole of Volume C of ECO), I get just one game – the first game of their 1960 World Championship match.

So don't go crazy with the search terms. Just ask for the bare minimum that describes what you're looking for; if you wind up with too many hits (thousands of games), you can always narrow it down a bit at that time by adding additional search terms.

## WHY YOU NEED A CHESS DATABASE

Players who have never used a database are always asking me why they would want one. “What's the advantage of using a database?”

The fact is that nearly every player is already using a database, only they don't know it. That shelf full of chess books? That's a database. And I wish I had a dollar for every time I heard something like, “I was digging around last night trying to find Anderssen's 'Evergreen Game' so I could replay it – it took me a half-hour to find it”, or “I went through twenty volumes of the Informant and a few NIC Yearbooks last night looking for Caro-Kann Advance Variation games. It took me two hours, but I found about fifty of them. I couldn't decide which ones to play, so I said the heck with it!”

Using a chess database, I can find Anderssen's “Evergreen Game” and play through it on my computer screen in less time than it takes you to

find it in a book. In the two hours it took that second guy just to find fifty Caro-Kann Advance games, I can find many more than that, and play through a couple of dozen of them.

In the limited time you have available for chess study, which would you rather do? You could spend an hour looking through books to find a few games you'd like to play. Once you find some, you can then set up a physical chess board to play through them. Whoops, that first game has some variations included – time to go find a pocket set so you can play out the variations without losing your place in the main game. Oh, and you'll need to set up a new board position on that pocket set each time you play over a new variation. Three hours have passed and you've played through maybe a half-dozen games.

Or you could search a chess database for those same games and find them in seconds. You could play through the same half-dozen games, right on your computer screen, including any variations, jumping back to the main game or to another variation at the click of a mouse, automatically resetting the board each time in the blink of an eye, and do it in less than a half-hour's study time. You've now learned the same things, but in a fraction of the time, leaving you an extra two and a half hours for further study (or to do something else entirely, like watch a movie).

Using a chess database buys you time. You can become a more accomplished player in less time using a database than you ever could without using one. And reviewing the games of other players is an important part of every player's chess development (as we saw in Chapter Three); it's so much easier to not only find games, but find suitable ones which match your study program (like all of Tal's world championship games, or Kasparov's King's Indian Defenses). The possibilities are nearly limitless, so much so that a list of tips and advice for using a large chess database could easily be the subject of a separate book.

No, you won't play through all five million games in a chess database, any more than you'll read every book at your local library. But just as your local library exists to provide you with the books and information you want and need, so does your chess database similarly exist as a library to provide you with chess games to replay, study, and enjoy.

As I said way back at the start of this book, there's never been a better time to be a chess player because of all of these wonderful electronic tools that are now available. In part two of this book, we'll look at how to use the specific features of one of them – a great playing, analysis, and training program called Chess King.

# PART 2

**CHESS KING**  
Software Manual

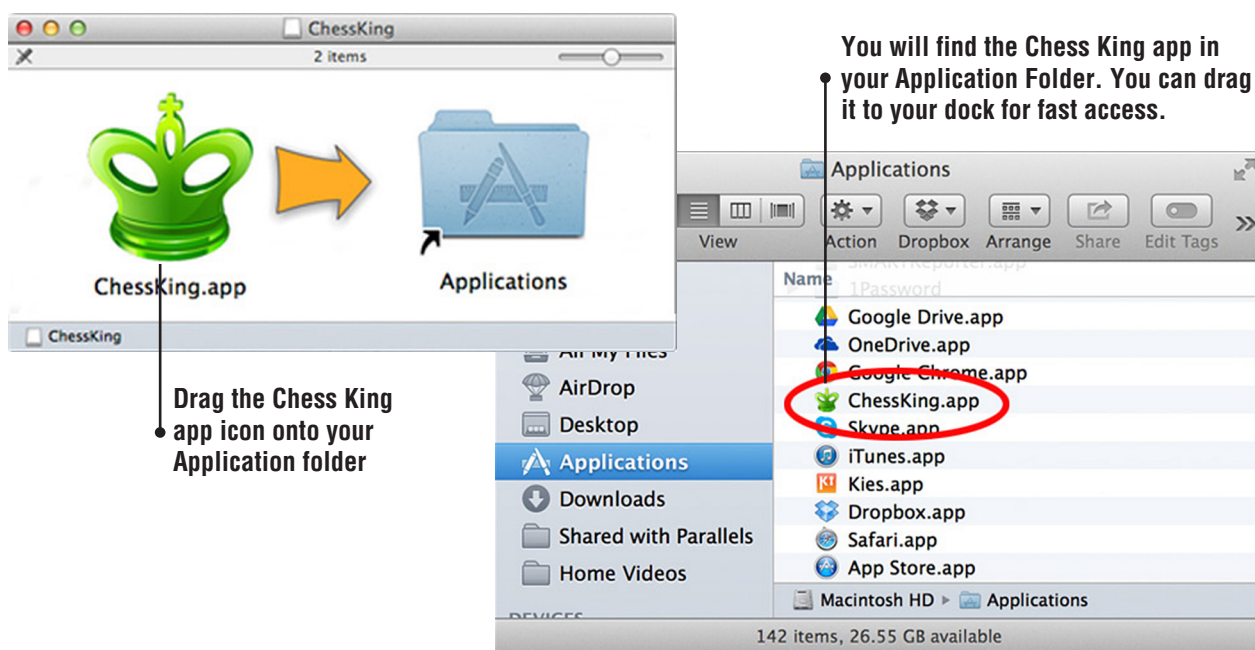
# CHAPTER 1

## Installing Chess King

- **Installing Chess King on a Mac**
- **Installing Chess King on a PC**
- **Creating a user profile**
- **Languages and colors**
- **Sounds**
- **Create your own database**
- **Checking for updates**
- **Endgame tablebases (Chess King Pro only)**

# INSTALLING CHESS KING ON A MAC

If you're doing a clean install, simply copy the app to the Application folder. Launch and follow the instructions in the installation program. You will need your serial number and to have internet turned on when installing. Best to turn off anti-virus software when installing.



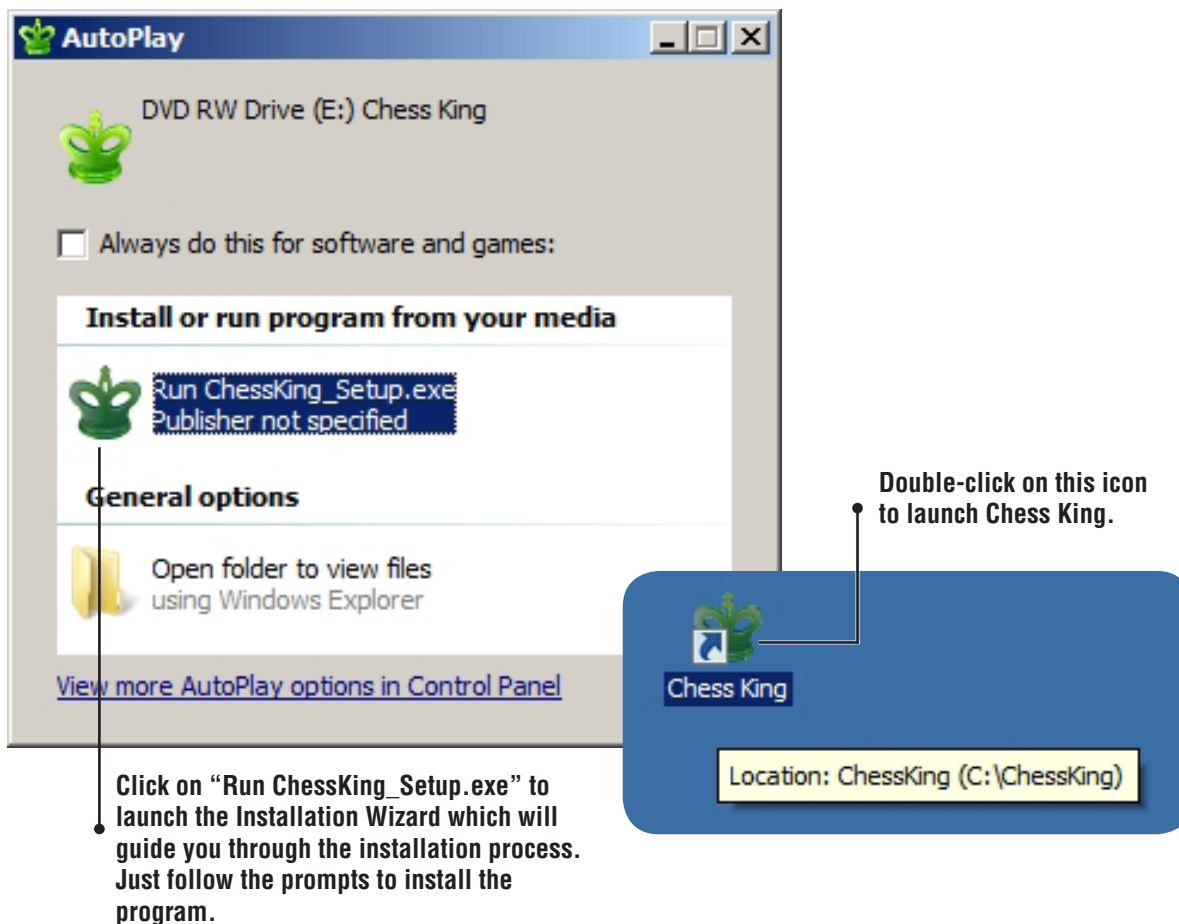
- Make sure your version of Chess King is compatible with your operating system, you can find latest versions and upgrade possibilities (free and major) on [www.chessking.com](http://www.chessking.com). The current newest versions are Chess King Standard, Silver and Gold.
- Since version 4.2 compatible with OS 10.10 Yosemite the games and settings are saved in the Application Support folder which you can find at `~/Library/Application Support/ChessKing`. If you upgrade from an earlier version for example 4.1 (the version on the DVD Chess King 4 for Mac), make sure to run the Chess King Migration Utility before installing the new Chess King 2015 version, this will copy your settings, activation and games to your Application Support folder. You can also export from Chess King and backup your personal games database as a PGN file and save it separately from Chess King. If you already had Chess King 4.2 for Mac then you already have the Application Support Folder and it will not be replaced so you don't have to worry just install the new version. It's a good idea regularly to make a backup of your personal game database in PGN format and if you wish also your folder `~/Library/Application Support/ChessKing`.



- We've partnered with CodeWeavers, makers of the popular CrossOver Mac product, to create this special Mac-friendly version. Chess King for Mac has most of the look and feel of a Mac program, and only runs on Macs. While there are elements of the program that resemble its Windows origins, the program is easy to learn and use. We recommend you watch the 2-hour video tutorial about Chess King on our [YouTube channel](#). It contains pretty much all you need to use Chess King.
- Keep your serial number in a safe place. You may have a “full” serial number which allows you to install Chess King on any new computer directly, or an upgrade serial number which requires you to have a previous version installed before you can upgrade, in this case keep both serial numbers safe.
- If you have any issues, questions about installation, or need a new fresh download link, don't hesitate to write to us at [support@chessking.com](mailto:support@chessking.com) and we will help.

# INSTALLING CHESS KING ON PC

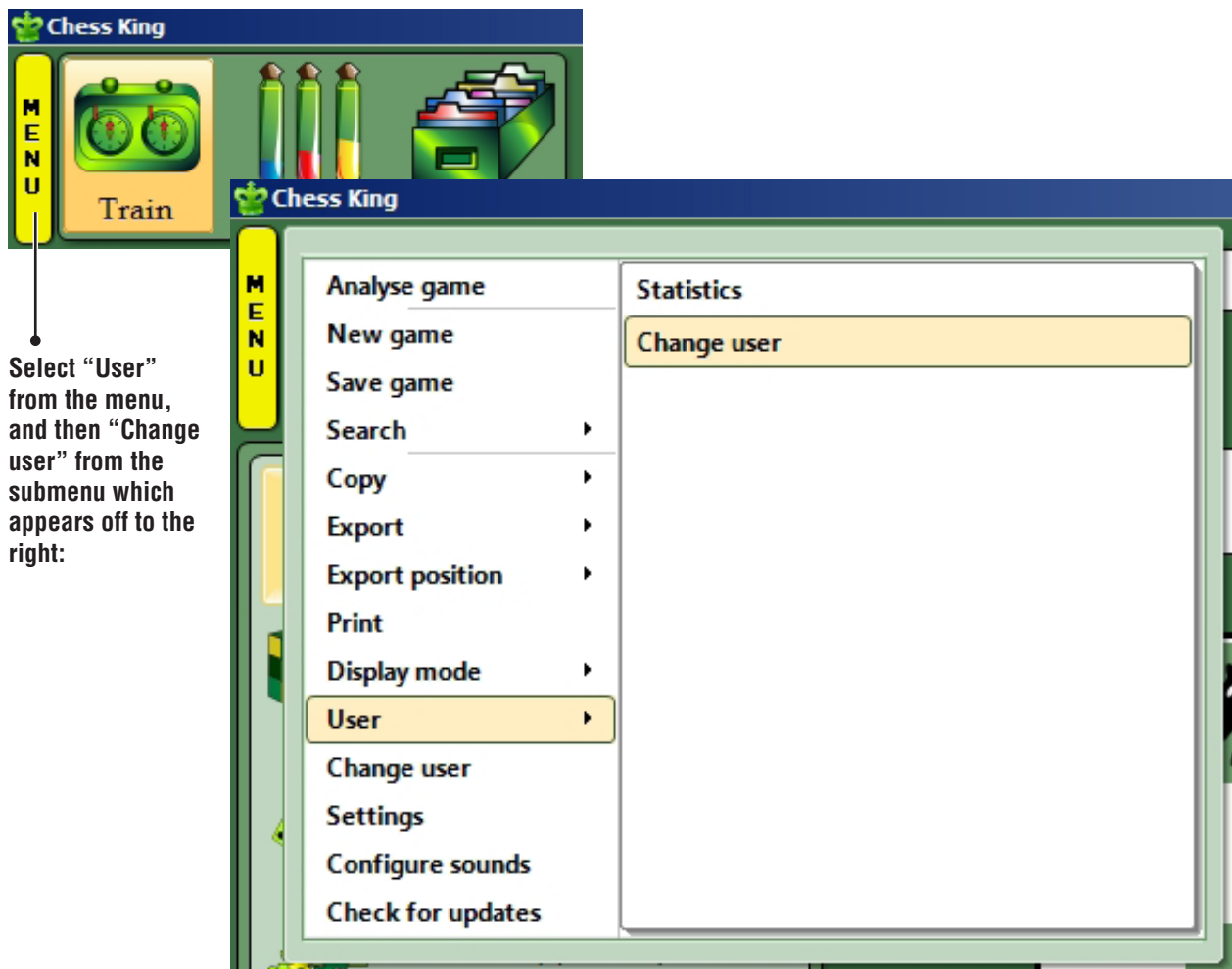
Chess King is straightforward to install. If you have the download version, you have received all instructions which are easy to follow. If you have the DVD version, insert the program disk into your computer's disk drive and wait for the Autoplay pop-up to appear:



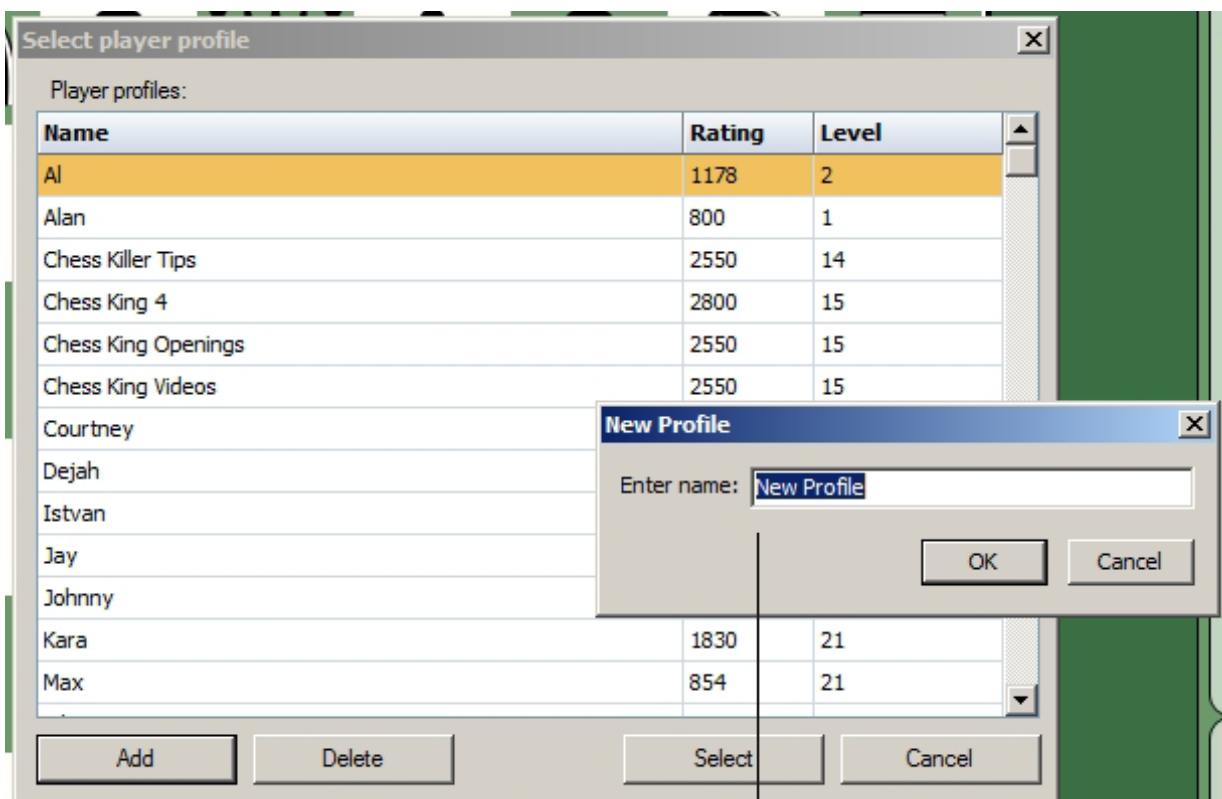
- If you have Autoplay disabled on your computer (or if the Autoplay dialogue doesn't come up), you can double-click on "My Computer" or "Windows Explorer" on your computer's desktop, then navigate to your computer's disk drive, and double-click on the file "ChessKing\_Setup.exe" to launch the Installation Wizard.
- When you install Chess King, make sure you have your serial number handy, that internet is on and no anti-virus program or firewall will hinder the activation of the software. You will only need to do this once and you won't need the DVD for future uses of the program. Make sure to always "run Chess King as admin" so that the engine Houdini may be properly called upon for play and analysis.
- You'll find a new icon for Chess King on your Windows desktop; when you roll your mouse cursor over it, you'll see a pop-up showing the program's location on your hard drive.

# CREATING A USER PROFILE

The first time you run Chess King, you may be prompted to create a new user profile. If not, you can do so by clicking on the yellow button labeled “Menu” in the screen's upper left-hand corner:

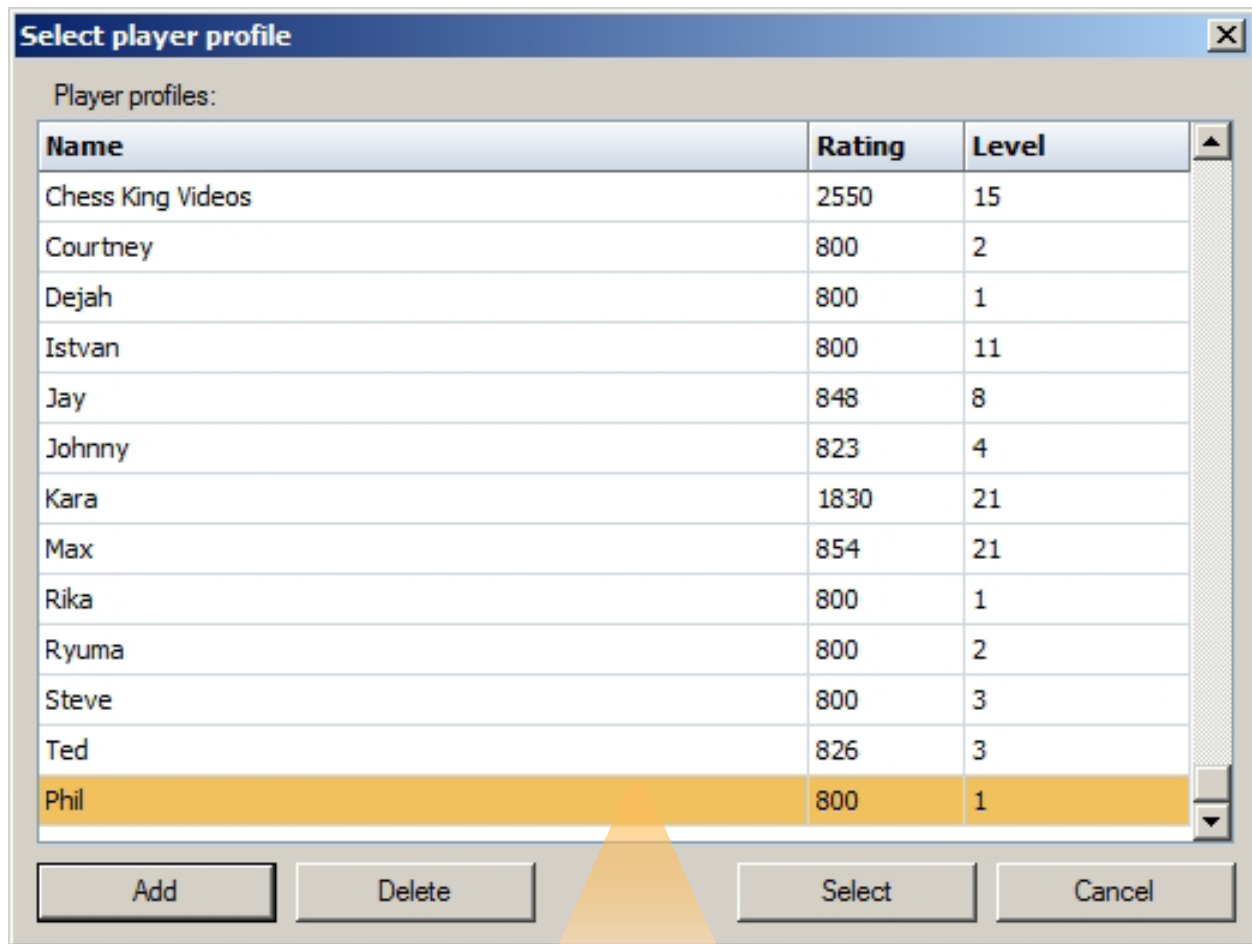


A new dialogue will appear which will list all of the existing user profiles (assuming, of course, that other users have previously created profiles). Click the “Add” button to bring up a box into which you can type your name:



- Type your name in the box:  
...then click “OK”, and you'll see your name appear in the list of user profiles:

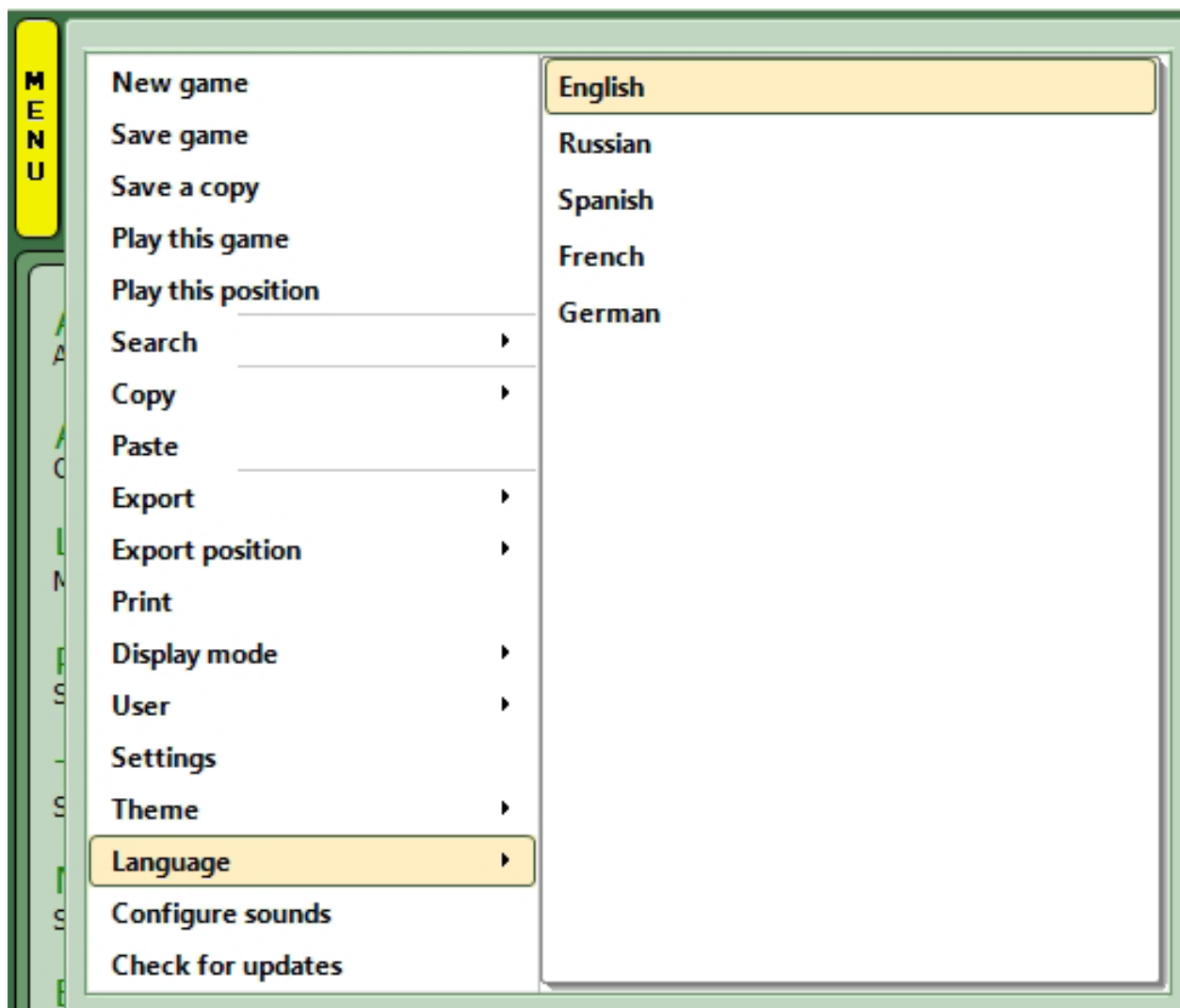
To select your profile from the list, click once on it to highlight it, then click the “OK” button. How can you tell if your profile is currently loaded? Check the panel on the lower right-hand side of the main Chess King screen; the current user profile is displayed there:



- All new Chess King users start out at Level 1 with no experience points and an Elo (chess) rating of 800. Don't worry if you don't understand any of this yet; it will all be explained later!

# LANGUAGES AND COLORS

Chess King gives you a choice of languages for its menus and commands, as well as a selection of colors for the predominant screen color. To change the language displayed on the screen, start by clicking the yellow “Menu” button, then choose “Language”. A submenu will provide you with a choice of languages:



- After changing the language, you'll see a dialogue which tells you that the program must be restarted for the changes to take effect. The next time you launch Chess King, you'll see all of the screen text in the language you've selected.

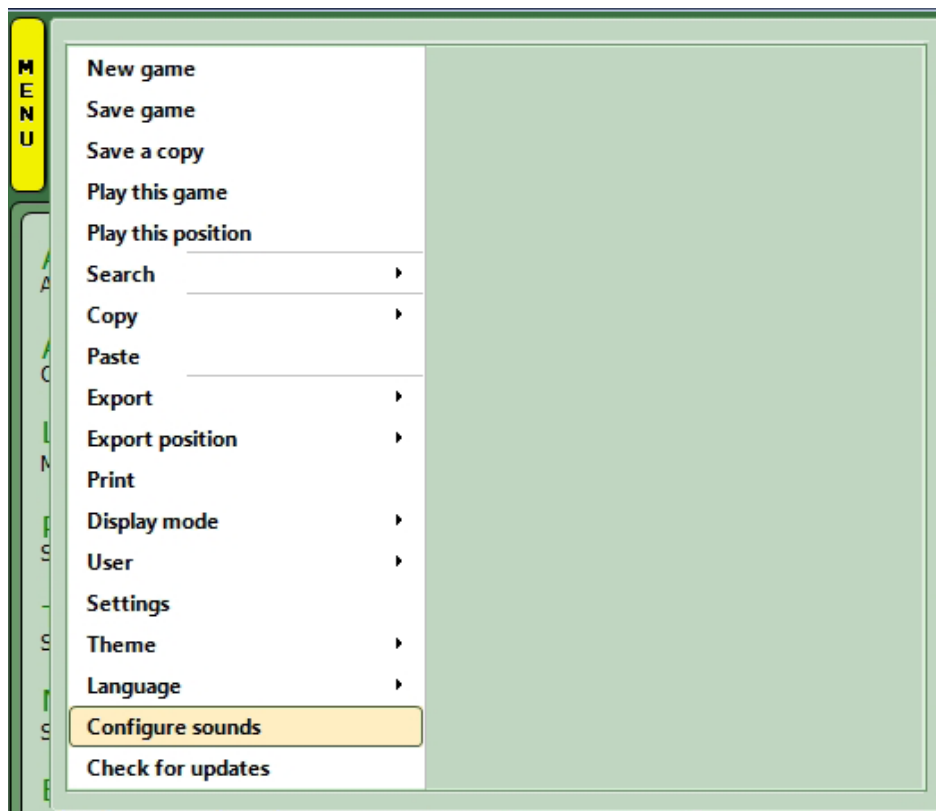
You can also change the main screen color used by Chess King. Click the yellow “Menu” button again and select “Theme”, then pick a color from the submenu:

The image shows the Chess King interface. On the left, a yellow vertical button labeled 'MENU' is visible. A menu is open, listing various options. The 'Theme' option is highlighted in yellow. To the right of the menu, a submenu is displayed with three color options: 'Blue', 'Gray', and 'Green'. The 'Blue' option is currently selected, highlighted in yellow. Below the menu, a smaller screenshot shows the main Chess King interface with a blue theme. A text box with an arrow points to the 'Theme' option in the menu, stating: 'After you select the new color, the screen will immediately change to display your choice:'. The main interface screenshot shows a chessboard with a blue and white checkered pattern, player names 'Fischer Robert J (USA)' and 'Korchnoi Viktor (SUI)', and various game analysis tools.

After you select the new color, the screen will immediately change to display your choice:

# SOUNDS

Chess King has a voice! When you start or exit the program, a voice greets you, and the same encouraging voice provides messages when you are training with Chess King's many chess puzzles (which we'll describe in a later chapter). However, some players may prefer to turn Chess King's voice off. To turn it off, click the yellow “Menu” button and then select “Configure Sounds”:



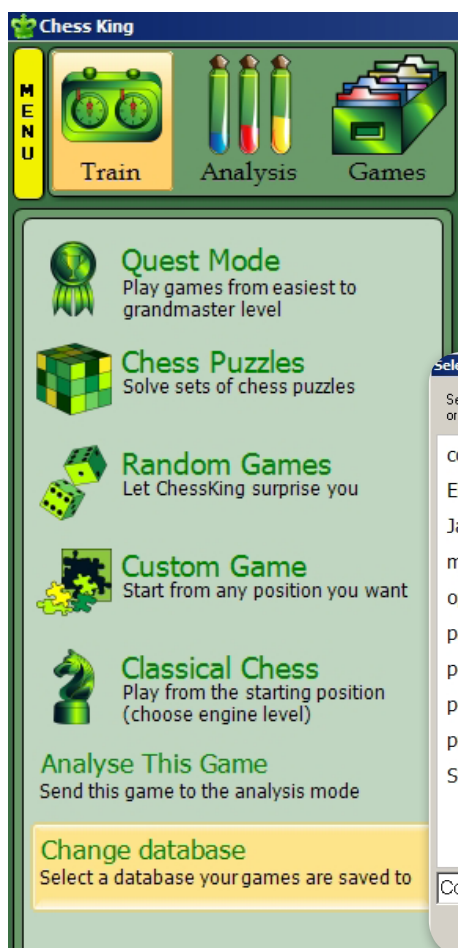
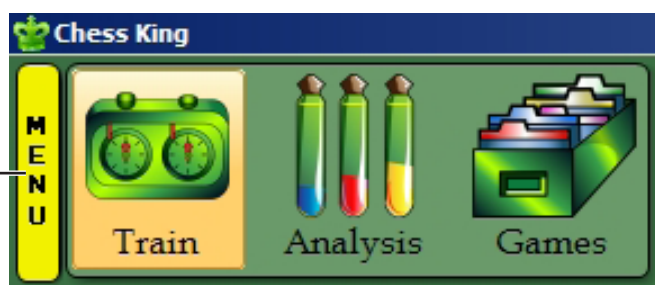
- From the pulldown menu under “Schemes”, select “Union” and then click the “OK” button. This will switch Chess King's voice off.
- You can also click the “Disable all sounds” box at the top of the dialogue to turn off all sounds in the program, including chessboard sounds of pieces being moved.



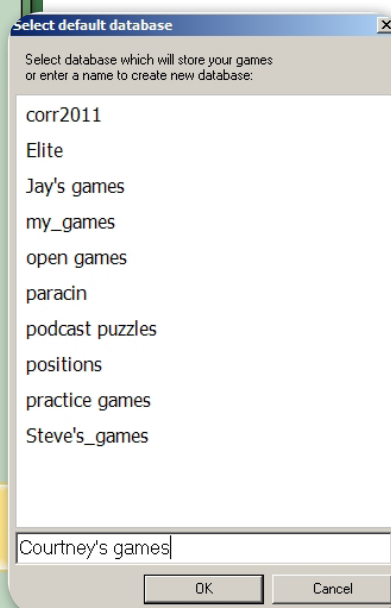
# CREATE YOUR OWN DATABASE

After you've created your own user profile, it's a good idea to create your very own database into which your games with Chess King will be stored. This will keep your games separated from the games of other users who might be working with Chess King on the same computer, and will make it easy for you to find your games when you want to review them. (If you are sure you're going to be the only person using Chess King on a particular computer, you can skip this step. I'll mention more about this at the end of the section.)

Click the large "Train" button from the ribbon near the upper left-hand corner of the Chess King screen (it's right next to the yellow "Menu" button, as shown in this picture):

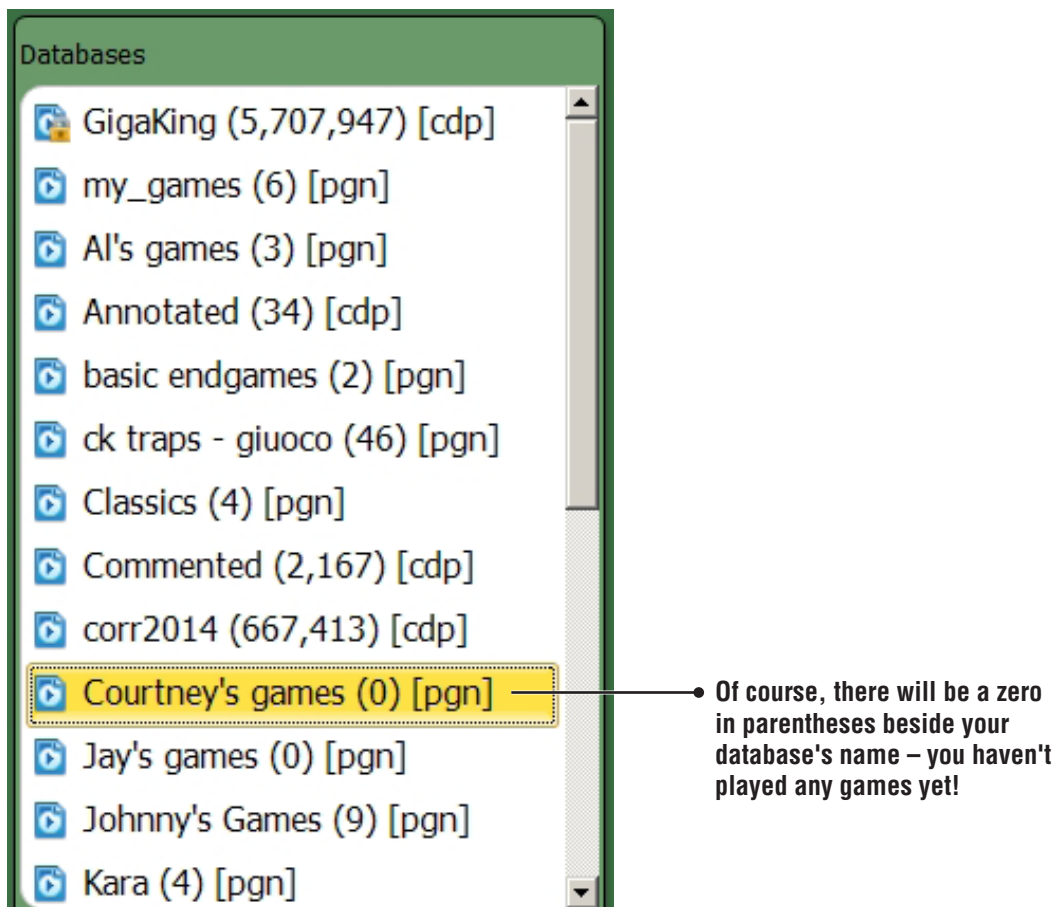


- The Control Panel, the large vertical box on the left-hand side of the screen, will change to display features and commands related to training in Chess King. Find the "Change database" command and click on it:



- You'll see a new dialogue appear, which will list at least one database (and possibly more, if other players are using Chess King on the same computer). Type a name for your database in the box near the bottom of this dialogue:

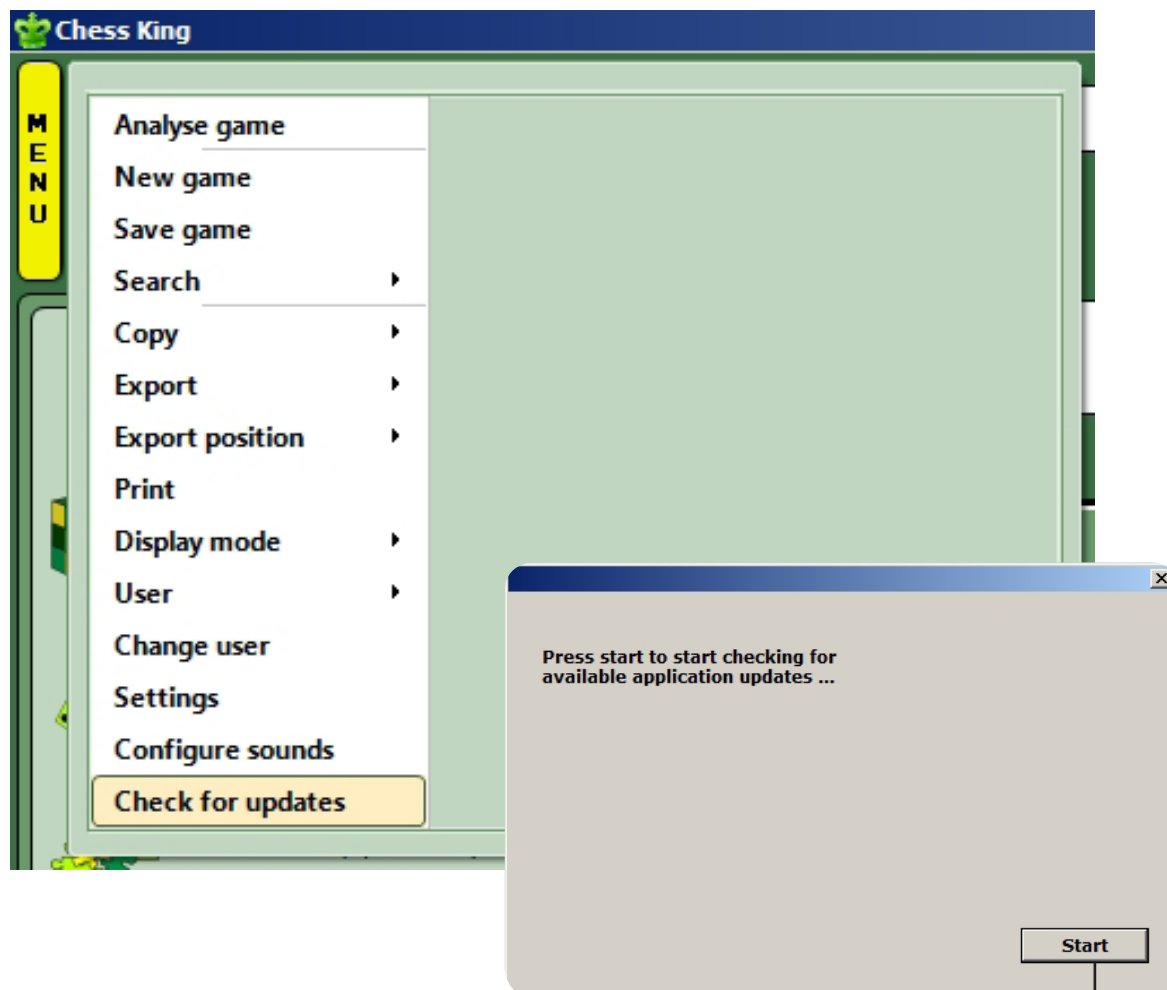
You should make sure your Chess King user name is part of the database name so that you and other players will be able to tell everyone's databases apart. Click “OK” after you've typed a name for your database and a new database will be created for you. If you'd like to double-check this, click the large “Games” button and you'll see your new database in the Control Panel's list:



- As I mentioned earlier, you don't need to create your own database if you'll be the only Chess King user on your computer. Chess King automatically creates a database called “my\_games” and, if you're the only user, Chess King will save your games into that database.

# CHECKING FOR UPDATES

If your computer is connected to the Internet Chess King will automatically look for free updates, newer versions of the program, each time you launch it. But should you want to check for updates manually (say, if you've been using Chess King for several hours and want to check for a new update before exiting from the program), you can click the yellow “Menu” button and select “Check for updates”:



Click the “Start” button and Chess King will look for a new updated version, then report to you to inform you whether or not one is available. If there's a new update, you can install it with the click of a button. If no update is available, a separate display and button will appear to let you close the dialogue box.

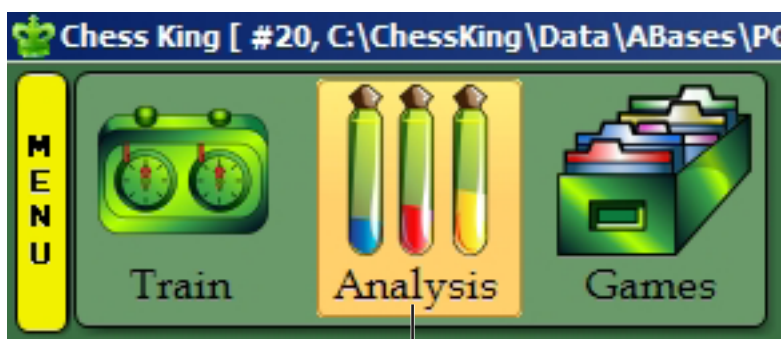
- Check on [www.chessking.com](http://www.chessking.com) for the availability of free updates due to Operating System changes and other non-free major updates to the program. Current users of prior versions always get substantial discounts from list prices.

# ENDGAME TABLEBASES (CHESS KING PRO – GOLD ONLY)

If you own the Pro version Chess King Gold, you also have Houdini 4 Pro, the strongest commercially available chess playing and analysis engine as of this writing. If you also have the Nalimov Endgame Tablebases (available separately as a purchased product or as a free download), you can connect Houdini 4 Pro to these endgame databases, ensuring that your chess engine will play these endgames perfectly.

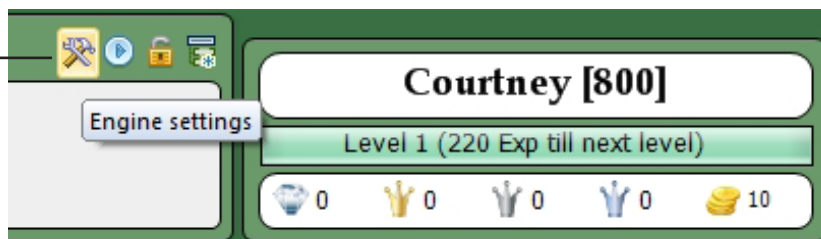
The Nalimov tablebases do not come with Chess King. Several commercial versions are available (such as the Gold Nalimov Tablebases package from ChessOK). If you have a fast Internet connection, you can download the files for free from a number of websites (a Google search should turn up several). The tablebases should be installed or downloaded into the same folder on your hard drive, and you should be sure to have all of the smaller endgames or else the larger endgame won't work properly (for example, if you want to use the four-piece endgame tablebases, you must also have the three-piece tablebases installed or downloaded; likewise, all of the three- and four-piece files must be present for the five-piece endgame tablebases to work properly).

You'll need to “point” Houdini 4 Pro to the folder in which you've stored your tablebase files, and I'll show you how.

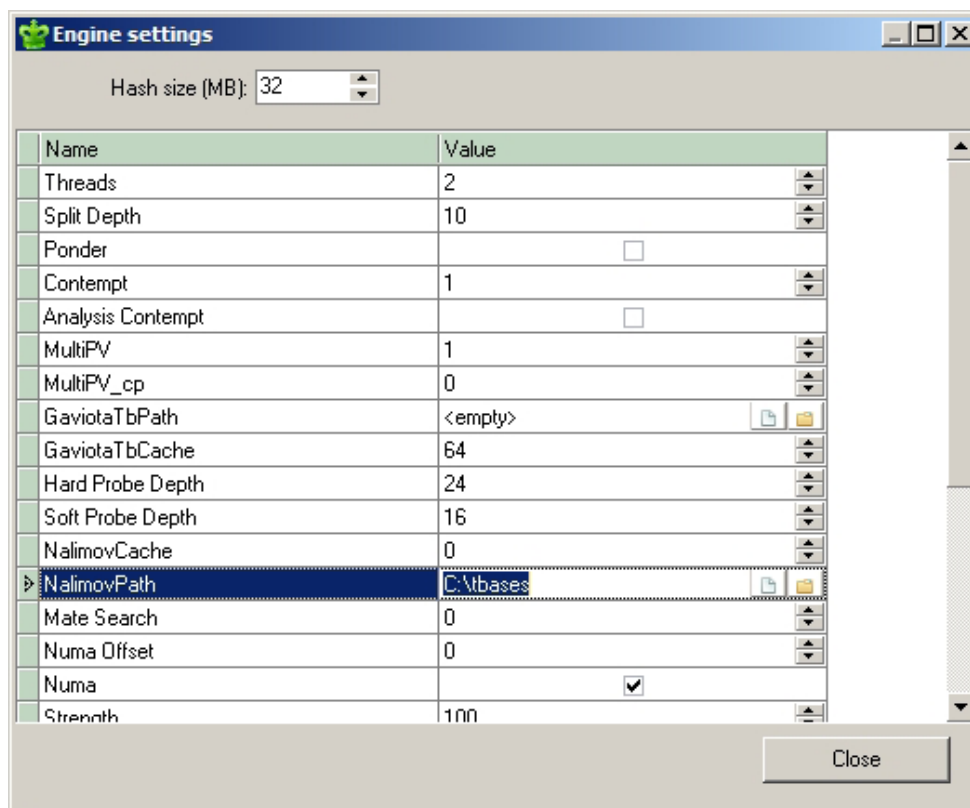


Click the large “Analysis” button near the screen's upper left-hand corner:

- Go to the long panel near the bottom of the screen, and click the small button that looks like a crossed hammer and wrench (seen near the upper left corner of the illustration below):



- This brings up a new dialogue which allows you to change various technical settings relating to the Houdini chess engine. Find the line labeled “Nalimov path”:



- You can use the space provided to manually type the path to the folder in which you've stored your tablebases if you wish. You can also click the small button to the far right (which looks like a manila file folder) to display a dialogue which shows all of your hard drive's folders, from which you can simply select the location of your endgame tablebases. Click close when you're finished.
- Now that the preliminaries are complete, we're ready to learn more about the Chess King user interface (computer talk for the stuff that's on your screen when you're using Chess King!)

# CHAPTER 2

## Getting to know you - the Chess King interface

- The ribbon
- The chess board
- The notation panel
- The chess tree
- The clock
- The control panel
- Description panel
- Analysis panel
- Profile panel
- Now that you're familiar with the Chess King's layout, let's learn about algebraic notation, the “language” of chess.

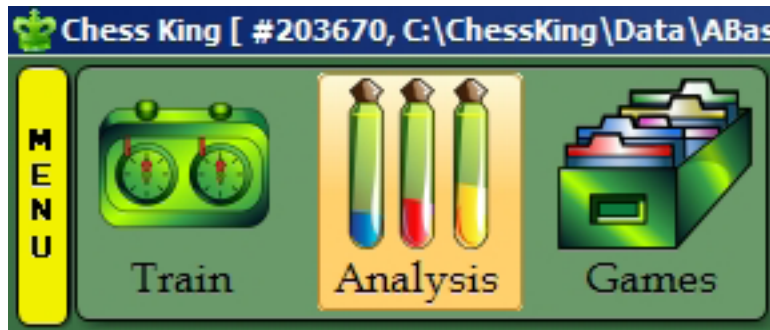
# GETTING TO KNOW YOU - THE CHESS KING INTERFACE



After you've introduced yourself to Chess King by creating your own user profile, it's time to get to know your new training partner. Chess King has a user-friendly design and it should be very easy for you to find your way around. To make things even easier, let's get to know Chess King better by taking a guided tour of the various screen elements and information panels you'll encounter when you're playing and practicing.

# THE RIBBON

The buttons we've already encountered near the screen's upper left corner are collectively called the ribbon. Each button provides access to a variety of Chess King features which are related to that button's function.



- Clicking the **“Train”** and **“Analysis”** buttons changes the list of commands displayed in the Control Panel (see below). Clicking the **“Games”** button changes the entire screen, hiding the chess board and showing a game list instead.

# THE CHESS BOARD

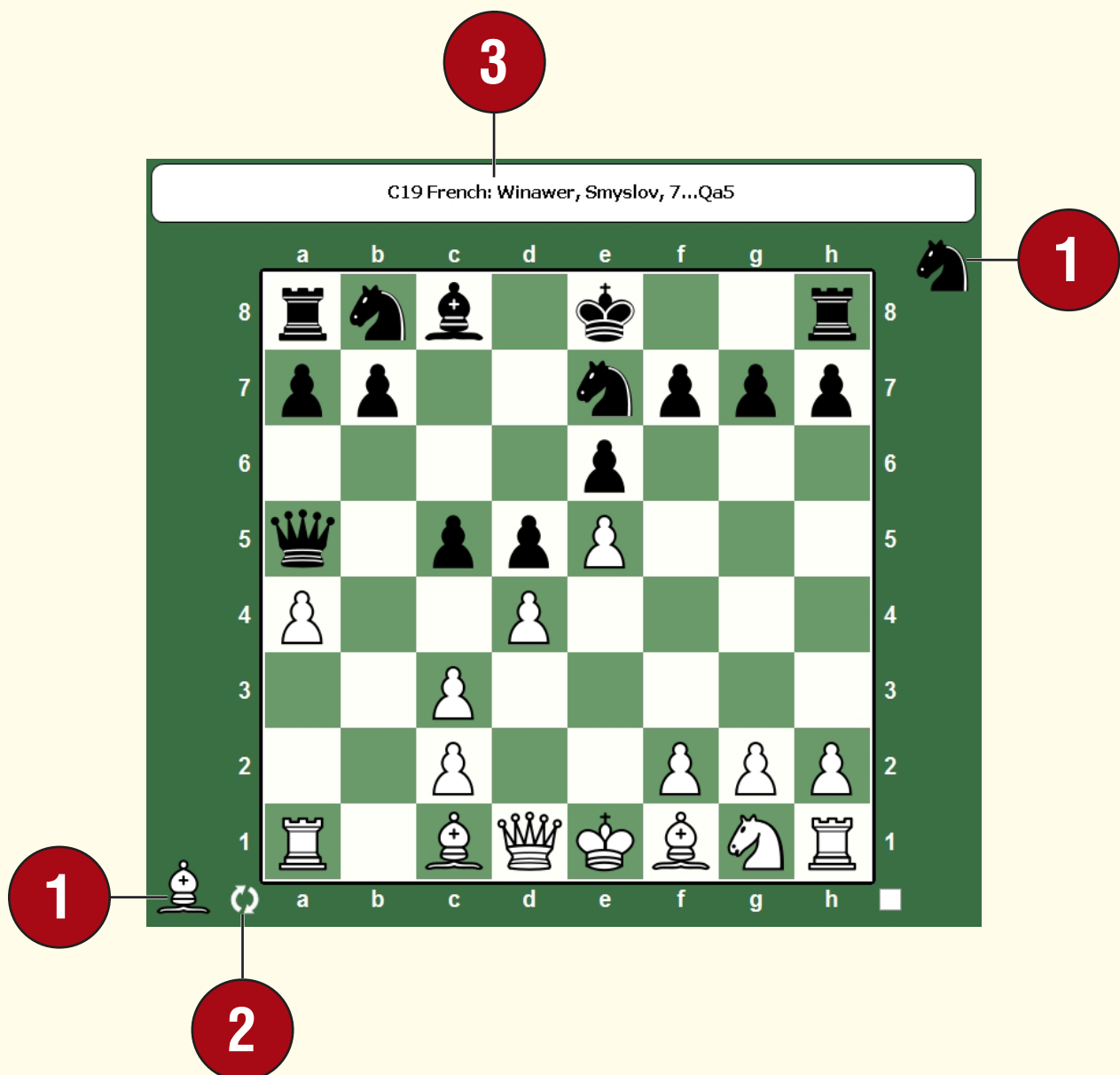
The central feature of Chess King is the chess board (obviously!), which is where you can play your own games or replay games you'll find in databases.

**1** The chess board shows the current position. A small white or black square beside the upper right or lower right corner of the board shows which player's turn it is to move. Chess pieces displayed near the board's upper right and lower left corners show the material balance, which indicates who is ahead in material but also (more importantly) the type of material.

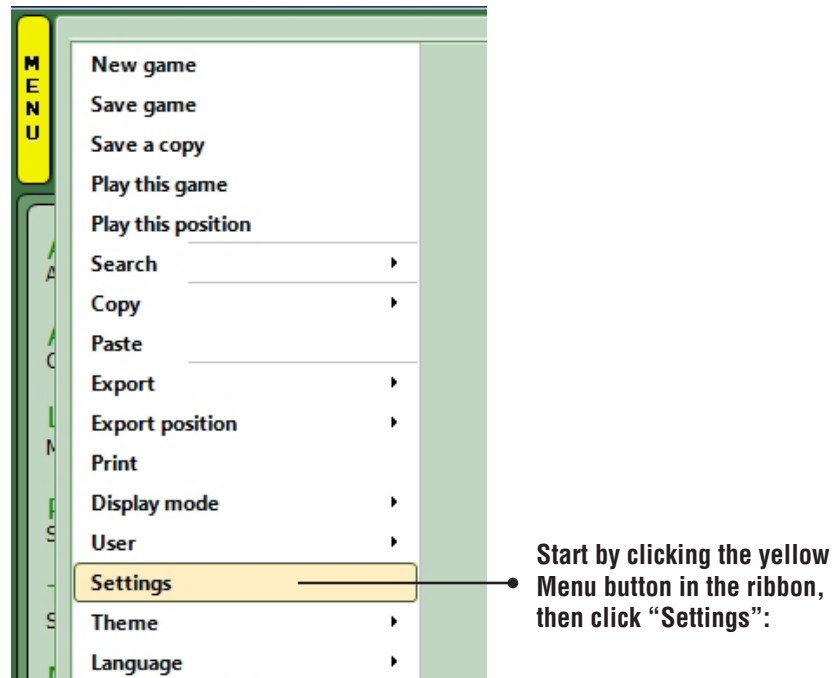
**2** Clicking on the two curved arrows near the board's lower left corner flips the board around, so that you can view the board from the other player's perspective. For example, you might replay a database game in which your favorite player had the Black pieces; you can click this button to flip the board around so that you can see the board the way your favorite player saw it.



**3** The white panel above the board displays the name of the chess opening used in that game. As you play through a game from the beginning, the information in this panel will change to reflect the opening classification of the current board position. An important part of this display is the three character alphanumeric code which appears before the opening's name. This is the ECO (Encyclopedia of Chess Openings) code, which is very useful for searching for games in a Chess King database. We'll examine ECO codes and database searches in detail later.



When you're training and playing with Chess King, there are three ways you can move pieces on the chess board. You can select the method you like from the Settings dialogue.



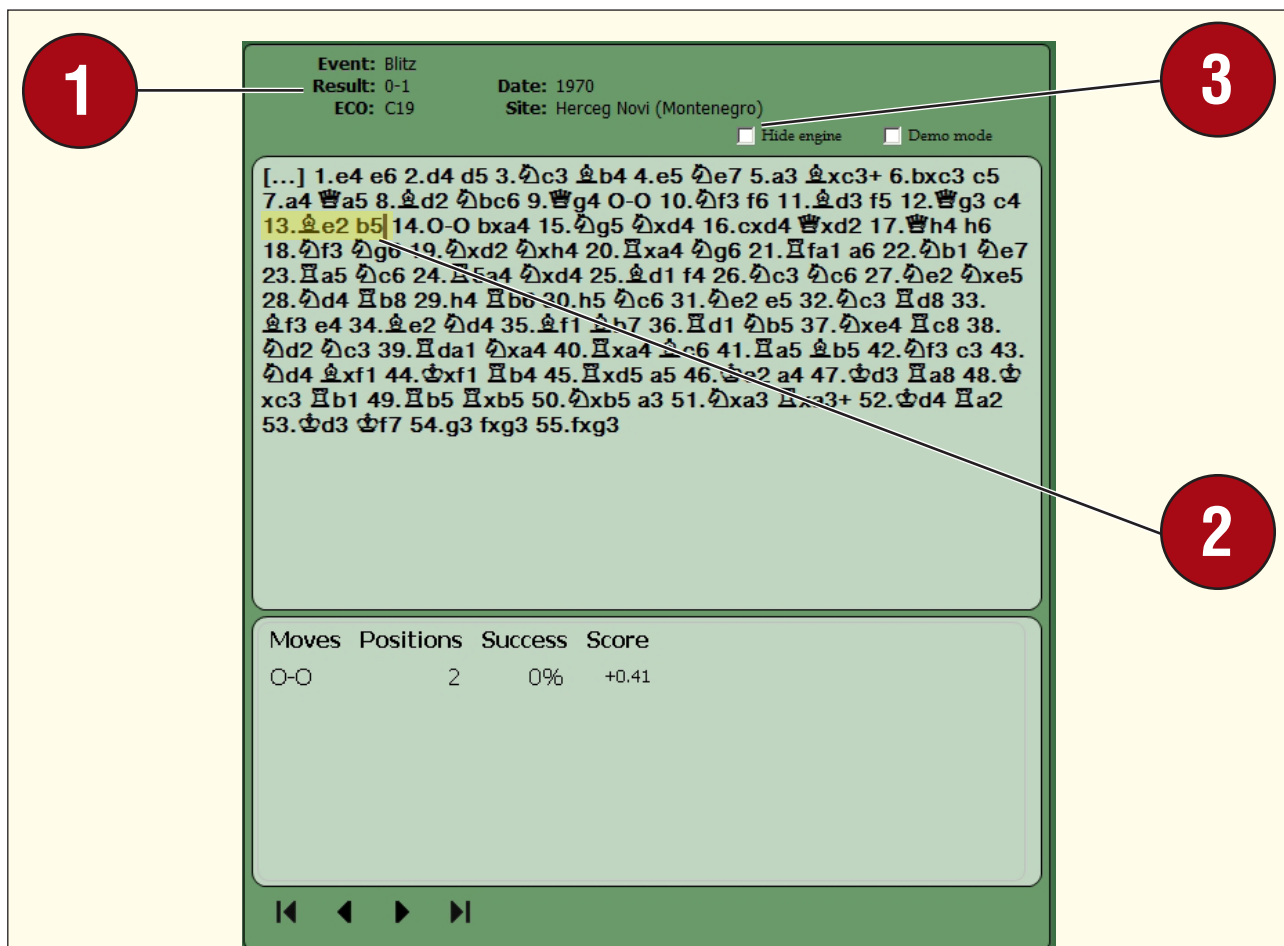
A box near the upper right corner of the Settings dialogue lets you pick your preferred way of moving the pieces:



- **Drag 'n' Drop** – in this method you'll use your mouse to left-click on a piece and, while holding the mouse button down, move the piece to the destination square and then release the mouse button.
- **Two clicks** – to move a piece, you'll click once on the piece you want to move, then click a second time on the square to which you want to move it.
- **Intelligent** – when you select a piece using this method, Chess King will try to guess the proper destination square, highlighting the square to which it thinks the piece should go. If the highlighted square is correct, just release the mouse button and the piece will move to that square. If you want to move the piece to a different square instead, just move the piece to the square and release the mouse button (as you'd do with the “Drag 'n' Drop” method).

# THE NOTATION PANEL

The moves of the current game, whether it's a game you're playing with Chess King or a game you're replaying from the database, are displayed in the Notation Panel. (Don't worry if you don't know how to read chess notation; I'm going to teach you how a bit later.) The lower portion of this panel is the chess tree, which we'll consider shortly.



**1** The top of the notation panel shows the game information: the type of event, the place where it was played, the opening code, and the game's result ("1-0" means White won, "0-1" means Black won, and a pair of "1/2" symbols means the game was drawn).

**2** You'll see the moves of the game in the main box of the notation pane. As you replay a game, the current move (corresponding to the position on the chess board) is marked with a flashing cursor bar immediately after it; in the illustration above, the cursor appears after Black's thirteenth move (13...b5).

**3** You can make the notation panel a bit larger by checking the "Hide engine" box near the top of the panel.

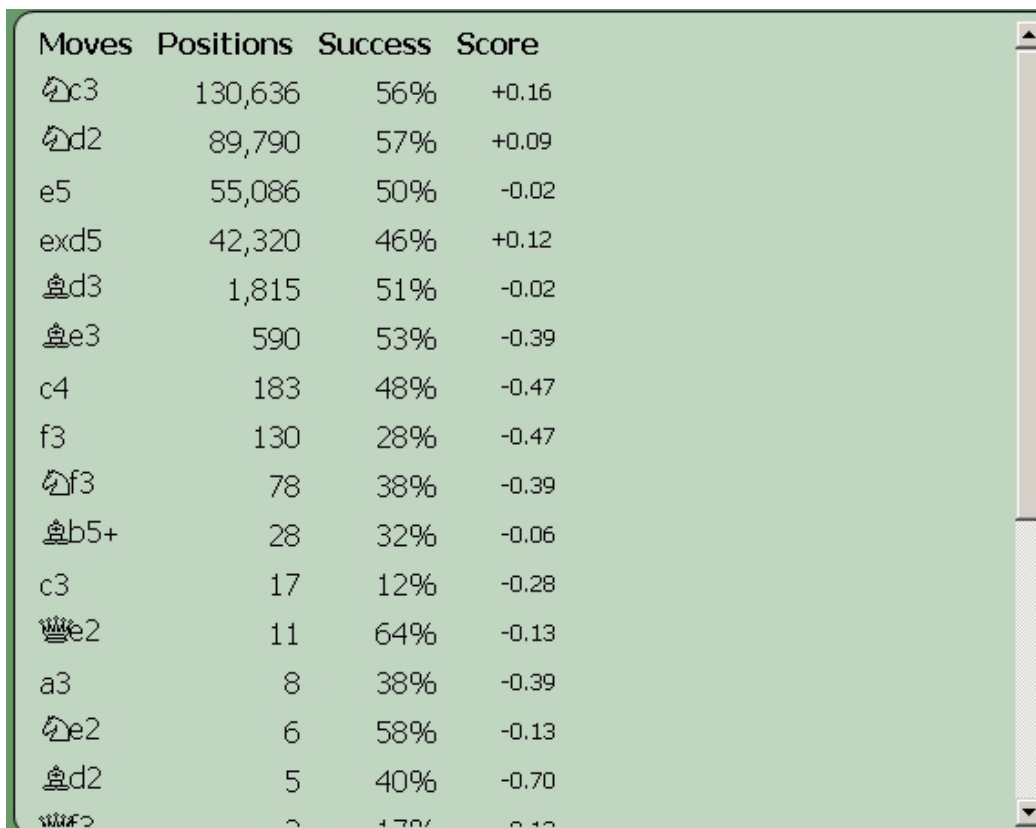
- If you use the mouse to click on a move in the notation panel, the position on the chess board will jump to that position.
- There are two ways to play through the moves of a game. You can use the cursor (arrow) keys on your keyboard: the right arrow key moves forward through the game while the left arrow key moves backwards to previous positions. A second way to play through a game is to use the buttons at the bottom of the notation panel:



- The far left and right arrows (the ones which point at a line) jump immediately to the beginning or end of a game, while the two center arrows move forward or backward through the game a move at a time.

# THE CHESS TREE

The lower portion of the notation panel is the Chess Tree. (If the panel displays a graph, click the “Tree” button to the right of the graph to display the chess tree.) The tree gets its name from the fact that it consists of all of the games from Chess King's GigaKing database (more than 5,000,000 games!) merged together into a single “tree” through which you can explore all of the myriad “branches” (chess variations). The tree provides instant information about the moves played in any position, based on the games from GigaKing. For example, after the moves 1.e4 e6 2.d4 d5 (the French Defense), the chess tree looks like this:



Moves	Positions	Success	Score
♘c3	130,636	56%	+0.16
♘d2	89,790	57%	+0.09
e5	55,086	50%	-0.02
exd5	42,320	46%	+0.12
♙d3	1,815	51%	-0.02
♙e3	590	53%	-0.39
c4	183	48%	-0.47
f3	130	28%	-0.47
♘f3	78	38%	-0.39
♙b5+	28	32%	-0.06
c3	17	12%	-0.28
♙e2	11	64%	-0.13
a3	8	38%	-0.39
♘e2	6	58%	-0.13
♙d2	5	40%	-0.70
♙f2	2	100%	-0.13

- We can see at a glance that the move which was most frequently played here is 3.Nc3, which appears in more than 130,000 games in GigaKing.
- Note that you can make the tree portion of the notation panel larger or smaller by “grabbing and dragging” the tree's upper border (clicking on it with the left mouse button, holding down the button, and dragging the border up or down). You can also use the scroll bar located at the right of the tree to scroll the display up and down.
- We'll look at the chess tree in greater detail a bit later on.

# THE CLOCK

When you're playing a timed game with Chess King, each player's time is displayed near the top of the screen:



Later, we'll learn how to set the chess clocks.

# THE CONTROL PANEL

The large vertical panel at the left hand side of the screen is known as the Control Panel. This is an important work area in Chess King; this is the panel where you will select most of the program's features to use them.

The contents of the control panel will change depending on which button you've selected from the ribbon, and then again with each feature you selected from the control panel.

A screenshot of the Chess King interface. On the left is the Control Panel with a 'MENU' label and buttons for 'Train', 'Analysis', and 'Games'. The 'Analysis' button is highlighted. The main area shows the 'Analysis' ribbon with options: 'None', 'Draw Marker', 'Erase Marker', 'Erase All Markers', 'Area' (set to 'Red'), 'Move comment', and 'After move comment'. A text box at the bottom left of the screenshot says: 'Clicking on the "Annotations" feature in the control panel changes the panel again to show the tools you can use to add comments to your games:'. A green callout box at the bottom right says: 'Clicking a button in the ribbon always returns you to the main list of features which are grouped together under that button.'

- Here's an example. When you click on the ribbon's Analysis button, you'll see the following features (all of which are related to game analysis) displayed in the control panel:
- When you've finished adding comments, you can click on the Analysis button again to return to the main list of analysis features. That's an important tip for successfully using Chess King, and bears repeating:

# DESCRIPTION PANEL

Oftentimes when you select a Chess King feature, or even just roll the mouse over a part of the screen, you'll find helpful information in the Description Panel in the screen's lower left hand corner, right below the control panel. For example, rolling the mouse over the "Position setup" command (listed in the control panel after the Analysis button is clicked) will display this information in the description panel:

Setup position to analyze: setup pieces, castling, en passant line, and other options

4 pieces for program  
Average ELO level: 900  
You are playing **White**  
👑 **Gold III ( Quest level: 9)**  
Time: 00:04:36, Moves: 69, Hints percent: 0

- Many of the games in Quest mode or the puzzle groups under Training give more information in the description panel:

- ! You should get into the habit of looking frequently at the description panel for more information about a particular Chess King feature.

# ANALYSIS PANEL

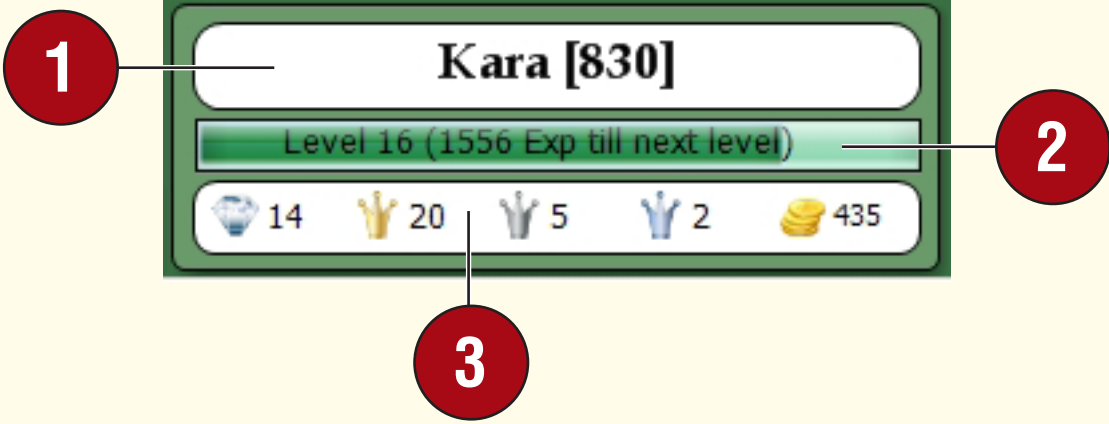
The long panel at the bottom of the screen is where the chess engine Houdini (the "chess brain" of Chess King) shows you what it's thinking:

```
Houdini 2 Pro is analyzing Best score: -2.31, time: 57, depth: 21  
♠/—+ -2.31 28...♞b8 29.h3 ♖f7 30.♞4a2 g6 31.♟e2 ♞b6 32.♞a5 ♖f6 33.h4 ♞b2 34.♞e1 g5 35.h5 ♟b7 36.♟d1 ♞b6
```

Later on we'll learn what this information means.

# PROFILE PANEL

The lower right corner of the screen displays your personal Chess King information in the Profile Panel:



The image shows a profile panel for a user named Kara with a rating of 830. The panel is divided into three sections, each indicated by a red circle with a white number:

- 1** The top part of the panel displays your user name and your chess rating (which is based on the rated games you've played in Chess King).
- 2** A status bar in the middle of the profile panel shows your current level and how many experience points you need to earn in order to “level up”. The dark green bar is a graphic representation of your progress in getting to the next level.
- 3** The lower section shows the awards you've earned by solving chess puzzles and completing chess “Quests”. An important part of this display is the number at the far right: the number of coins you've acquired. Coins can be spent to buy hints in the games and quests you play in Chess King. In the display above, we can see that Kara has earned 435 coins; she can spend these to get hints in her games. You'll learn more about coins and hints in the sections on training and playing games in Chess King.

**Now that you're familiar with the Chess King's layout, let's learn about algebraic notation, the “language” of chess.**



# CHAPTER 3

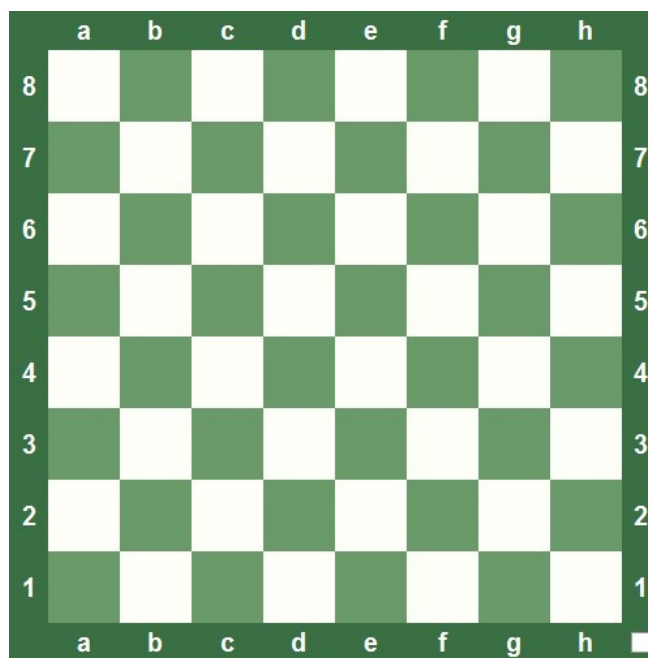
## Learn the “universal language” of chess

- Chess notation
- Abbreviations and symbols

# LEARN THE “UNIVERSAL LANGUAGE” OF CHESS

The term “chess notation” refers to a means of recording the moves of chess games so that people can replay them later. There are several different kinds of chess notation, but the one most commonly used nowadays is called algebraic notation. That name makes it sound complicated, but it's actually very easy to learn and use. In fact, to make full use of all of Chess King's fun training and analysis tools, you really ought to learn how chess notation works. (If you already know how to read and use algebraic notation, you can skip ahead to Chapter 4 if you'd like.)

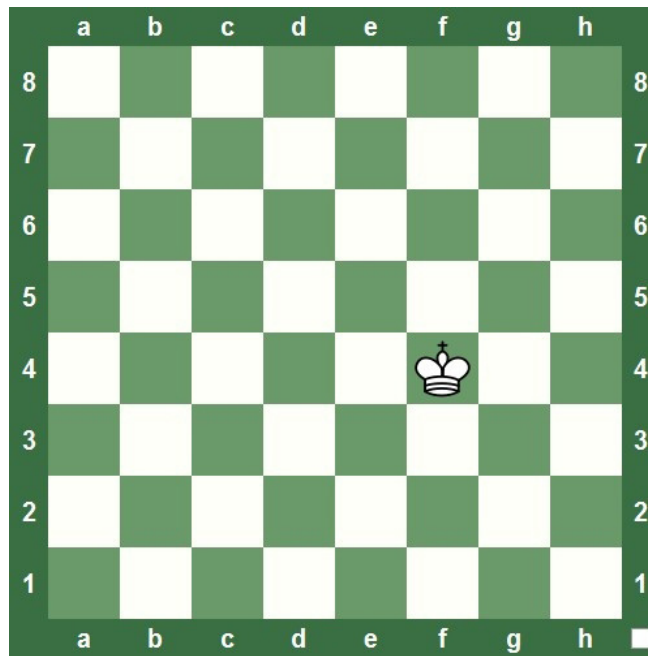
Have you ever played the game Battleship? If you have, you're halfway to becoming an expert user of algebraic notation already!



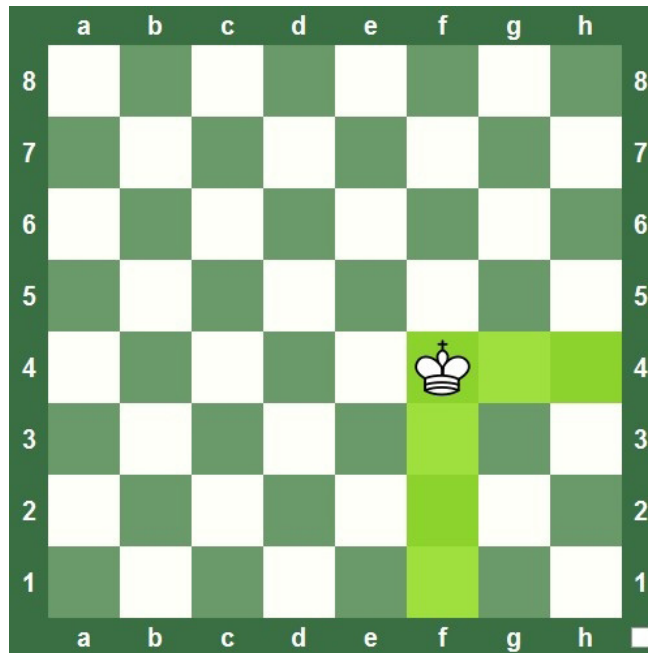
- A chess board has sixty-four squares, arranged in eight horizontal rows (called ranks) and eight vertical rows (called files). Each file is identified by a letter, a through h. Each rank is identified by a number, 1 through 8. Here is a chess board with the identifiers for the ranks and files displayed around it on all four sides:

Every square on the board has a name, consisting of the letter of its file and the number of its rank. In fact, this is exactly why I asked if you'd ever played Battleship; just as in that popular naval game, the name of each square is a combination of the file letter and rank number. To find the name of the square, just find the letter of its file and the number of it rank on the board edge.

- Let's try it and see how it works. Can you find the name of the White King's square in this position?



If you said “**f4**”, you're right! This illustration will make it more clear:



- By starting on the King's square and going to the board edges, we easily find the letter and number corresponding to that square. In algebraic notation, the square's coordinates are always given with the file's letter first, followed by the rank's number. So the White King's square in the above position is **f4**.

**In algebraic notation, the names of the pieces are abbreviated as a single letter:**

**K** = King

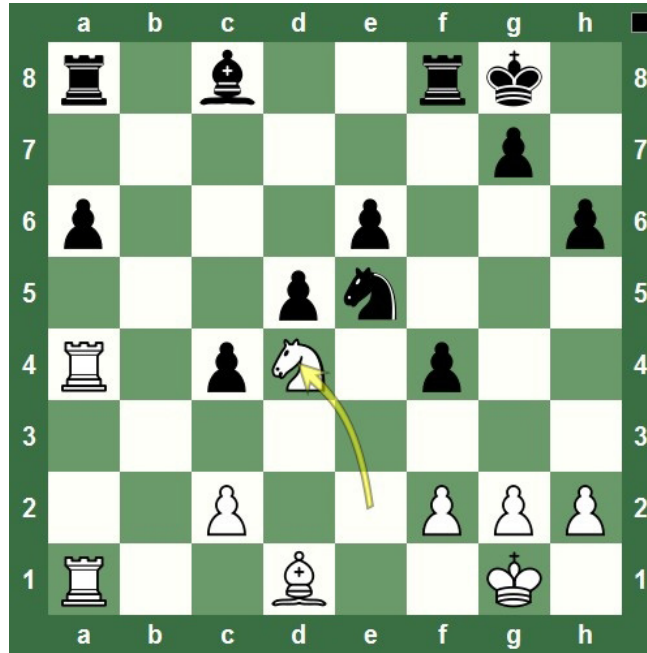
**Q** = Queen

**B** = Bishop

**N** = Knight (the K is already used by His Majesty!)

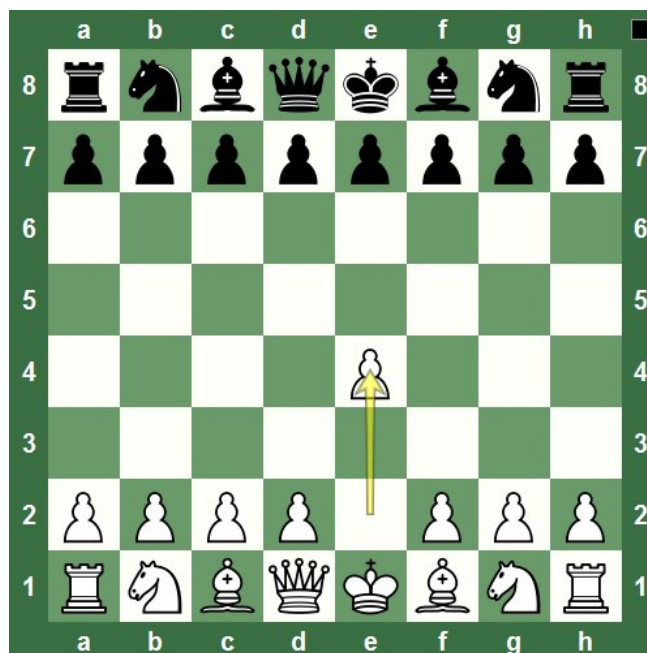
**R** = Rook

- Chess moves are written with the abbreviation of the moving piece first, followed by the square to which the piece moves. The Knight's move is shown by the yellow arrow in this diagram:



and would be written as **“Nd4”** in algebraic notation.

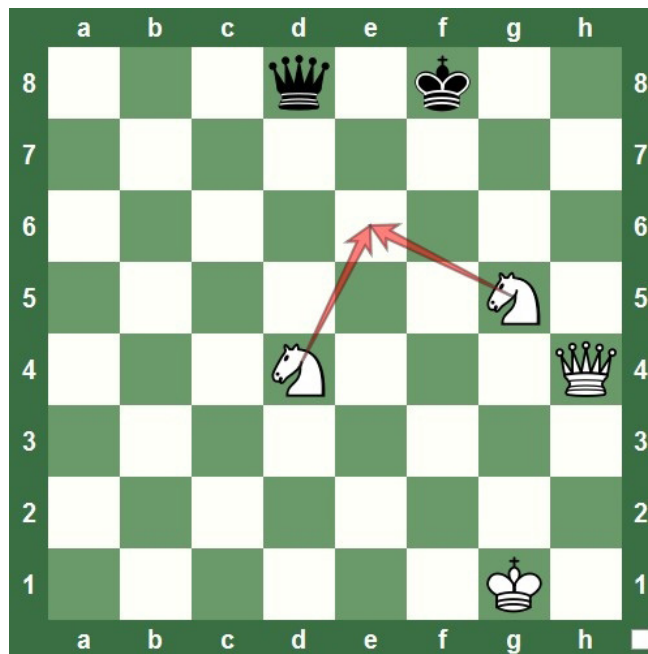
- But what about the pawns? We haven't forgotten them. Although a pawn move is sometimes written with the abbreviation “P”, it's common for no abbreviation to be used at all. So when you see a move which is given without a piece abbreviation, it's a pawn move.



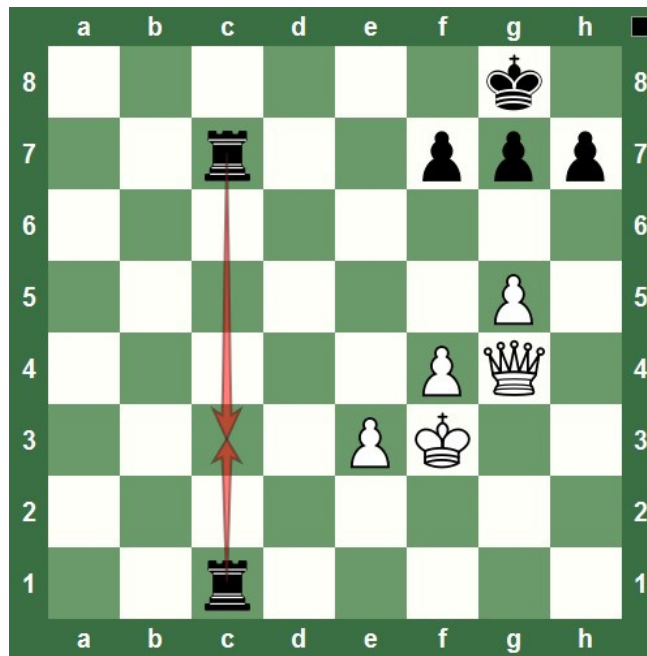
White's move in the position above would be written simply as **“e4”**.

Because people who speak different languages call the chessmen by different names, it's become increasingly common in “languageless” chess books and in chess software to use figurine algebraic notation, in which the piece abbreviations are replaced by tiny pictures of the chess pieces (known as “figurines”, hence the name). This is the type of notation used on your screen in Chess King, and you should have no problem determining which figurines correspond to which pieces. As with “letter” notation, the lack of a figurine means that the move was made by a pawn.

- You might occasionally see a form of notation which gives both the starting and destination squares as part of the written form. As examples, the Knight move two diagrams ago might be written as “Ne2-d4”, while the pawn move above would be written as “e2-e4”. This is sometimes called “computer algebraic notation” and, while more precise, it's not used as often.
- But there will be times when you're using regular algebraic notation when more than one of the same piece could move to a particular square. Take this position, for instance:



- Either of the White Knights can move to e6 (and fork the Black King and Queen!). If one of the Knights makes that move it would be confusing to just write “Ne6”, since no one replaying the game would know which Knight went to that square. If the Knight on g5 made the move, it would be recorded as “Nge6”, while if the other Knight jumped to e6 it would be written as “Nde6” -- in either case, the starting file of the Knight is provided for clarification.
- A similar case can happen with Rooks on the same file:



- Either Black Rook can move to **c3**. If the Rook on **c7** makes the move, it would be written as “**R7c3**”, while if the Rook on **c1** made the move, we would record it as “**R1c3**”. In this case the starting rank is included to make the actual move more clear.

# ABBREVIATIONS AND SYMBOLS

Algebraic notation also uses some additional abbreviations and symbols.

- 1** The letter “**x**” is added when a move is a capture; for example, “**Bxf6**” means that the Bishop captured the enemy piece or pawn on **f6**.
- 2** A “plus” sign (**+**) after a move indicates that it was a check, while a pound sign after a move (**#**) means that the move was a checkmate; for example, “**Qh8+**” or “**Rxa8#**”.
- 3** Castling Kingside is recorded as “**0-0**” (capital letter **0**'s, not the number zero, when typing the moves), while Queenside castling gets recorded with an extra **0**, like this: **0-0-0**.
- 4** If a pawn captures en passant, it's helpful (though not required) to add the abbreviation “e.p.” after the move, like this: “**exf6 e.p.**”.
- 5** When a pawn promotes, the move is written as a regular pawn move, followed by the “equal” sign, and the letter abbreviation for the piece to which it promoted, like this: “**b8=Q**”.

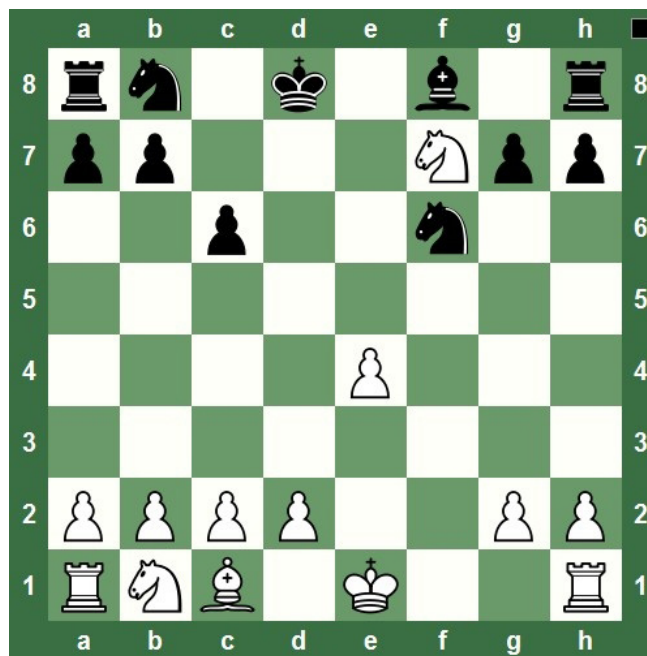
**It's customary to include the game's move number before a move. If a move is preceded by an ellipsis (three dots), either before the move (“...Bc5”) or between the move number and the move itself (“15...Bc5”) it means that the move was made by Black. If there's no ellipsis, the move was made by White (“15.Nf4”).**



Here's a short sample game you can use for practice (which also happens to be the first game from Chess King's GigaKing database):

**1. e4 e5 2. f4 d6 3. Bc4 c6 4. Nf3 Bg4 5. fxe5 dxе5 6. Bxf7+ Kxf7 7. Nxe5+ Ke8 8. Qxg4 Nf6 9. Qe6+ Qe7 10. Qc8+ Qd8 11. Qxd8+ Kxd8 12. Nf7+**

- If you play through the moves correctly, you should arrive at the following position after White's 12th move:



- Once you understand algebraic notation, you unlock a whole world of chess possibilities. Vast amounts of chess literature in the form of books and magazines become available at your beck and call. You'll be able to read and play the chess games of great players of the past, local masters in chess club newsletters, even the games of your friends which they've written down. Best of all, you'll be able to write down the moves of "live" games you play, and then add them to a Chess King database later, where you can add your own notes to them or even have Houdini analyze them!
- When you learn algebraic notation, you really do learn a new language – the universal language of chess.

# CHAPTER 4

## Riddle me this – the first step in training

- Exploring the chess puzzle control panel
- Solving a Chess King puzzle set
- Finishing a puzzle set and earning rewards
- Unlocking tougher challenges

# RIDDLE ME THIS – THE FIRST STEP IN TRAINING

After you've created your own unique user profile and your own database (Chapter One), it's time to let the fun begin! It's time to make some real chess moves on the Chess King board by solving some chess puzzles. Completing the puzzles in Chess King is good practice, will teach you some new skills, and also has a practical purpose within the program itself: by solving chess puzzles, you gain experience levels and earn coins which you can spend to buy hints in later games.

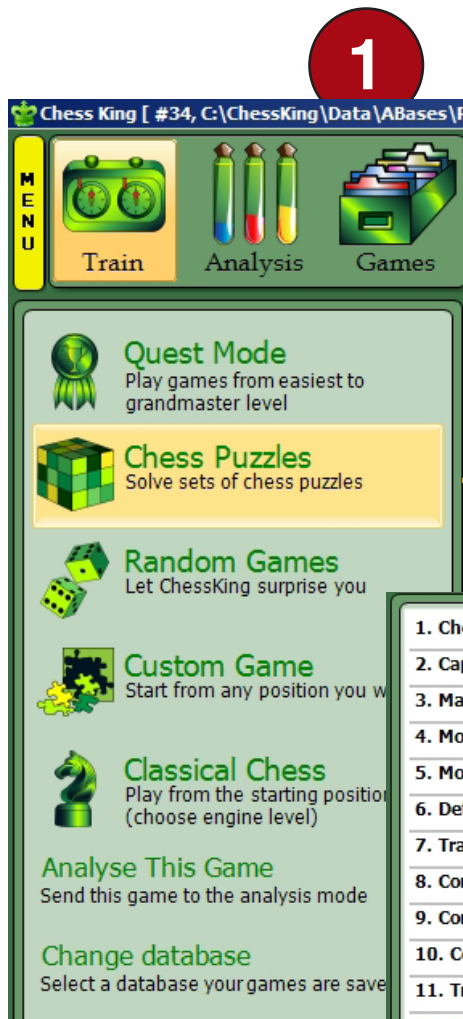
# EXPLORING THE CHESS PUZZLE CONTROL PANEL

Make sure you've loaded your own profile by checking the profile panel at the screen's lower right:

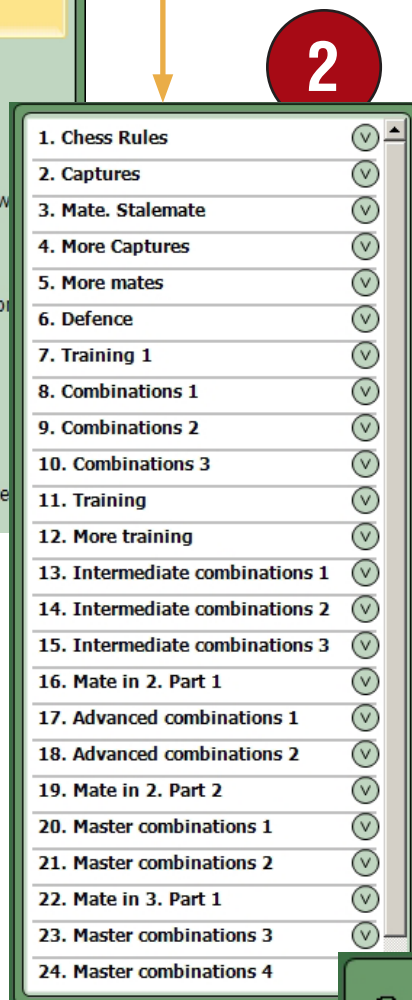


**If another player's profile is displayed, you can switch to your own profile as we learned in Chapter 1.**

- In order to “buy” hints in Chess King's practice and play modes, you'll need to earn some coins. You can see in the illustration above that Chess King does give you ten coins when you create a new profile. That's a nice gesture, but ten coins isn't nearly enough to buy many hints!
- A great way to earn coins (and win other awards, all of which are set at “0” when you create your profile) is by solving Chess King's chess puzzles. Not only will you earn coins and rewards, but you'll also learn valuable chess skills that you can apply in your later games against Chess King (and against “real life” opponents, too!).



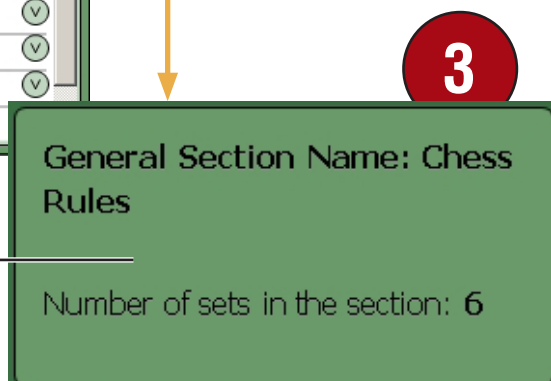
**1** To enter Chess King's puzzle mode, click the Train button and then select "Chess Puzzles" from the control panel:



**2** The control panel will change to display the twenty-five levels of chess puzzles in Chess King:

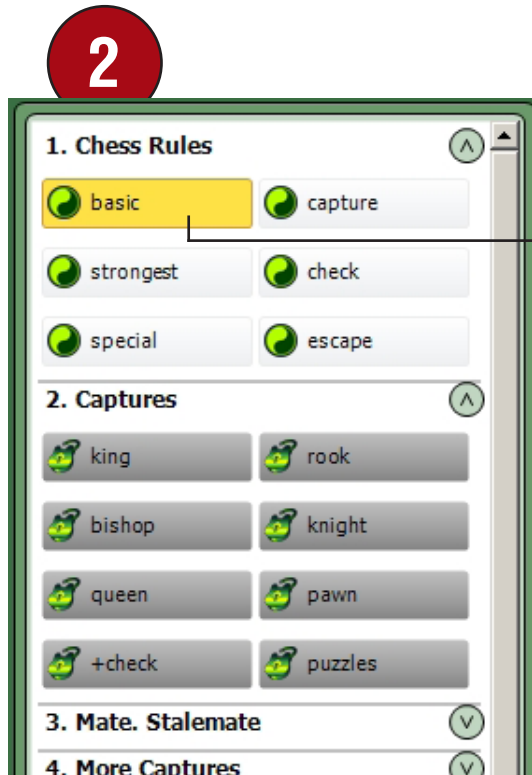
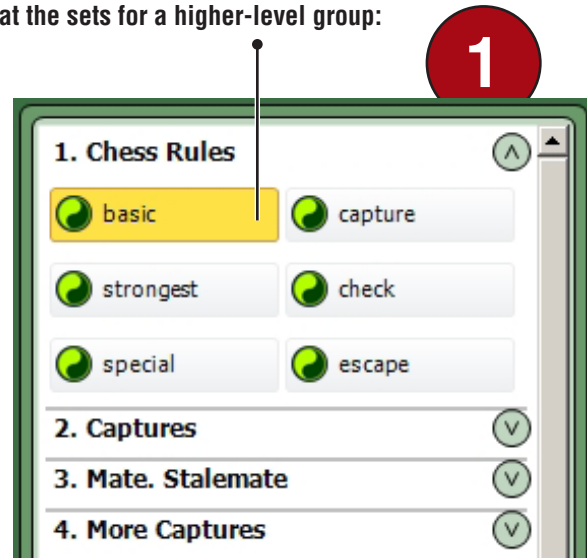
**3** When you roll the mouse over one of these twenty-five puzzle groups, you'll see more information about that group in the description panel:

Here we can see that the first section ("Chess Rules") contains six sets of puzzles that we can solve.



A green circle on a button means that this is a set we're allowed to try solving. If we look at the sets for a higher-level group:

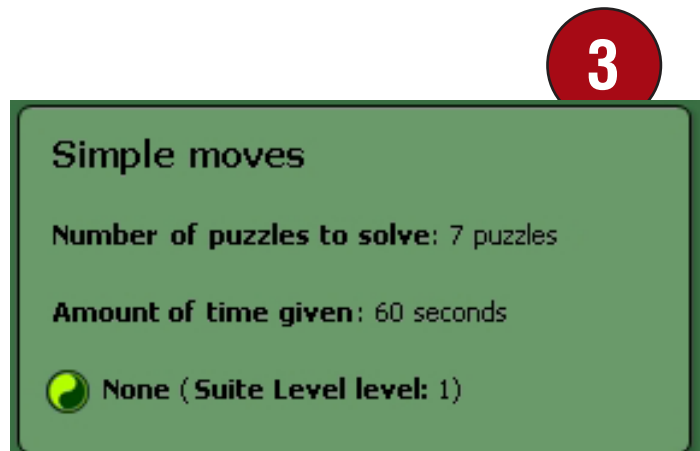
**1** Each listed puzzle group has a round green button to the right of the group's name. When you click that button, you expand the view to display the puzzle sets within that group. When we click the button for "Chess Rules", we see the six puzzle sets, each represented by a rectangular button.



**2** ...we see that these puzzle sets are colored gray and display a padlock; these sets are locked, meaning that they're unavailable to us until we unlock them. Tougher puzzles are unlocked whenever you gain enough experience points to "level up"; you earn these experience points by solving puzzles and winning "Quest" games (see Chapter 5).

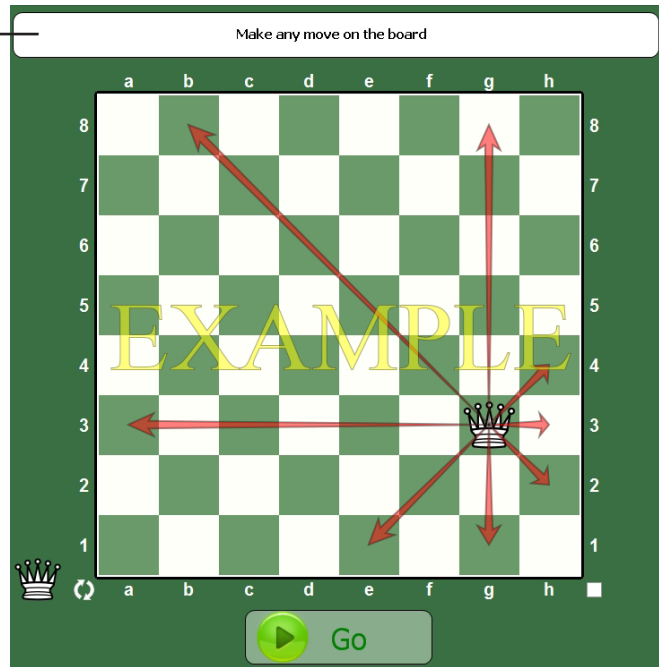
Let's roll the mouse over the button labeled "basic" and see what we can learn from the description pane:

**3** We learn that this puzzle set involves basic moves, that there are seven puzzles in the set, and that we're given sixty seconds to solve all seven puzzles (not sixty seconds per puzzle). The last line in the description pane shows that this puzzle set hasn't yet been solved by this user, so no award was given (that's why it says "None").



Clicking on the “Basic” button will display some additional information on and around the chess board:

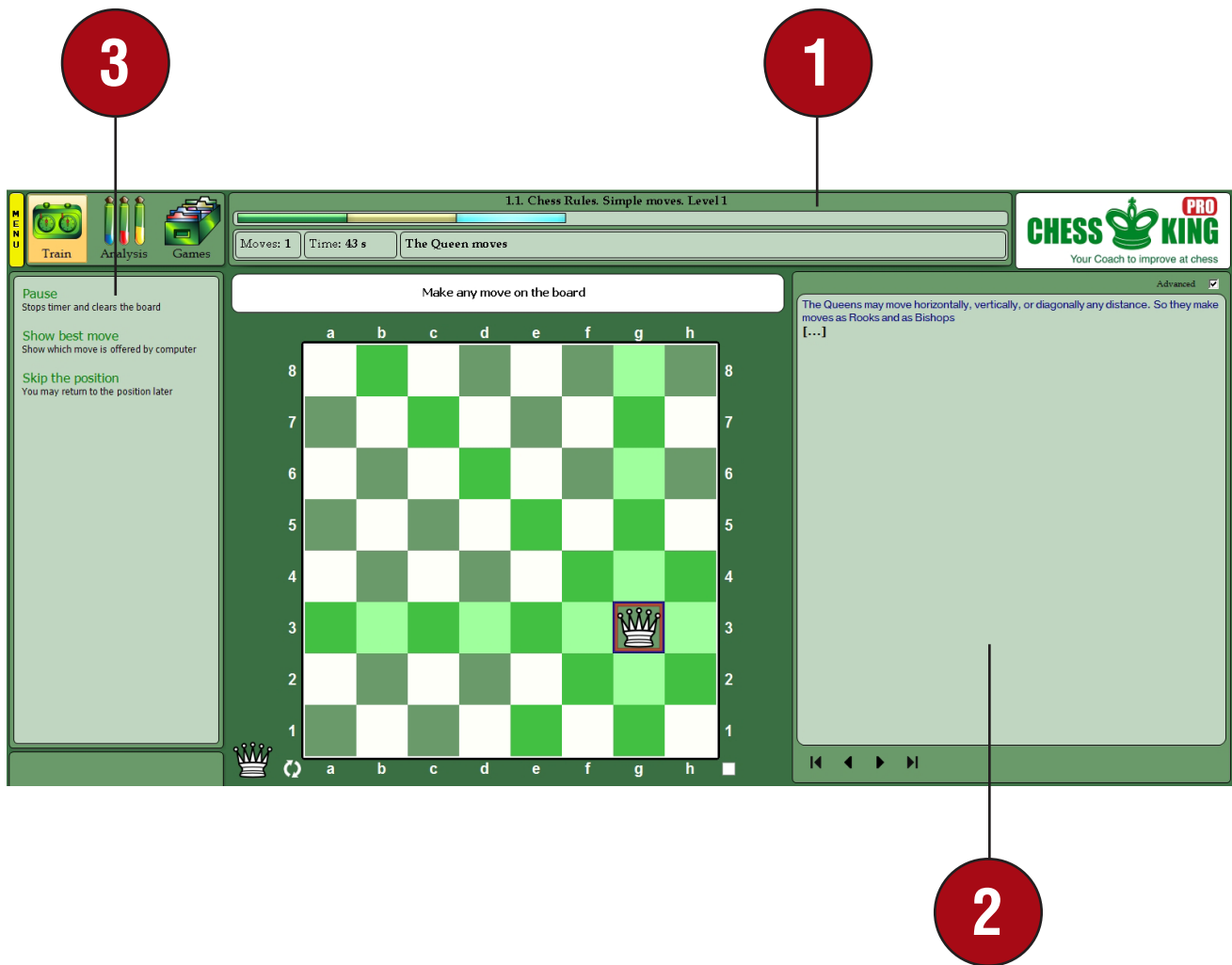
The white panel above the board provides a little extra information about what to expect from this puzzle set. In the “Basic” set, the user needs to make any legal move with the piece on the board. The chess board itself displays an example of the kind of puzzle found in the set.



# SOLVING A CHESS KING PUZZLE SET

Clicking the green “Go” button under the board starts the challenge (and the clock!).

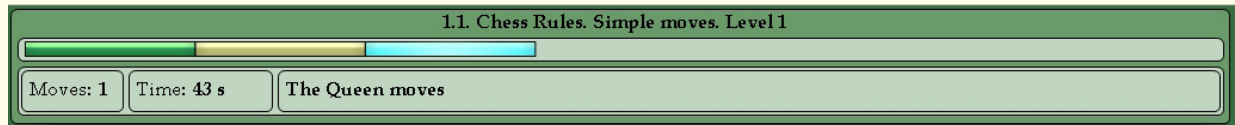
As you progress through a puzzle set, you'll notice several new features on the screen:





## Let's start at the top of the screen:

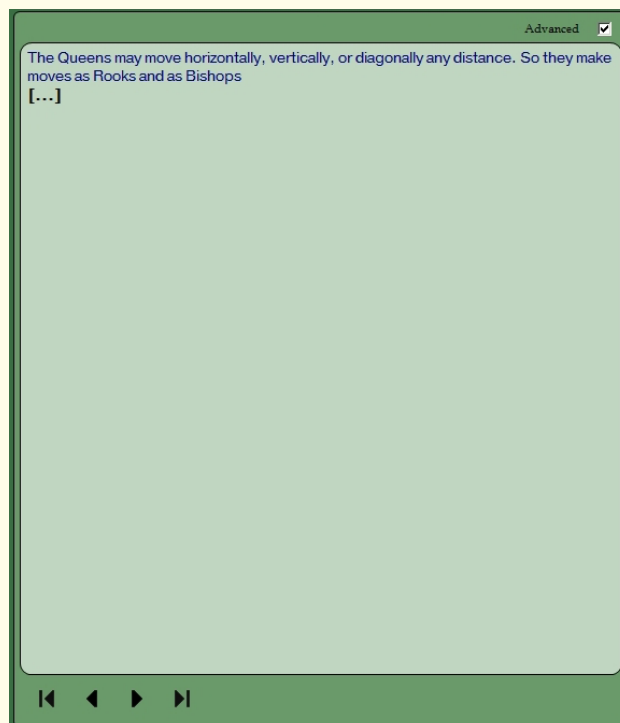
**1** The line at the top identifies the puzzle set we're solving. Immediately below that is a group of colored bars, which double as buttons. Each color means something different:



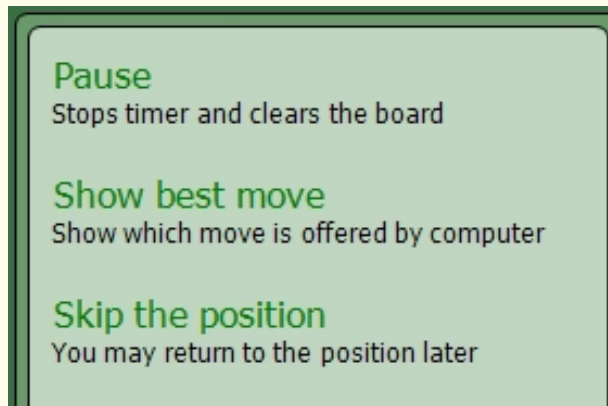
- Green** – a puzzle you answered correctly
- Red** – a puzzle you answered incorrectly
- Yellow** – a puzzle you skipped
- Blue** – the puzzle you're currently solving

- You can go back to a previous puzzle by clicking on one of these bars/buttons. Notice that you can't skip ahead using these buttons; you can go only to puzzles you've already seen in the current set.
- The lower bar shows the number of moves in the solution to the current puzzle, the timer (which is a countdown timer, meaning that the clock runs backwards), and the name of the current puzzle.

**2** The notation pane sometimes provides extra instruction or information which will be useful in finding the right answer:



### 3 The control panel displays some commands which are specific to puzzle solving in Chess King:



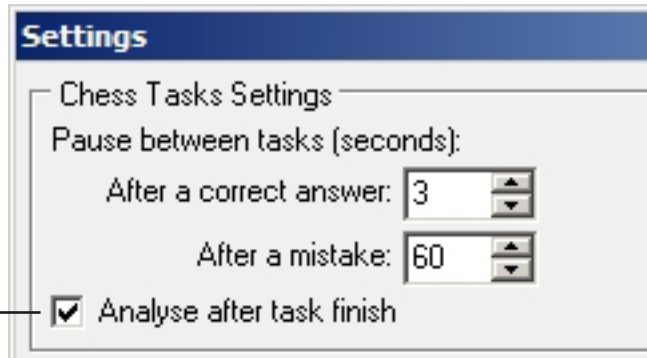
- If you select “**Pause**”, the timer is stopped. But this doesn't give you any extra time in which to think, because the chess board is also cleared so that you no longer can see the position.
- You can get a hint from Houdini 4, the built-in “**chess playing brain**” of Chess King. Houdini will show you the best move in the position, but you'll also get no credit for solving the puzzle.
- If you want to skip the puzzle and come back to it later, you can do this too by clicking “**Skip the position**”. When you reach the end of the puzzle group, any puzzles you skipped will be presented to you again in a random order.

Each time you finish a puzzle, you'll see this box:



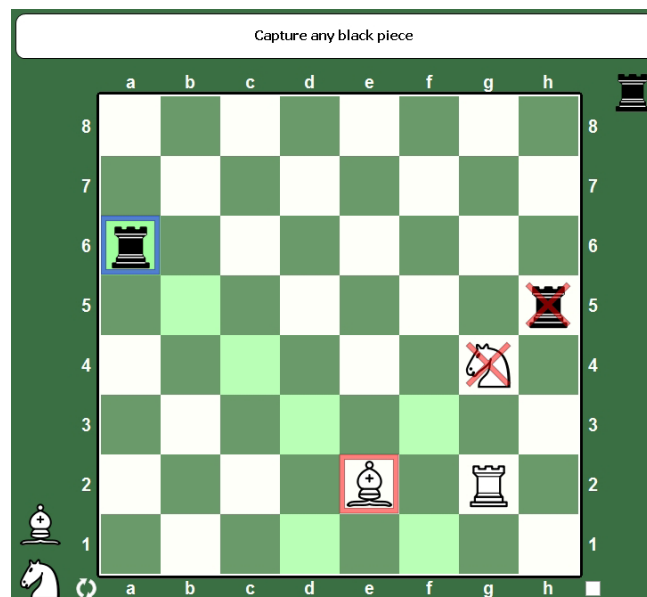
- ...which has three components. You can click “**Review**” to examine the position at length, if you wish. If you select “**Review**”, the screen will be frozen for as long as you care to study the current board position. This is sometimes helpful when you want to look at the result of a nice tactical shot. When you review a position in the way, a new command called “**Resume**” will appear in Chess King's control panel; clicking it will return you to the puzzle set where you can continue solving the challenges.
- Also in this display you can click “**Continue**” to go immediately to the next puzzle in the set.

- The red number in the middle of the display is a countdown displaying the number of seconds until the next position will be loaded automatically. If you'd like to change the number of seconds between puzzles (the “delay”), you can do this by clicking the yellow Menu button (near the screen's upper left corner) and selecting “**Settings**”. You find the controls for setting the delay in the Settings dialogue:

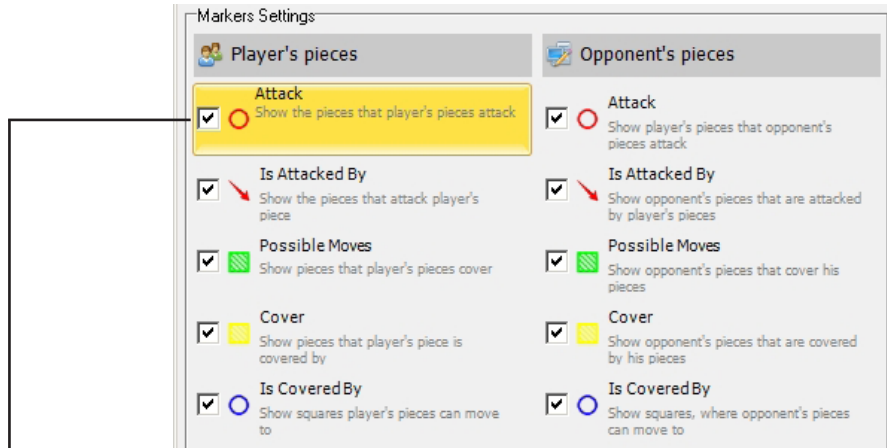


- Two boxes allow you to type in a numerical value corresponding to the length of the delay you want before the next position is automatically loaded. Checking “**Analyze after task finish**” means that Houdini will start playing moves for both sides after you've given an answer for the puzzle. This is often interesting in tactical puzzles which don't involve checkmate – you can see how both sides play the position after a successful tactical shot. On the other hand, checking this box also makes it hard to take a second look at a position you solve incorrectly, since Houdini will immediately play the correct move when you make a mistake.

While we're on the subject of the Settings dialogue, you will (by default) see a lot of colored squares, boxes, and other visual cues on the chess board while you're solving puzzles:



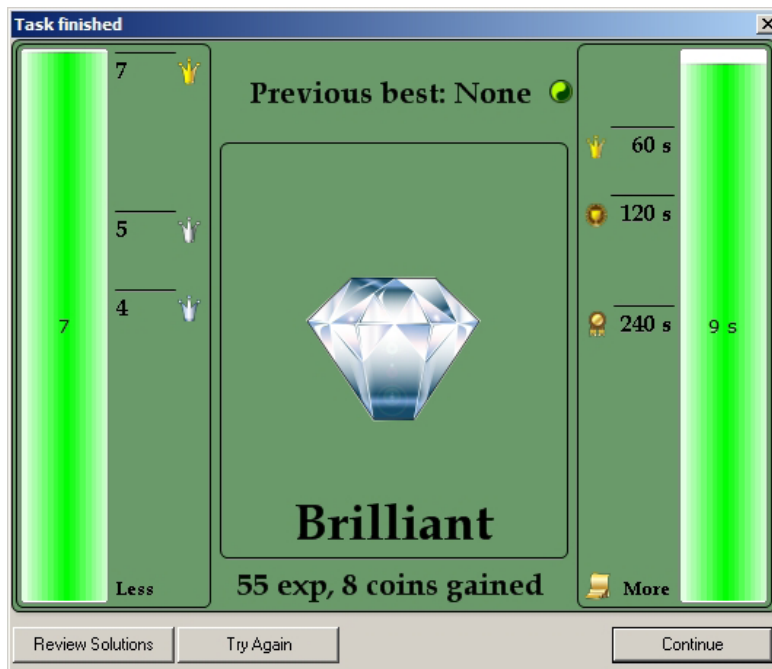
Some players might find these markers distracting, and sometimes they even give away the correct answer (as you see in the illustration above). The markers can be switched off or on in the Settings dialogue:



- You can uncheck the boxes for markers you don't want, and check the boxes for the markers you'd like to continue seeing.

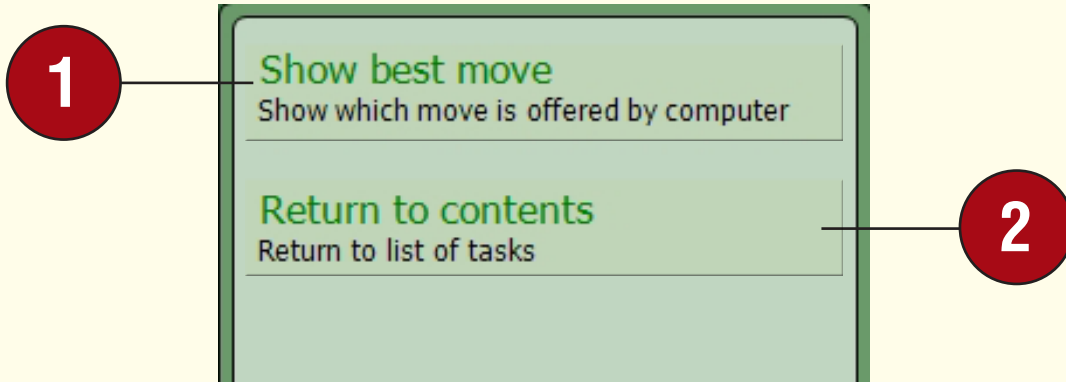
# FINISHING A PUZZLE SET AND EARNING REWARDS

When you solve the puzzles in a set, you're graded not just on accuracy but on the time it takes you to complete the set. When you've finished a set, you'll see a dialogue like this one:



- Our friend Courtney has just finished her first puzzle set, and done it in great time, too! Since she got every problem right and did it so quickly, she was awarded a diamond symbol to show how well she did. She earned 55 experience points toward advancement to Level Two (which will unlock more puzzles and chess “**quests**”) and eight more coins which she can use to buy hints in Chess King's playing modes.
- Had Courtney tried this puzzle set before, her previous best would have been listed at the top of this display. But since this is the first time she's attempted this puzzle set, it just says “**None**” for her “**previous best**”.
- Buttons at the bottom of this display let you review the answers, do the puzzle set again, or close the dialogue and go back to the main Chess King screen, with the next puzzle set from the current group loaded; all you need to do is click “**Go**” to start the timed challenges.

If you decide to review the answers, two commands are available in the control panel:



**1** Clicking “**Show Best Move**” displays a colored arrow which shows the solution to the puzzle.

**2** Clicking “**Return to Contents**” displays the suite of Chess King's puzzle sets.

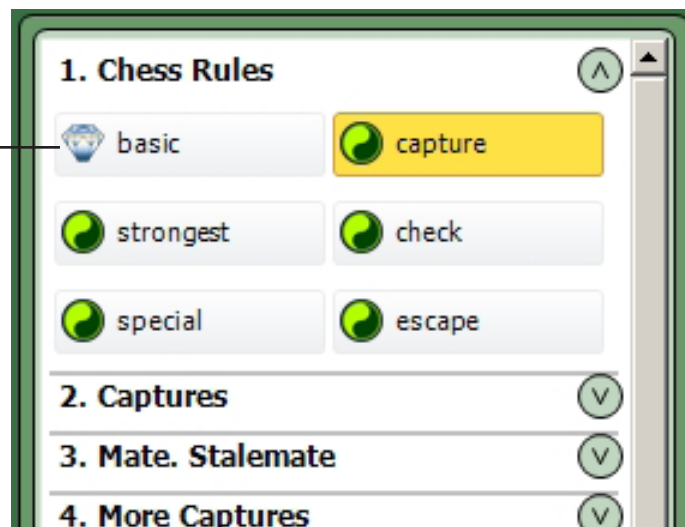
Now that Courtney has solved some puzzles, we can look at her profile pane to see her new totals:



• She's earned some more experience points, her “bank account” of coins has increased to 18, and she's earned a diamond award. If we go to the puzzle list in the control panel:

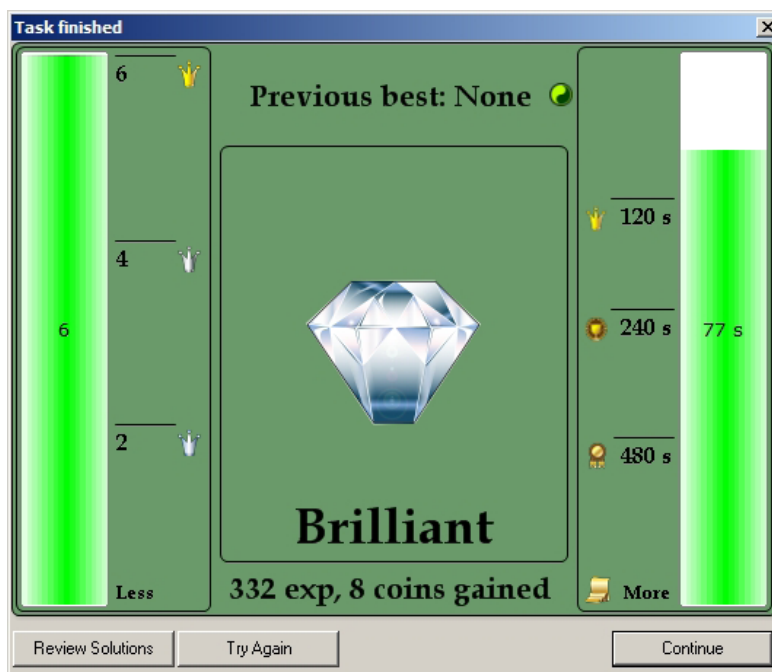
- ...we see Courtney's diamond award on display for her performance in solving the “**basic**” puzzle set.

*Note that you can always go back and repeat puzzle sets, even if you solved them correctly the first time. Repeating a correctly solved set won't earn you any additional experience points, but it will award coins – plus it's often good practice regardless.*



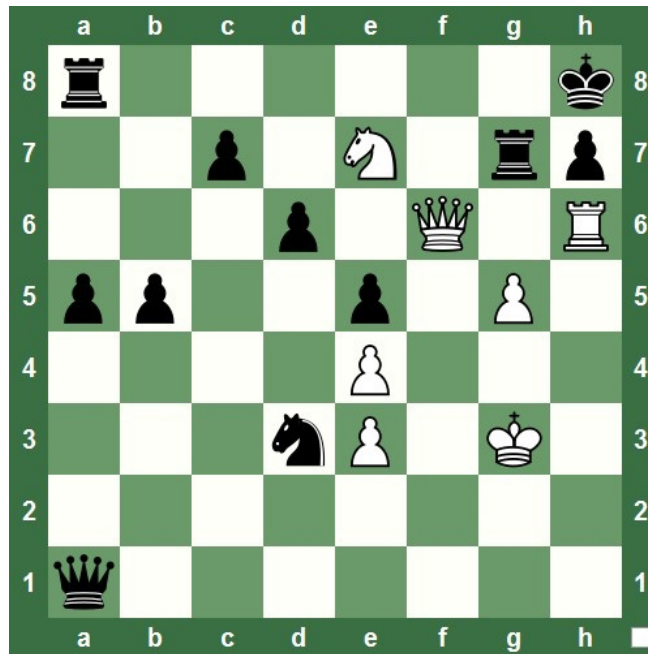
# UNLOCKING TOUGHER CHALLENGES

As you earn experience points and gain experience levels by successfully solving puzzle sets you'll unlock more challenging levels of chess puzzles, making more difficult and rewarding sets available for you to solve. Each puzzle group increases the level of difficulty of the tasks, but you'll also earn more experience points when you finish a puzzle set. For example, this Level 6 set (from the "Defense" group) earned the user 332 experience points (compared to the 55 points awarded for the "basic" set we saw earlier).



- Chess King will train you in a variety of chess skills. You'll learn checkmate patterns, defensive techniques, and combinations which win material. For example, the checkmate problems begin with simple one move mates. By the time you reach Level 8 in the puzzles, you'll be tasked with finding multiple move combinations which either checkmate the enemy King or win some of the opponent's material:

By the time you reach Level 16, you'll be finding checkmates in two moves:



- And higher levels present you with even tougher challenges
- Solving the chess puzzles in Chess King is fun to do, earns coins which you can spend on hints in Quest games and regular games, unlocks more difficult challenges as your experience level increases, and (most importantly) teaches you valuable chess skills in an interactive manner. Instead of just reading about a chess concept or watching a video about a technique (and coming away with no idea whether or not you can actually apply it in your own games), you're learning by doing: you're immediately putting these chess ideas and skills to work for you in a fully interactive environment..
- Normally to unlock higher puzzle levels you need to solve previous easier levels and win games. If you feel you need to skip immediately to a higher level and unlock several levels at once, contact us at [support@chessking.com](mailto:support@chessking.com) and we will help you do so.



# CHAPTER 5

## Saddle up and go on a chess quest!

- Your chess quests
- Going on a quest
- Getting help from Chess King
- Spotting mistakes: your personal chess coach
- The end of a quest – the fruits of victory
- When a quest ends, another begins!
- The idea behind chess quests

# SADDLE UP AND GO ON A CHESS QUEST!

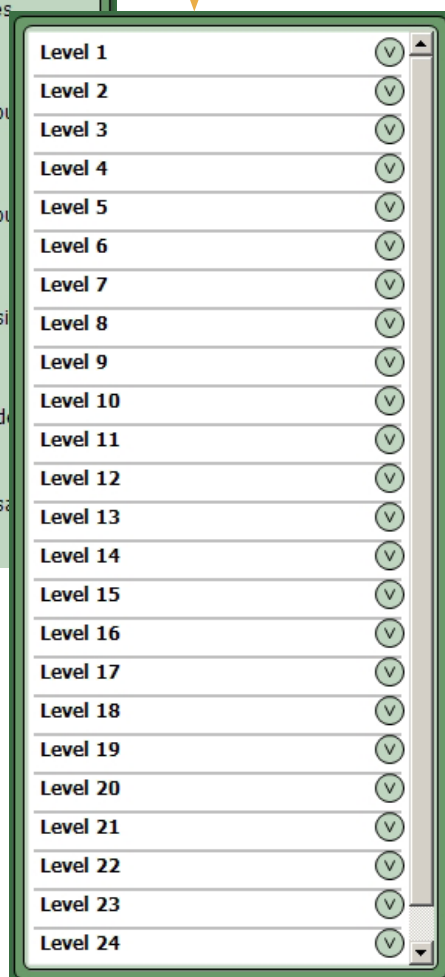
After you've solved several Chess King puzzle sets and gained some coins (and maybe an experience level or two), it's time to try a Chess Quest! Just like a knight of old, riding off on his warhorse to do battle, you'll be tasked with completing a quest. But in this case the goal is harder than in Puzzle Mode. The object of your quest isn't to defend the King or win a piece; you'll be hunting for bigger game in Quest Mode. You'll be striving to gain the ultimate chess goal: **CHECKMATE!**

# YOUR CHESS QUESTS

Before starting a chess quest, make sure your own user profile is loaded by checking the profile panel at the lower right of the Chess King screen. That's to make sure you're earning awards, coins, and experience points for you and not earning them for one of your friends by mistake!

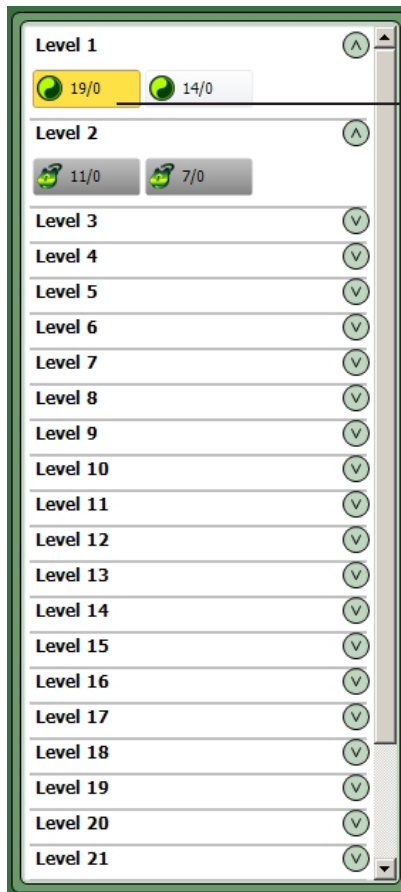


**1** To display the chess quests, start by clicking on the “Train” button in the ribbon, and then select “Quest mode” from the control panel:



**2** The control panel will change to display the twenty-five levels of chess quests (with a scroll bar to the right which lets you scroll up and down through the list):

- This looks very much like the chess puzzles display we saw in Chapter Four. In fact, Quest Mode shares a lot of features and ideas with Puzzle Mode, but there are a few differences between them as we'll soon see.

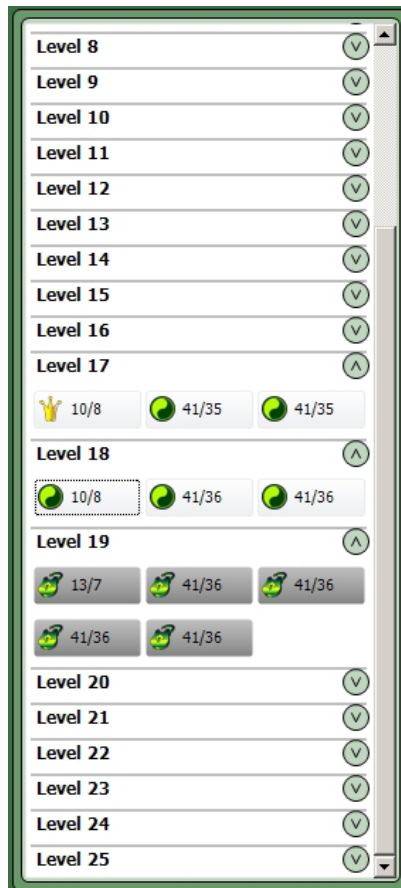


• You can click on the round button to the right of a level number to open the view of that level. For a new user, clicking on the buttons for Level One and Level Two will reveal a display like this:

• Each rectangular box is actually a button you can use to select and load a different chess quest. A green circle indicates that the quest is available to you, while a padlock means that the quest is “locked” and you're not allowed to undertake it yet. You unlock new quests by “leveling up”; you increase your level when you earn enough experience points by solving chess puzzles and successfully completing chess quests. (Remember that you can always see your current level, and the number of experience points you need to level up, by looking at your profile panel near the screen's lower right corner.)

- In the illustration above, we see that a brand-new user can undertake only the two quests under Level 1; the two quests for Level 2 are locked and can't be played until the user levels up.

A more experienced user like Kara (who has reached Level 18) has more advanced quests available to her:



- Your highest available quest level is the same as your experience level. Until you reach experience Level 2, quests higher than Level 1 will be locked to you.

**TIP:** Successfully completing all six puzzle sets from Level 1 in Puzzle Mode will earn you enough experience points to advance to Level 2, which will unlock more puzzles and quests.

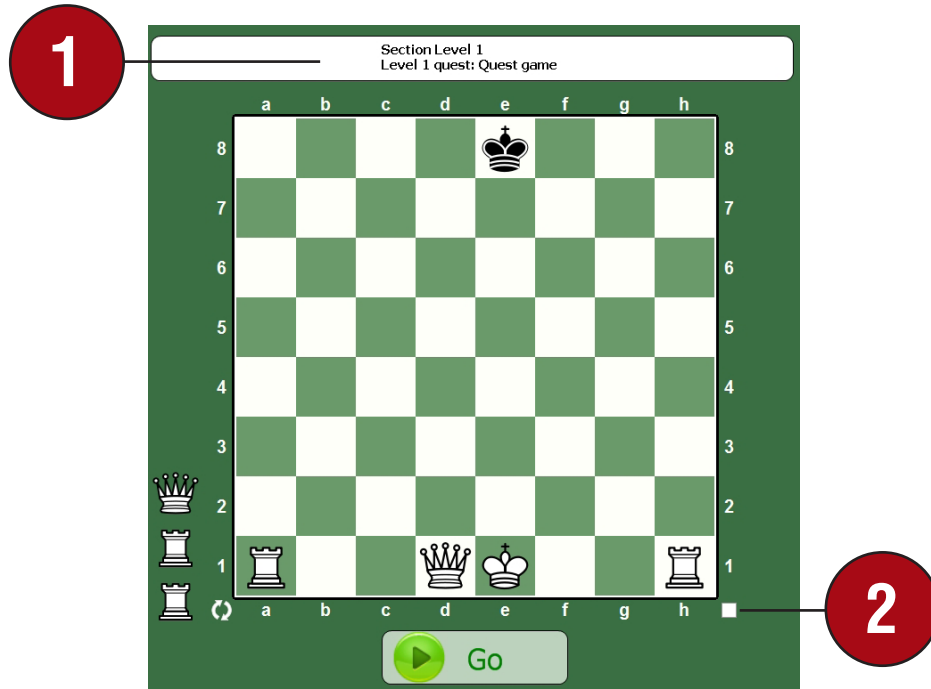
To get more information about a quest, roll the mouse cursor over the quest's button and look at the description panel near the lower left corner of the screen. For example, you see this when you roll the cursor over the box for the very first quest:



- We see that the quest involves playing with the White Queen and a pair of Rooks against the opponent's Black King. The quest hasn't been played before, so there are no statistics for a prior attempt (instead it just reads "None").
- There's also an approximate rating (given in Elo points, which we'll learn more about later), letting you know about how tough it'll be to beat your computer opponent, Houdini 4. In this case we see that the rating is "100", which isn't very tough at all. (As an approximate gauge, any rating under 1200 is considered to be beginner level, a rating of 1500 or so is considered an average player, a rating of 2200 indicates chess mastery, and chess grandmasters are rated 2500 and higher. Only a handful of players have topped the 2800 level; the highest official chess rating ever recorded [as of this writing] was 2851, achieved by Garry Kasparov.)

**A PEEK BEHIND THE CURTAIN:** It's very important to point out that in Quest Mode, Houdini 4 will always play at full strength! The Elo value shown in the description panel is based on the material advantage which you'll enjoy against Houdini, not on some internal "handicap" mechanism which "dumbs down" Houdini's chess playing skills. This isn't terribly crucial when playing lower level quests; for example, games in which Houdini only has a King aren't able to be won by the computer anyway. But in higher level quests (as early as Level 10 or 12, depending on the player), you'll find that a quest you initially think is "easy" when you first see the starting position turns out to be far tougher than you thought!

Clicking on a quest button loads that particular quest, and you can see the starting position on Chess King's board. Let's look at the very first (and easiest) quest:



- 1** The white bar above the board tells us which quest you're playing. The chess board will show the starting position of the quest, and the pieces displayed outside the board show the advantage you'll enjoy – in this case, you'll be up a Queen and two Rooks.
- 2** Don't forget that the small boxes displayed to the immediate right of the board show which side is to move; the tiny white box just outside the board's lower right corner means that it's White's move. And, should you want to turn the board around (to see it from the other side's point of view), click the twin curved arrows near the board's lower left corner.

You might notice that there are clocks displayed above the board:



- Games in Quest Mode are timed; the clocks for you and Houdini will run during the game. Don't let that worry you; in Quest Mode, you're not penalized for letting the clock run down to zero. The clocks are just there for practice. (We'll learn more about chess time controls and, specifically, how to set the Chess King clocks in a later chapter.)

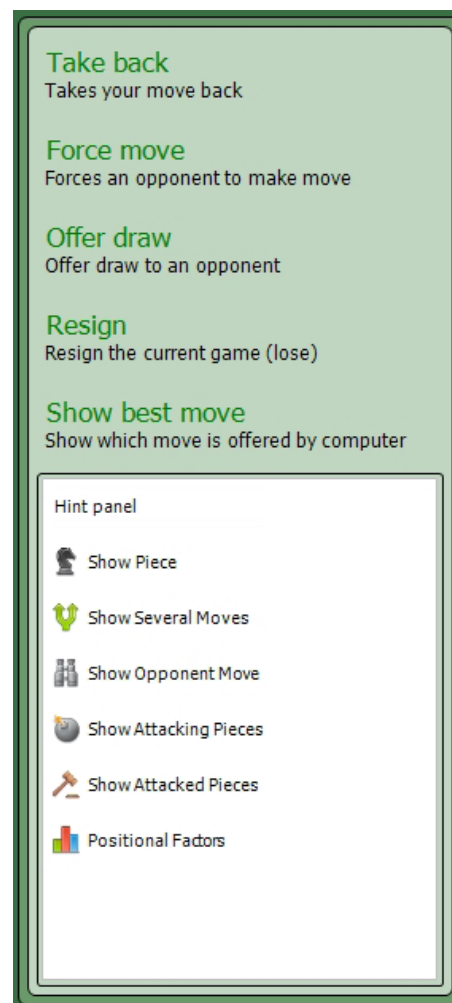
# GOING ON A QUEST

Like a knight in a medieval epic, your goal on your chess quest is to slay the dragon – or, rather, to checkmate the Black King. As we mentioned earlier, quest games aren't puzzles or tactics exercises; they're played like actual chess games, meaning that they don't end until the game is drawn, one player is checkmated, or you resign (Houdini won't quit, no matter how hopeless the position).

After you've decided on a quest, click the pulsating green “Go” button below the board to begin.

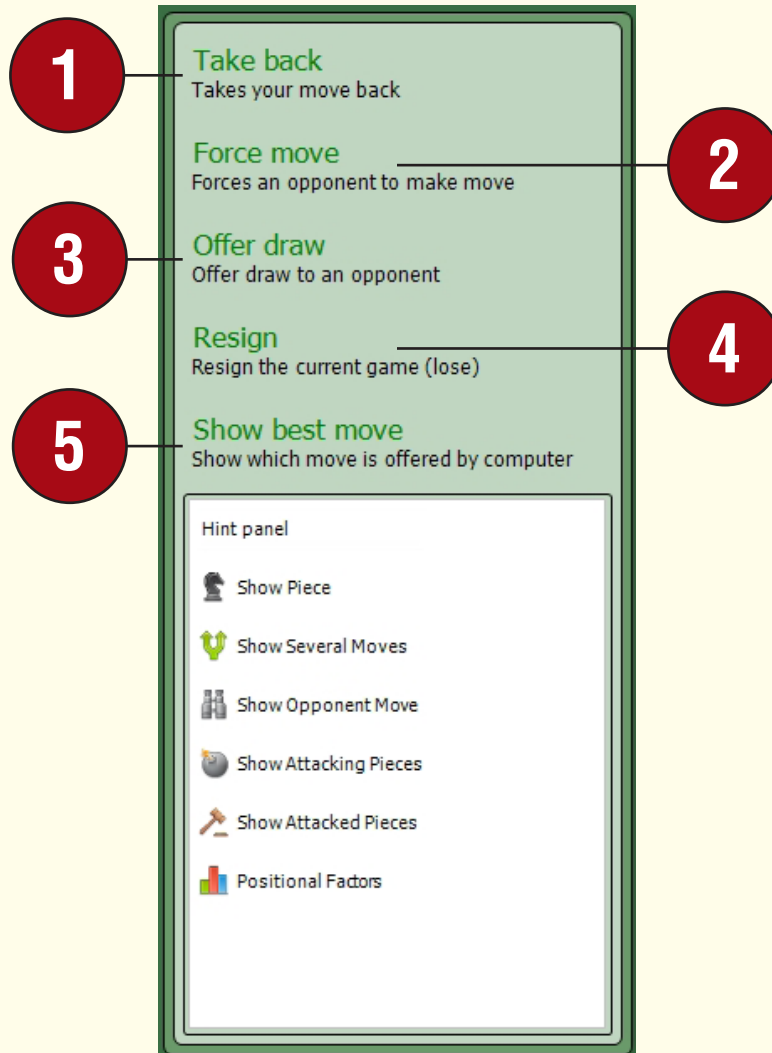


When you click the “Go” button, you'll notice that the control panel displays new options for you to use on your quest:





Most of these options are pretty self-explanatory, but let's examine them in turn.



**1** Take back – if you make a move and then see a better one, you can click “Take back” to retract your previous move and then make another one. By the way, this command will still work after Houdini 4 has replied to your move! If you click “Take back” after Houdini moves, both its move and your will be retracted; the position will reset to the spot just before your last move.

**2** Force move – if you think that Houdini is taking too long to respond to your move, you can click “Force move” to make the chess playing engine move immediately; it will play the best move it has found so far.

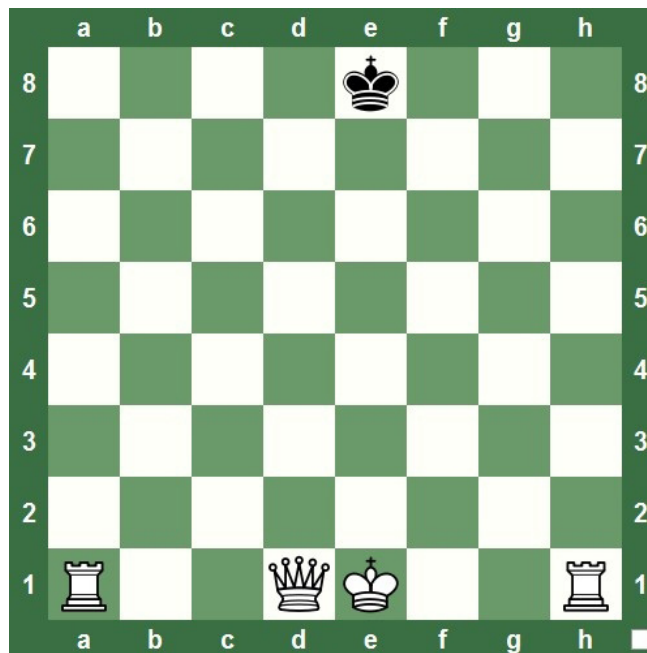
**3** Offer draw – if you think the position can't be won by either side (the material is even, neither side is making progress, whatever the reason), you can offer a draw to Houdini. The engine will generally not accept your draw offer if it thinks it's ahead positionally or materially; if

the position is truly equal or (especially) if the engine thinks it's losing, it should accept your request for a draw. Note, though, that you won't earn as many experience points or coins for a draw as you'd earn for winning the game.

**4** Resign – there will be times when you know you're losing the game and that further struggle would be useless. You can click the “Resign” command to give up and end the game immediately.

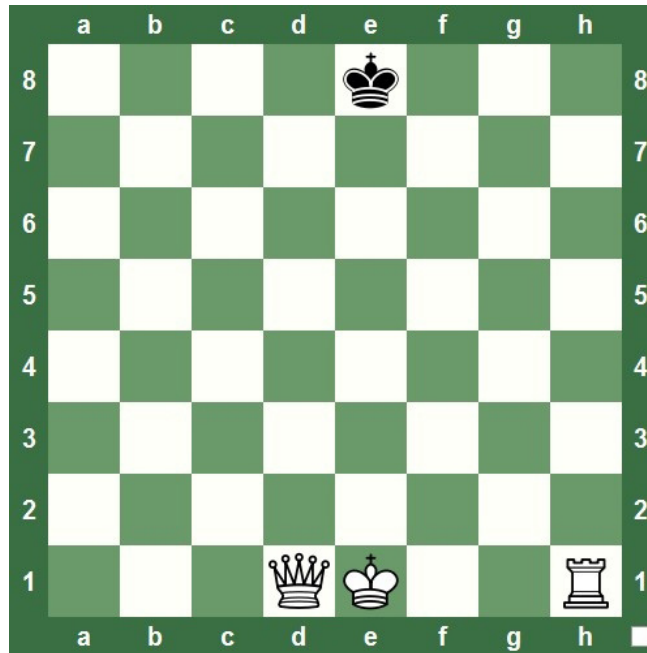
**5** Chess King will also provide help if you need it, which we'll see in a moment. First, though, let's look at the first two chess quests, the Level 1 quests in Chess King.

Here's the starting position of the first of Chess King's quests:



- I'm not going to tell you how to win this quest (in case you're a beginner), but I'll give you a hint of my own: the fastest win for you (White) in this position is two moves long.

Likewise, the second quest can also be won by White in two moves, even though you have one fewer Rook in the second position:



- You shouldn't have any problem checkmating Black very quickly in both of these positions. But if you should need help, Chess King will provide it – we'll look at hints next.

**TIP:** Unlike the first level of Puzzle Mode, you can't earn enough experience points to reach Level 2 just by beating Houdini in both Level 1 games in Quest Mode. That's why I suggest completing Puzzle Level 1 first before trying chess quests; you'll level up more quickly (and unlock puzzles and quests) by finishing the first level of puzzles.

# GETTING HELP FROM CHESS KING

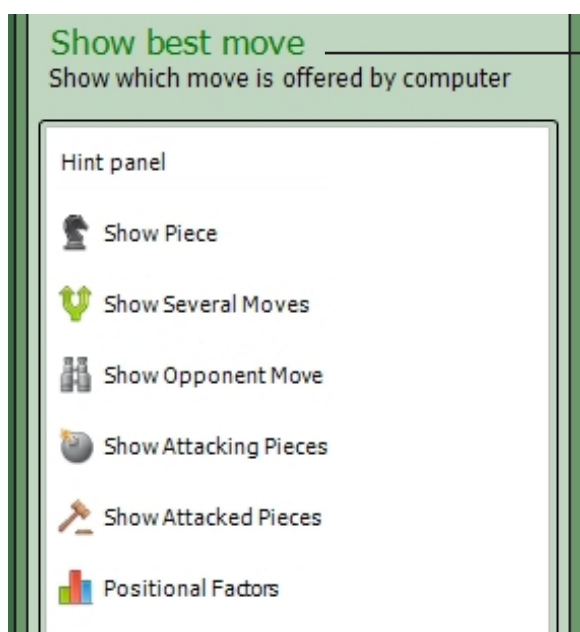
Chess King will provide hints and advice if you need some help completing a quest. But this help won't come free: asking for help reduces the amount of experience and coins you'll earn when you complete the quest and, in many cases, you'll need to pay for the advice by spending the coins you've earned!

Your profile panel will display how many coins you've earned by solving puzzles, completing quests, and winning games:

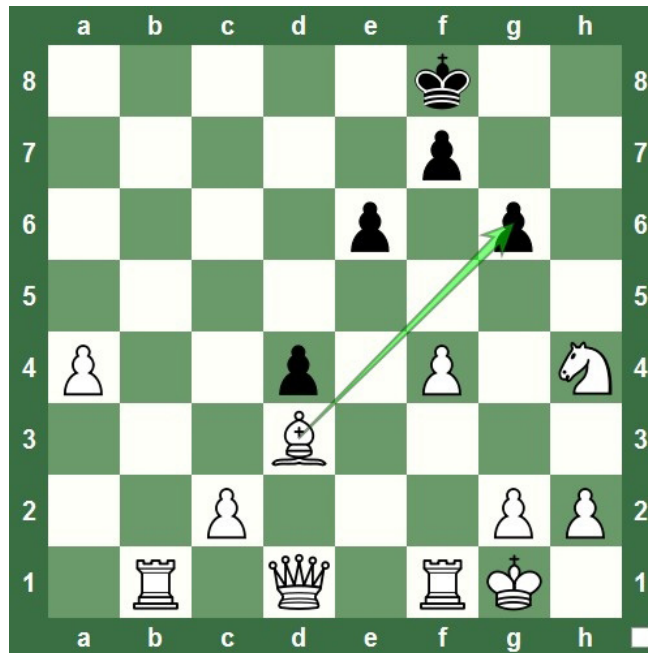


Kara, whose profile is shown above, has earned 524 coins.

- The value to the far right, beside the picture of a stack of gold, will show you how many coins you've won.
- You can spend these coins on hints in your (non-Puzzle Mode) games against Chess King. For example, when you're in Quest Mode you'll see the "Show Best Move" command, as well as several different types of advice in the white Hint Panel:

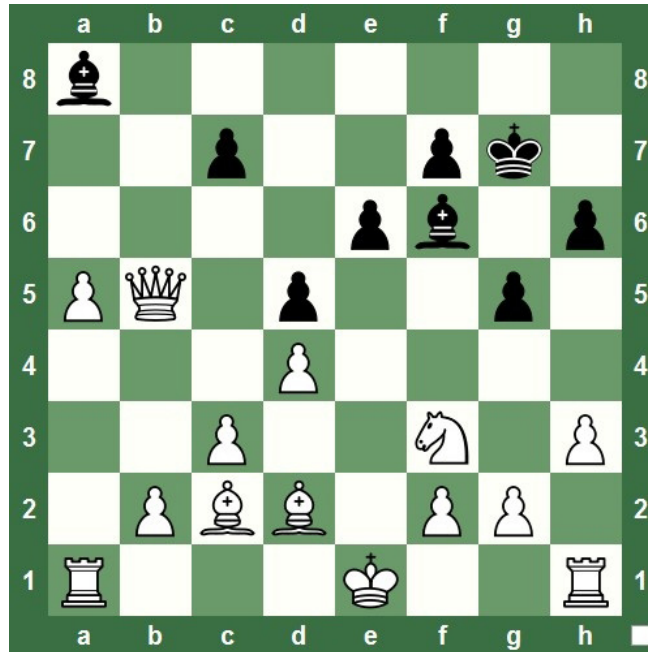


- Using the **Show Best Move** command won't cost you any of your gold coins, but using it will reduce the number of experience points and coins you'll receive if you win the game; in fact, if you use it multiple times in the same game, you may earn nothing at all for a victory. When you select Show Best Move, the Houdini 4 chess engine will draw an arrow on the screen to indicate your best move in the position:



- Try asking your opponent for your best move in a real-life game and see what happens! This is another reason why Chess King is such a great training partner – it doesn't mind when you ask it for help.
- What you might not always understand is why a move suggested by Houdini is best, but this is actually a good thing – it often makes you think about the position in a new way. In the illustration, Houdini is suggesting that you take the Black pawn on g6. You might find yourself wondering, “But won't that lose the Bishop to the reply ...fxg6?” You'd be right. But after ...fxg6, you could reply Nxf6+ (with check). Also in this position, you're ahead by so much material that it can actually be beneficial to give some of it back, snapping off the Black pawns (any one of which is a potential Queen), and clearing lines for attack. Without Houdini's help, you might never have considered any of those points.
- The hints listed in the white box each cost a certain number of coins, a price which is deducted from your total as soon as you click on the type of hint you wish to receive. There's no “chart” which tells you the price of each hint, because “white box” hints cost a variable amount which depends on the Quest Level of the quest you're currently undertaking; hints in higher level quests cost more coins than do hints in low level quests.

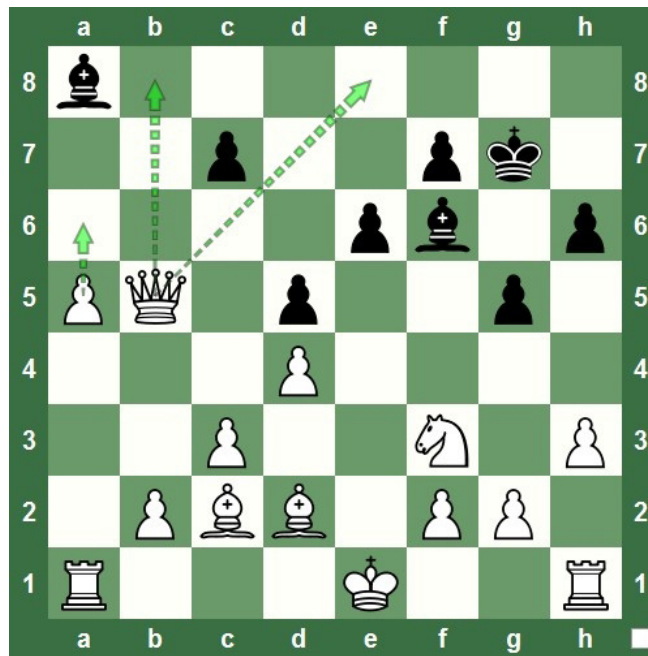
Let's look at some examples from an actual game. Although Kara is presently at Experience Level 19, she skipped a lot of lower level quests; a lot of her experience points came from solving puzzles and playing Custom and Classical games (which we'll learn about in later chapters). So she's decided to go back and play the Level 5 quests that she'd skipped over.



- It's White's (Kara's) turn to move in this position. She doesn't have any real problems here, but she's wondering about some different ideas she has. There are several things she can do here, and she's wondering which of her options is best.



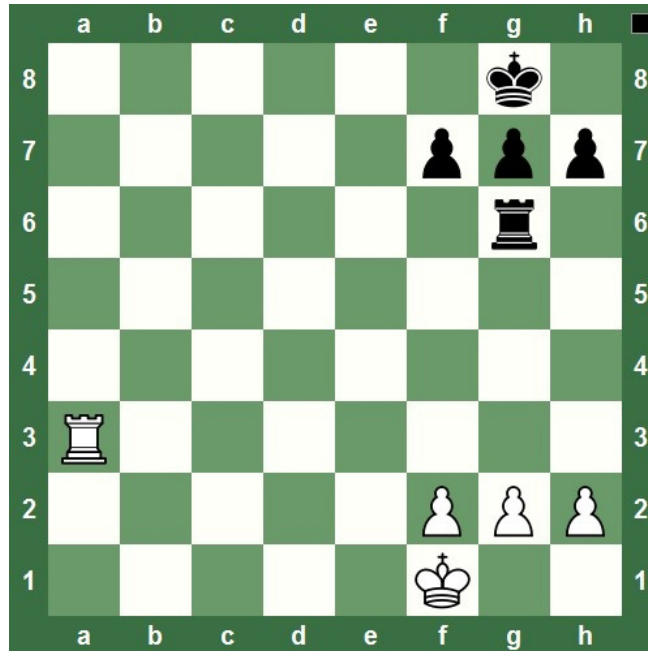
Very often a chess position will contain a number of good candidate moves (we call a possible move in a chess position a candidate move). When you select the “Show Several Moves” hint, Chess King will show you several potential moves in the position, as long as they are all fairly close to each other in terms of strength; otherwise you'll still see just one move displayed if that move is vastly superior to all others. Then it's up to you to decide which of the moves is best:



- When Kara clicks on Show Several Moves, she gets three choices from Chess King. Two involve moving the Queen, both of which Kara considered earlier before deciding that Qb8 was the better of the two. But Chess King has presented Kara with another move she'd not considered – advancing the a-pawn a step closer to promotion by playing a6.
- You'll see the word “threat” used many, many times in chess books, magazines, videos, and programs. For example, you'll see a move for White, followed by a phrase like, “White threatens Qg6, mating Black on the spot”.
- But what is a “threat”? You won't often see it defined in chess terms (many writers just assume you already know), so I'll offer you my own personal definition.
- A threat is nothing more than what you (or your opponent) would do if you (or your opponent) could make two moves in a row.

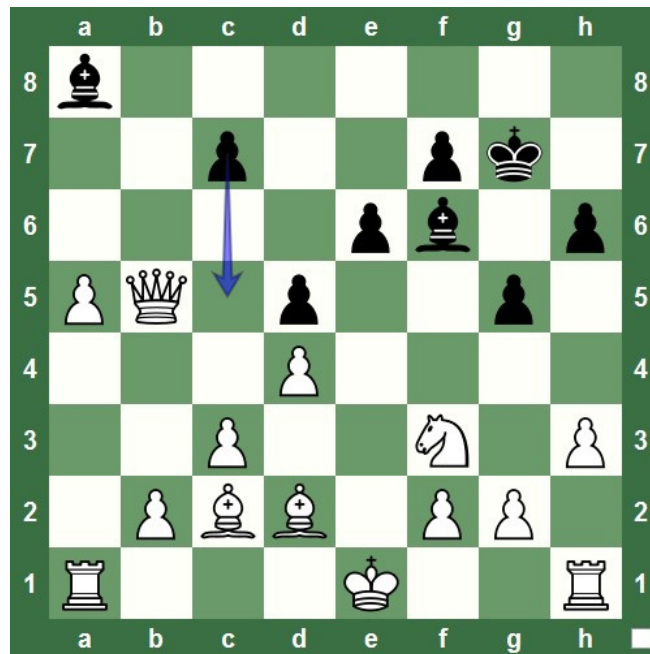


It's that simple. Let's look at an example before we return to Kara and her chess quest.



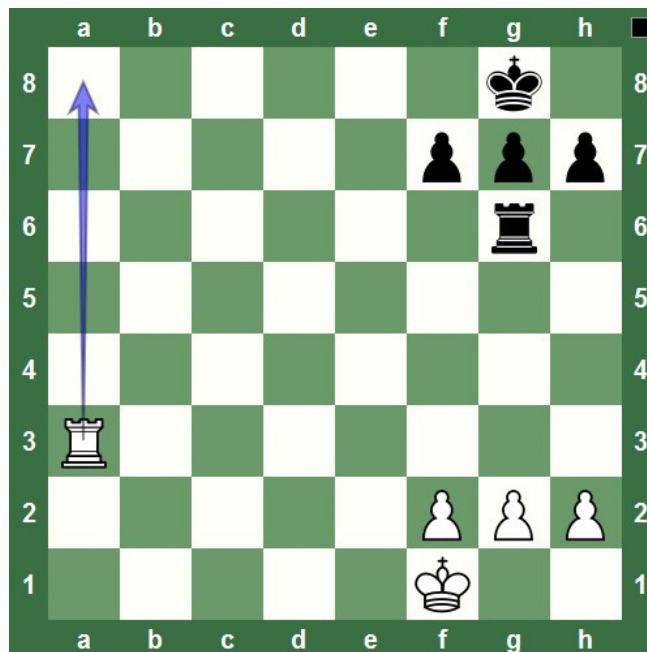
- White has just moved his Rook from h3 to a3. If he could move twice in a row (in other words move again before Black has a chance to play a move of his own), White would play Ra8 – which would be checkmate. So White's threat in this position is the move Ra8#.
- Chess King's hint box contains a feature which will show your opponent's threat in any position. When you click on “Show Opponent Move”, Chess King will display what your opponent would do if he or she (or, in this case, it since we're talking about Houdini 4) could make a second move right away – in other words, Show Opponent Move makes Chess King show your opponent's threat.

Kara clicks on Show Opponent Move; after a moment (to let Houdini think), Chess King displays this:

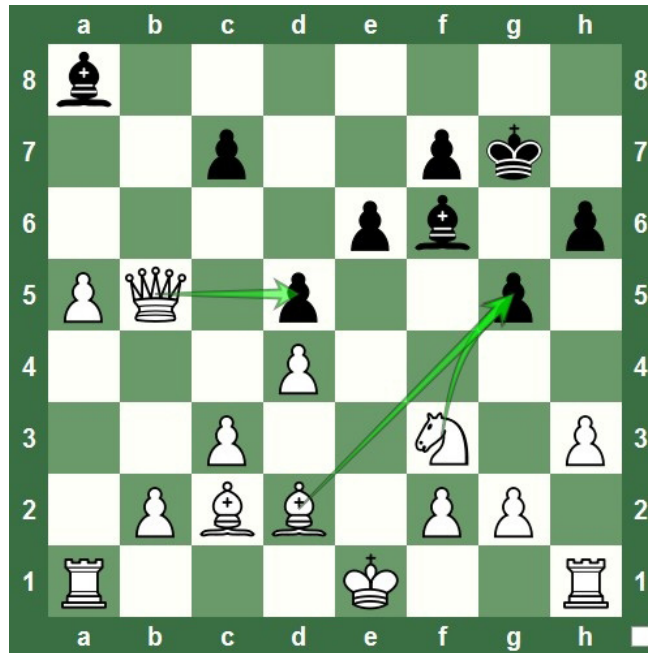


- In this case, the pawn advance from c7 to c5 isn't much of a "threat", but Kara is ahead by so much material and Black has so few options (his Bishops are blocked, most of his pawns can't freely advance, and his King is presently out of immediate danger so he doesn't want to move it) that the pawn advance is really about all Black has here.

On the other hand, when we go back to our Rook example, Chess King can easily identify White's real threat:

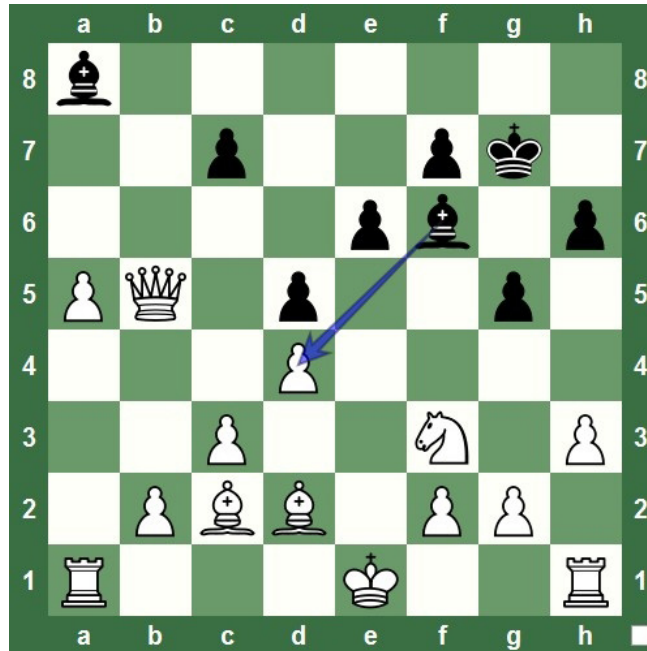


The hint “Show Attacking Pieces” will highlight all of your pieces which attack any of your opponent's forces. This can be very useful information when deciding on a move: a particular capture may be setting up a tactical combination which you might otherwise have missed:



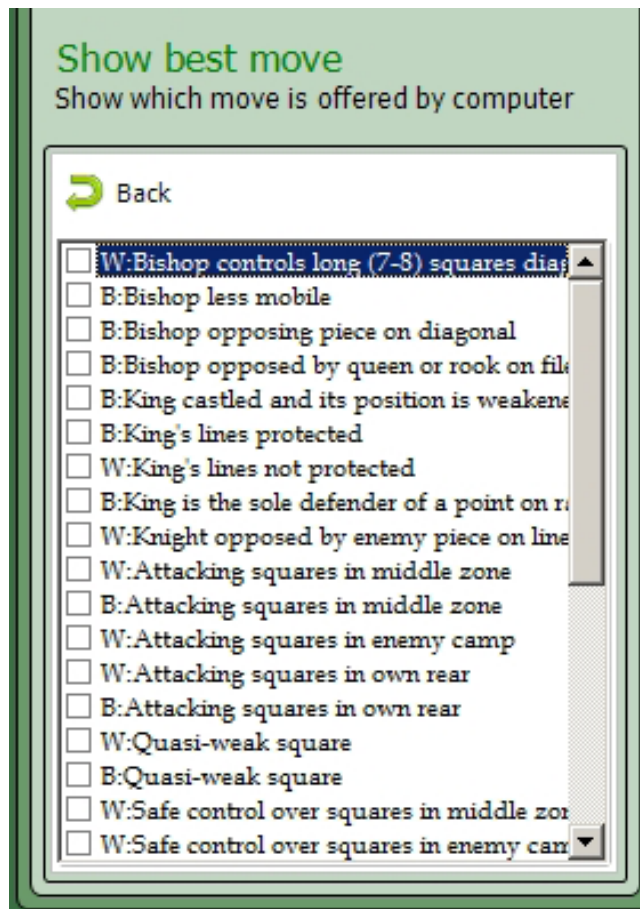
- In this case, the move Qxd5 would just be silly. But a move like Bxg5 might have some possibilities. After Bxg5 Bxg5, followed by Nxg5 hxg5, Kara would give up two minor pieces for a Bishop and pawn. This would remove one of Black's last two pieces and increase her material advantage. It's something which she considers for a few moments, but rejects – she still likes the move Qb8.

You can also get information about which of your pieces are attacked by your opponent by clicking on “Show Attacked Pieces”:

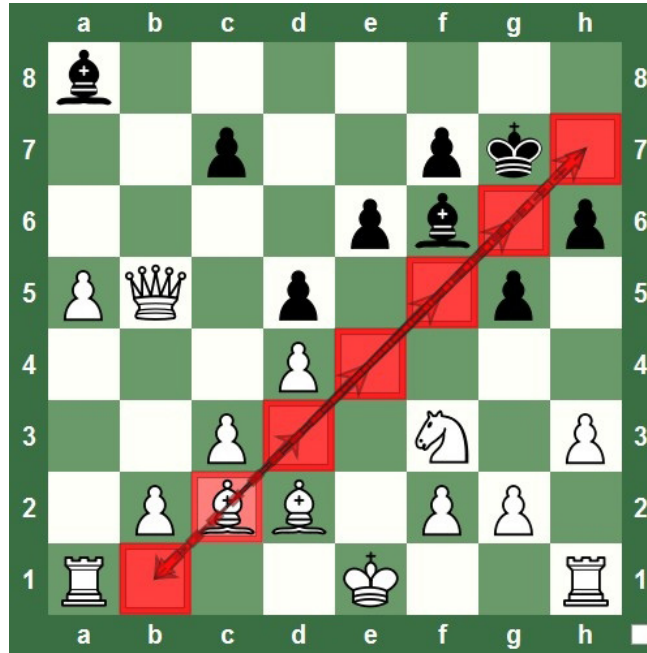


- Black really has a dismal position here. He has just two pieces left and only one of them attacks anything – a lowly pawn. Black's other Bishop and pawns don't attack anything, so Kara has nothing to worry about.

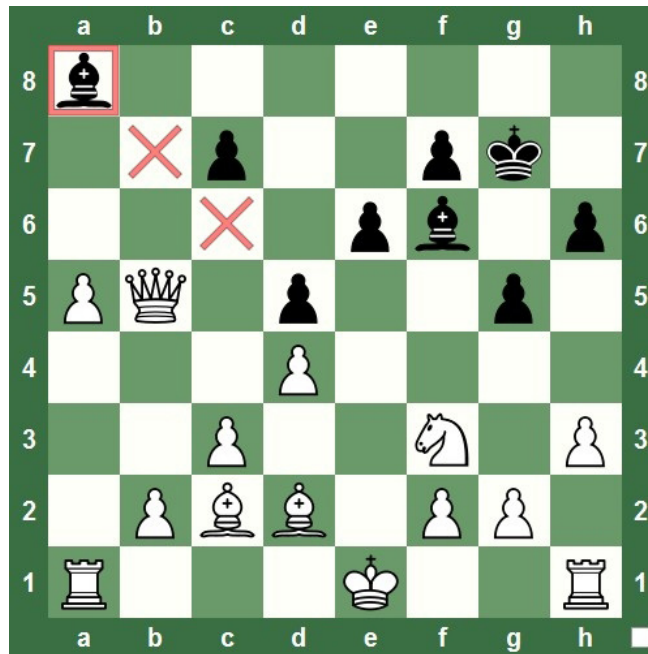
The final hint feature is very interesting and provides gobs of useful information, which is why it generally costs more coins than the other hints. It's called "Positional factors" and generally offers a whole "laundry list" of positional advantages and disadvantages for both players – in fact, clicking on it will replace the entire hint panel with a scrolling list (yes, there will usually be that many!) of positional factors which apply to the current board position:



But we're not finished – it gets even better. When you click the box beside a positional factor in the list, Chess King will highlight the board to illustrate that positional idea. For example, when Kara checks the box beside “W: Bishop controls long (7-8 squares) diagonal”, Chess King displays this:



...showing the Bishop in question and all of the squares it controls. The second entry on the list indicates that a Black Bishop is in a spot where it enjoys little mobility; when Kara checks that entry, she sees this:

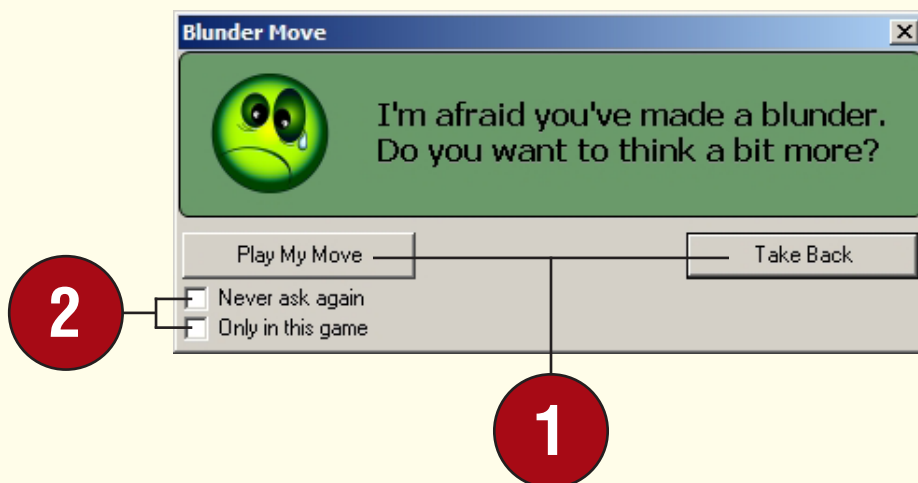


- Every single entry on this long list can be selected, and Chess King will graphically illustrate that positional idea on the chessboard. To close the list of positional factors and return to the hint box, click the green-arrowed “Back” button at the top of the list.
- This is a tremendously useful and important feature of Chess King, especially for intermediate and advanced club players who are learning positional and strategic ideas as part of their chess studies. As of this writing, I know of no other chess software program which offers anything remotely comparable nor nearly as comprehensive as this “Positional Factors” hint feature in Chess King.
- You can get a lot of useful information from Chess King through the various hint features displayed in Quest Mode's control panel. Don't forget, though, that these hints will typically cost you some of your hard-won coins, plus reduce the amount of new coins and experience points you'll earn from winning the game. You should absolutely try to figure out a position before asking Chess King for hints, and use these hint features as sparingly as you can, or else you may find yourself short of coins in a later game when you really need a hint very badly!

# SPOTTING MISTAKES: YOUR PERSONAL CHESS COACH

Everyone makes mistakes, and life seldom gives us second chances. Chess King is an exception to that general rule. When you make a bad mistake in quest mode, Chess King becomes your personal chess coach and will immediately point out your error.

If you make a move which is an obvious blunder, immediately losing material, Chess King will call your attention to it right away:



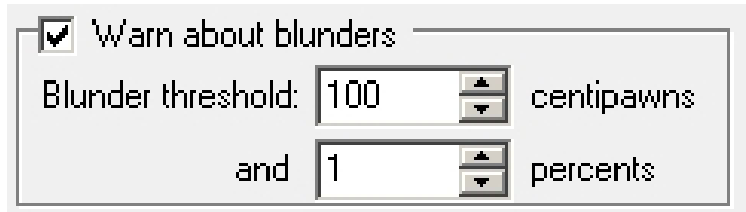
**1** You can insist on playing your move (after all, sometimes a piece sacrifice is completely justified) by clicking the **“Play my move”** button. But if you realize you've just made a mistake, you can click the **“Take back”** button instead, retract your move, and make another one.

**2** You could also block Chess King from displaying any more of these “blunder” pop-ups by checking the box beside **“Never ask again”**. If you don't want to turn this coach feature off permanently, just for the current game, be sure to also check **“Only in this game”**.

- When the coach dialogue pops up, it often obscures part of the chessboard, making it difficult for you to see why your move was a mistake. You can move the coach dialogue by single-clicking its blue bar and, while continuing to hold down the left mouse button, moving the dialogue to a new spot on the screen before releasing the mouse.



You can tweak your chess coach's settings in Chess King by clicking the yellow Menu button in the ribbon and selecting settings. You'll see a box in the “Settings” dialogue which gives you two settings which you can change:



- Both values in this dialogue determine when and how often the chess coach will appear to warn you of a blunder.
- Houdini 4 runs constantly when you play games in Chess King, constantly evaluating the current position and future possibilities. Houdini's evaluations are at the heart of the chess coach function (and, by the way, we'll take a closer look at how computers play chess later in this book).
- The “threshold” value is a number measured in 1/100ths of a pawn (sometimes called a “centipawn” by computer chess fans). Setting this for “100” (as you see in the illustration) means that the coach won't appear unless your move gives away a full pawn (or more) in Houdini 4's evaluation. Thus a bad move which gives up 75 centipawns (three quarters of a pawn in Houdini's evaluation) won't qualify as a “blunder” (even though it's a relatively serious error to an intermediate player), and the chess coach pop-up won't appear.
- The lower you set the Threshold value, the more often you'll see the coach appear. Conversely, the higher you set the value, the less often you'll see the pop-up. For example, setting the Threshold to a value of 300 means that the coach won't pop up unless you give away a minor piece (Bishop or Knight) or more. But if you set the Threshold very low (let's say to a value of 10), you'll see the coach pop up on nearly every move unless you're a very strong player.





- Likewise, the “percentage” value means that the coach won't appear unless the move you make causes your winning chances to change by more than the specified value (in this case 1% as seen in the illustration). This is a difficult value to understand properly, but it basically means that the coach won't appear if your move loses material when you're winning by a wide margin (if you're a Queen, two Rooks, and a Bishop ahead, it won't usually matter if you blunder away your Bishop – you still have more than enough of an advantage to win the game). Likewise, if you're losing big, the coach won't pop up either (if you're down three pieces, losing another pawn isn't likely to change the result). Setting a low percentage value in conjunction with a moderate Threshold value (typically 60 to 100) means that you'll generally see the coach only when you make a bad mistake in a close game.

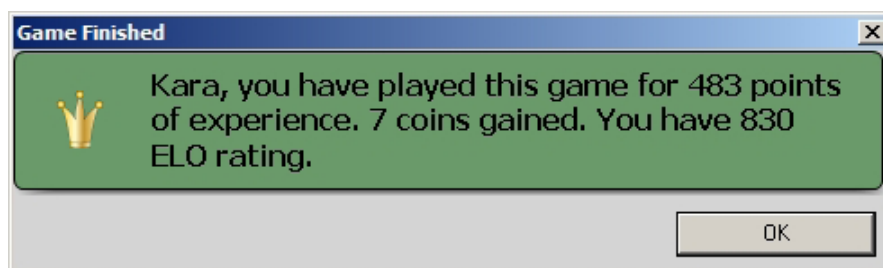
# THE END OF A QUEST – THE FRUITS OF VICTORY

To the victor belong the spoils, and in your case these include experience points and even more coins for your personal “hint fund”.

When you checkmate the opposing King in a quest game, you'll see this display appear on the screen:

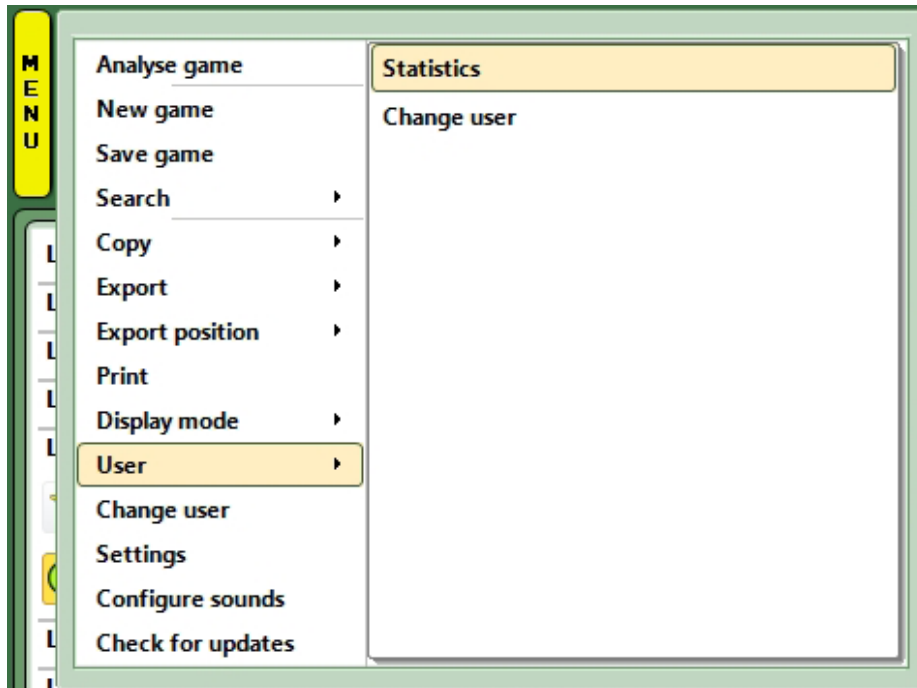


Congratulations! Clicking the “OK” button will then display your awards for your victory:

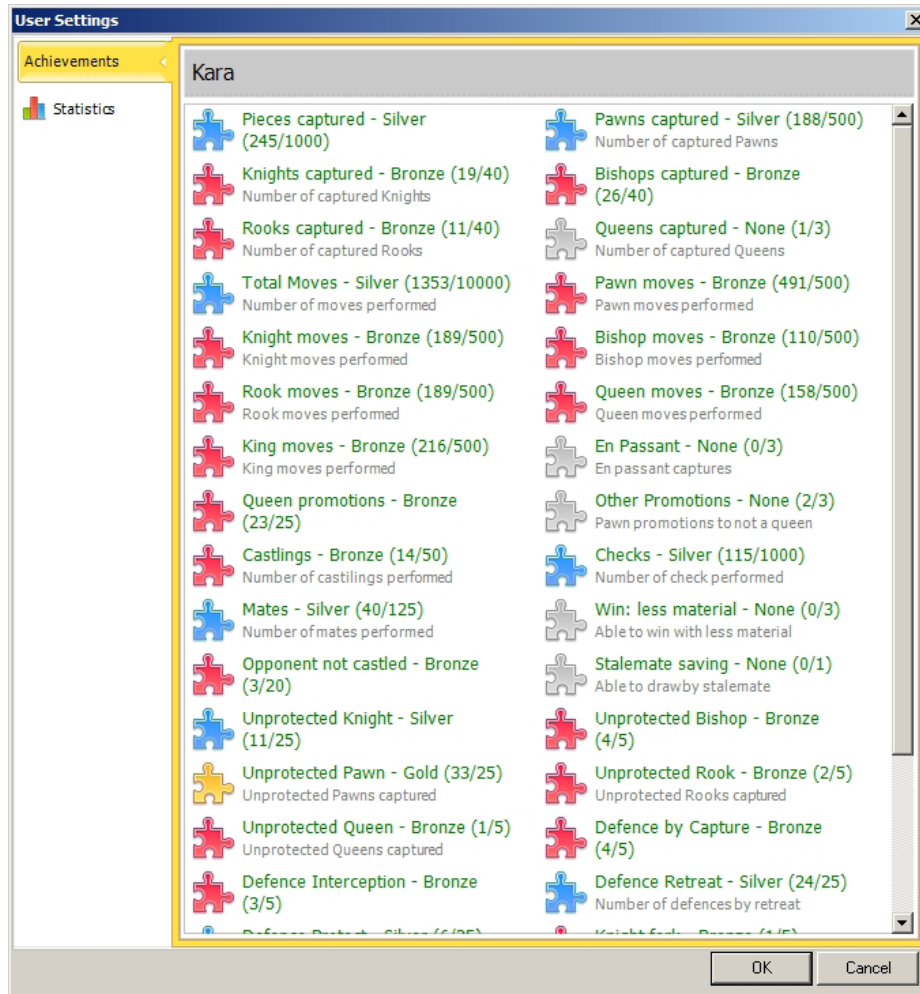


- Typically you'll receive experience points and extra coins for a victory (but, remember, these totals will be reduced if you ask for hints from Chess King during a game). The higher level quests (once you've unlocked them) are worth many more experience points than the lower level quests.

Chess King will also mention any minor achievements you've accomplished during a game, designating each achievement with an icon which looks like a jigsaw puzzle piece. You can bring up a display of all of these achievements by first clicking the yellow Menu button in the ribbon, then selecting “User”, followed by selecting “Statistics”:

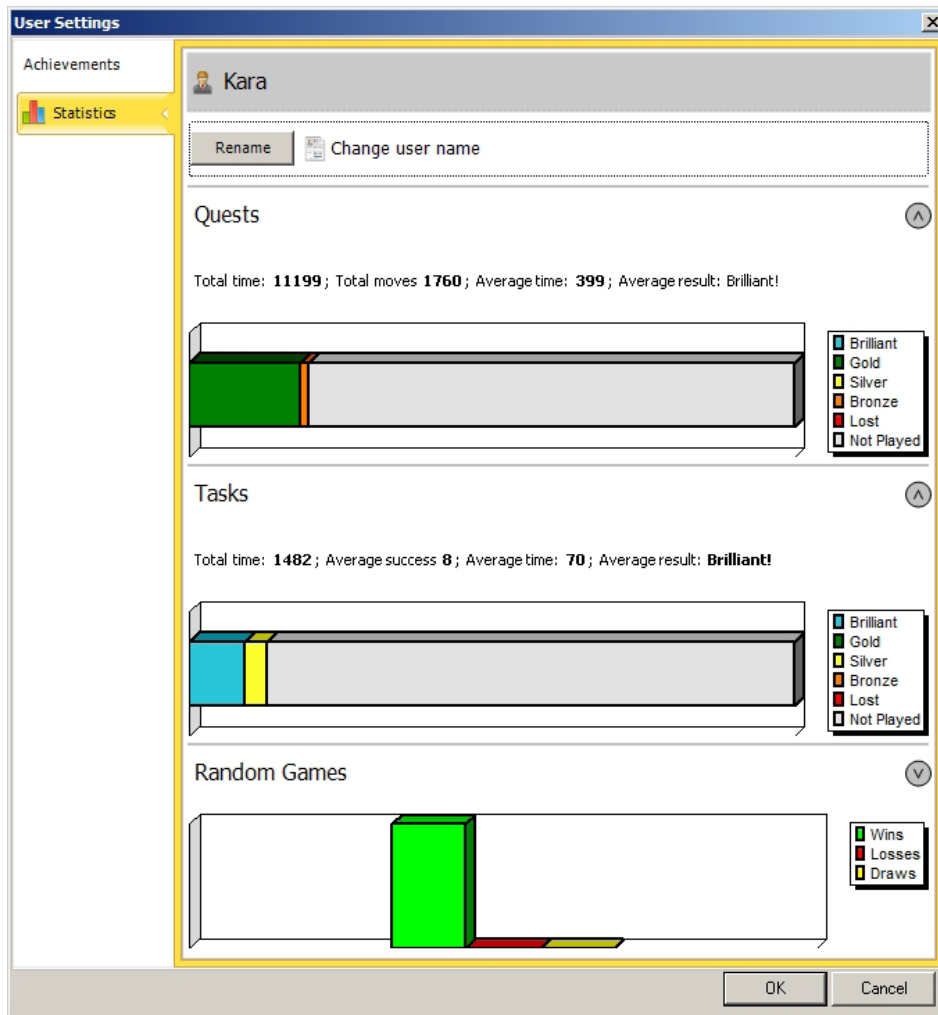


When you click “Statistics” you see a new dialogue with several functions. Clicking on “Achievements” in the left-hand panel will show all of the minor achievements which Chess King has recognized in your play:



- Each category of achievement also displays a pair of numbers separated by a slash. The number to the right of the slash is the “target”, the number of times you'll need to repeat the achievement before you receive a gold puzzle piece as a reward. The number to the left of the slash is the number of times you've actually successfully performed that particular achievement. For example, Kara already has a gold puzzle piece for capturing unprotected pawns; she needed to capture 25 of them, and has already beat the target (she's snagged 33 loose pawns so far). On the other hand, she's never yet captured a Queen, so that piece appears as a blank. Values between zero and the target earn bronze or silver pieces depending on how close the achieved value is to the target value.

Clicking “Statistics” shows colored bar graph displays of your results in quest games, random games, and puzzles:



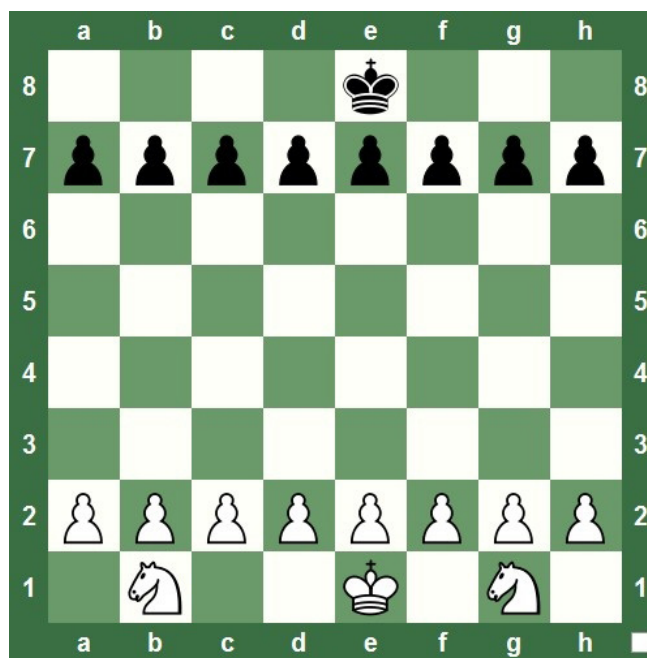
- ...with a legend beside each, which explains what each colored bar represents.
- Note that there's also a button at the top of this display which lets you change your user name if you wish.

# WHEN A QUEST ENDS, ANOTHER BEGINS!

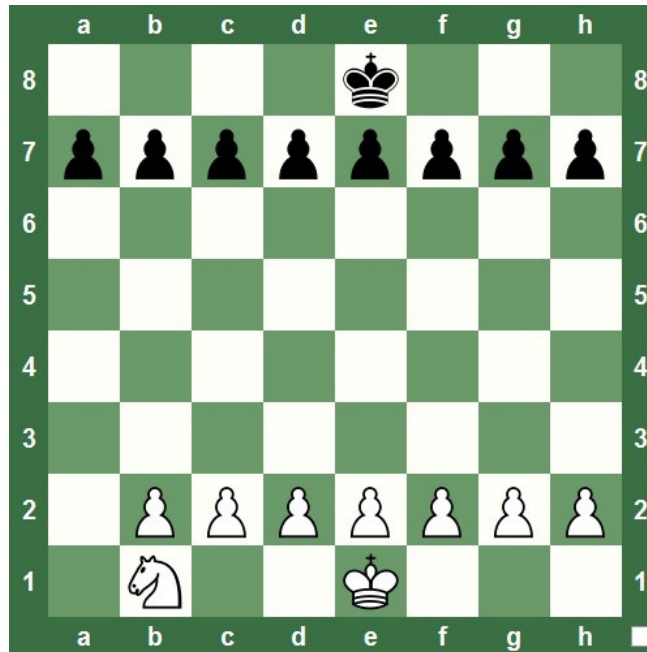
When you finish a chess quest and receive your reward, Chess King will automatically load the opening position for the next quest. You don't have to undertake it right away; remember, the quest doesn't actually begin until you click the green "Go" button.

Chess King's chess quests are grouped together according to their approximate difficulty. The first two quests are pretty easy, but each successive quest level gets a wee bit tougher than the last. If you check the description panel when you roll the mouse over a quest in the list, you'll notice that multiplying the quest's Level number by one hundred gives you the approximate Elo rating of your computer opponent. We learned earlier that Houdini will always play against you at full strength; the Elo rating value is based on the material advantage you enjoy, not some artificial internal "handicap" imposed on Houdini by the program.

The challenges become greater as you go, because the advantages you enjoy become slimmer. In Level Ten's initial quest, for instance, you have a two Knight advantage:



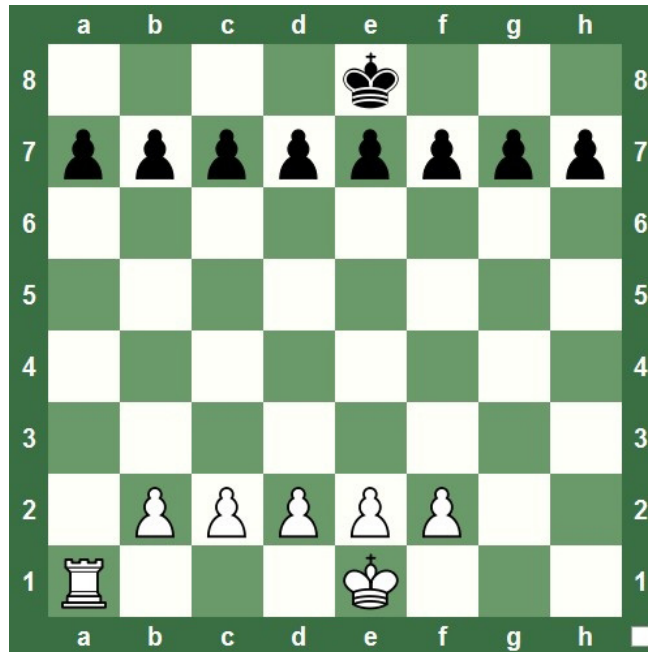
By the time you reach Level 13, the advantage is reduced to a Knight for a pawn:



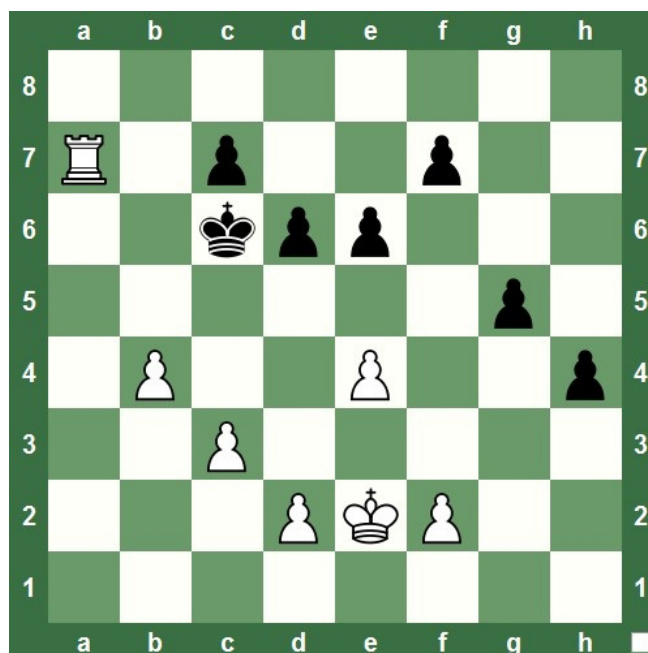
- This position is very deceptive; it surprised me the first time I played it. You might go into this game thinking it's an “insta-win” for you since you're ahead material. But Houdini will fight like a wildcat in this game (as it will in each quest you undertake) and, unless you've studied Knight and pawn endings, you may well find yourself fighting for a draw before it's all said and done (as I did the first time I tried this quest).



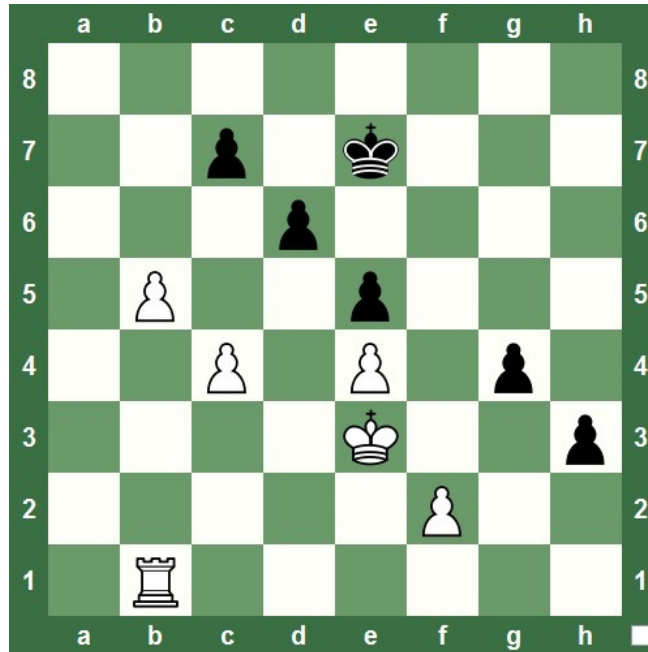
Most quest levels begin with an “endgame” challenge (even though the pieces and pawns are on their normal starting squares). Within a few moves, you'll often find yourself in a position which could easily come from a typical chess endgame. Here's the initial position from Level 18's first quest:



Within seven moves, the position looked like this:

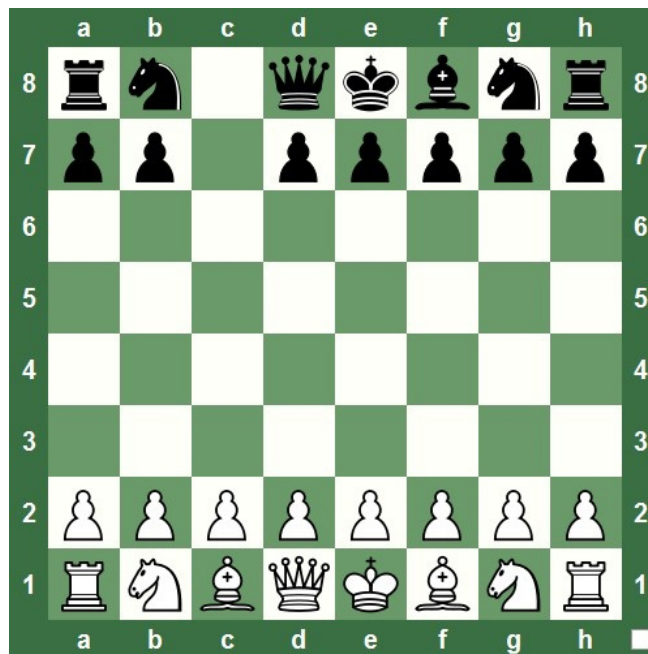


And after seven additional moves, this was the position:



- Although the game didn't start with a typical rote endgame position, with a very few moves it had become a standard endgame.

Many of the quests are quite close to being actual games, the only difference being that you start with a material advantage:



- Note that you don't have to go on every single chess quest, nor undertake them in any specific order.

# THE IDEA BEHIND CHESS QUESTS

When medieval knights (at least the storybook variety) went on a quest, they often came back a better man for having made the journey. After Sir Gawain set off in search of the Green Knight, all of the really important things that happened to him occurred before he met his foe; the things he learned about himself made him a better person and, ultimately, saved his life.

While nothing that dramatic is likely to happen on a Chess King quest, there is an underlying purpose to these chess challenges. And, as with Sir Gawain, the journey really is the true reward.

Regardless of a quest's challenge level or the material you start with, all of Chess King's quests share a central idea and a goal. Sure, you're supposed to checkmate Houdini's King, and earn coins, experience points, and awards, but there's a very practical reason for playing the quest challenges in Chess King, one which has a long-term effect on your chess play and is far more important than the immediate gratification you'll get from earning rewards in the program.

Frank Marshall, a great American chess champion, once said of chess, "The hardest thing to do is to win a 'won' game". That's a curious sounding statement, but those of us who have lost chess games when we were ahead material (myself included) know exactly what Frank Marshall meant.

Having more material than your opponent is generally a good thing, but it carries with it several potential problems (yes, I did say "problems"! ). One problem with being ahead is that you tend to relax: "Hey, I've got this game in the bag! I'm up two pawns! Hmmm, I wonder what I'll have for dinner tonight? Gee, maybe the Cubs are winning, too..." When you relax, you get sloppy, and when you get sloppy, you make mistakes. Meanwhile your opponent (who is, of course, behind in material) starts fighting for his life. He's concentrating harder, looking for (and often finding) good moves, while you're looking out the window wondering whether or not you should mow the lawn. The next thing you know, your "win" has turned into a draw (or worse!).

A second problem occurs when you're materially ahead but realize you have no idea how to proceed. Some types of material advantages have known techniques which should be applied ("techniques" in chess are "standard procedures" and guidelines which make it easy to know what to do, such as how to win when you're ahead by a Knight with pawns on both the King-side and Queenside). If you don't know these techniques (as I didn't in that Knight endgame I mentioned in the previous section), your material advantage won't mean as much since you don't know how to win with it.

Chess King's chess quests tackle both of these problems head on. In Chess King's Quest Mode, your opponent is the Houdini 4 chess engine, the strongest PC chess engine, and it's playing at full strength. You can't afford to relax and be complacent when you're playing against Houdini – one slip, a single lazy move or lapse on your part, and the engine can easily turn the tables on you in a heartbeat. If you just play aimlessly, not paying attention, you'll often be shocked when Houdini drops a bomb on you; then you get that horrible sinking feeling when you realize you're in serious trouble.

Chess King also helps you with the second problem. Since Houdini never gets tired and always plays at full bore, in many chess quests (especially those based on endgames) you will absolutely need to use proper technique to complete the quest and gain a reward. When used in conjunction with “outside” training materials (such as the Chess King series of chess training programs) which are designed to teach endgame techniques and strategic themes, Chess King makes the ideal practice partner – a chess opponent who's ready for a game any time, who doesn't make mistakes, and who also never complains when you make it play game after game in which it has a material disadvantage.

The kind of practice and training provided in the chess quests is important for players of any skill level. A beginning players can learn proper attack, defense, endgame, and mating techniques right from the start of his or her chess career. The intermediate (club) player who is learning proper play will face many interesting and instructive challenges in the quests. In fact, you can often find out what you don't know by playing Chess King in Quest Mode. That's happened to me several times, when I've been suddenly surprised by how tough it can be to win a game with a particular material advantage. Several strong players who've written reviews of Chess King have said the same thing, so I'm in good company. More advanced players will find the higher level Quest Mode challenges to be a great workout for their own technical skills, practicing the often devilish process of “winning a won game”.

**A PEEK BEHIND THE CURTAIN:** Many years ago I wrote a CD about computer chess in which I praised a particular mass-market chess program from the 1990's for having some great “hooks”, fun twists which keep a user wanting to come back again and again to keep playing and learning more about chess. Chess King's system of rewards provide outstanding hooks (the best I've seen in more than a decade), and I'm really surprised that no one ever thought of these particular hooks before now.

The idea of “experience levels” goes back to the mid-1970's at the time when paper and pencil roleplaying games were introduced to the mass market. The concept was (and remains) simple: for every challenge you (or more properly, the imaginary game character you control) successfully face, you earn points for the experience (making the journey the reward, as with Sir Gawain in that medieval epic). After you gain enough of these experience points, you “level up” and gain new skills and better abilities, which in turn enables you to meet tougher challenges. With traditional boardgames, you play a single game and you're finished. With roleplaying games, your experiences carry over from one game session to the next, encouraging you to keep coming back to play the game again and again.

When computer games were first marketed, the introduction of “experience levels” was a natural. Your character wins a battle or completes a task and gains points as a reward; earn enough points and your character “levels up”. It's become such a pervasive theme in computer gaming that most people don't even remember its paper and pencil origins. Even people in the non-gaming world understand the concept of what it means to “level up”, so much so that a television series has that term as its title.

But no one has ever applied that concept to a chess program before the introduction of Chess King! It seems like such a natural that once you hear of it, you smack yourself on the forehead and say, “Why didn't I think of that?” And when one considers the emphasis and importance that many chess players place on their Elo ratings (and the corresponding “class/category” designations; i.e. “He's a Class B player”), it's positively staggering to realize that commercial chess programs had been on the market for more than twenty years before the “experience level” concept was directly applied to this particular game genre.

It's a great little “hook”, especially when Chess King is used in a group setting by multiple users (such as in a chess club or school team setting). Players will want to come back and increase their levels, then compare their progress with that of the program's other users. The levels even provide an incentive for single players to keep coming back to Chess King, because the more you “level up”, the more challenges you unlock for continued play.

Levels also provide an incentive for players to improve their chess skills for, without continued improvement, many players may find it impossible to advance past a certain point in the software or, once an advanced level is unlocked, to successfully meet a particular challenge.

Another key concept, that of coins, is a second hook to keep players returning to Chess King. Other chess playing programs allow their users unlimited hints, letting them ask for a best move or for a threat to be displayed completely without restrictions. This can easily become a crutch for a developing player – it's so easy to ask for help that one becomes dependent upon the program's advice, and the user never learns to think for him/herself.

Chess King offers advice but requires the user to pay for it. This serves a dual function: it naturally limits the availability of “outside help” (so that the user doesn't become dependent on it) and makes the acquisition of additional coins another “hook” which keeps the user coming back again and again to play, learn, and improve.

I've used, played with, and written about literally scores of chess programs in the course of my career, and I can honestly say that Chess King's “hooks” are among the best I've seen. I'm even more impressed by the fact that these hooks aren't just gimmicks, like the “cute” (more like “condescending” in most cases) animations, music, and voice tricks used in many other chess programs. The reward system used in Chess King isn't at all “gimmicky”; it's an integral part of the software's function, it's appealing to the user, and it gives practical purpose to the repeated use of the program.

**That's impressive.**

# CHAPTER 6

## Do it yourself! Chess King's random games

- Setting up your own challenge
- Saving and loading random games
- Playing a random game

# DO IT YOURSELF!

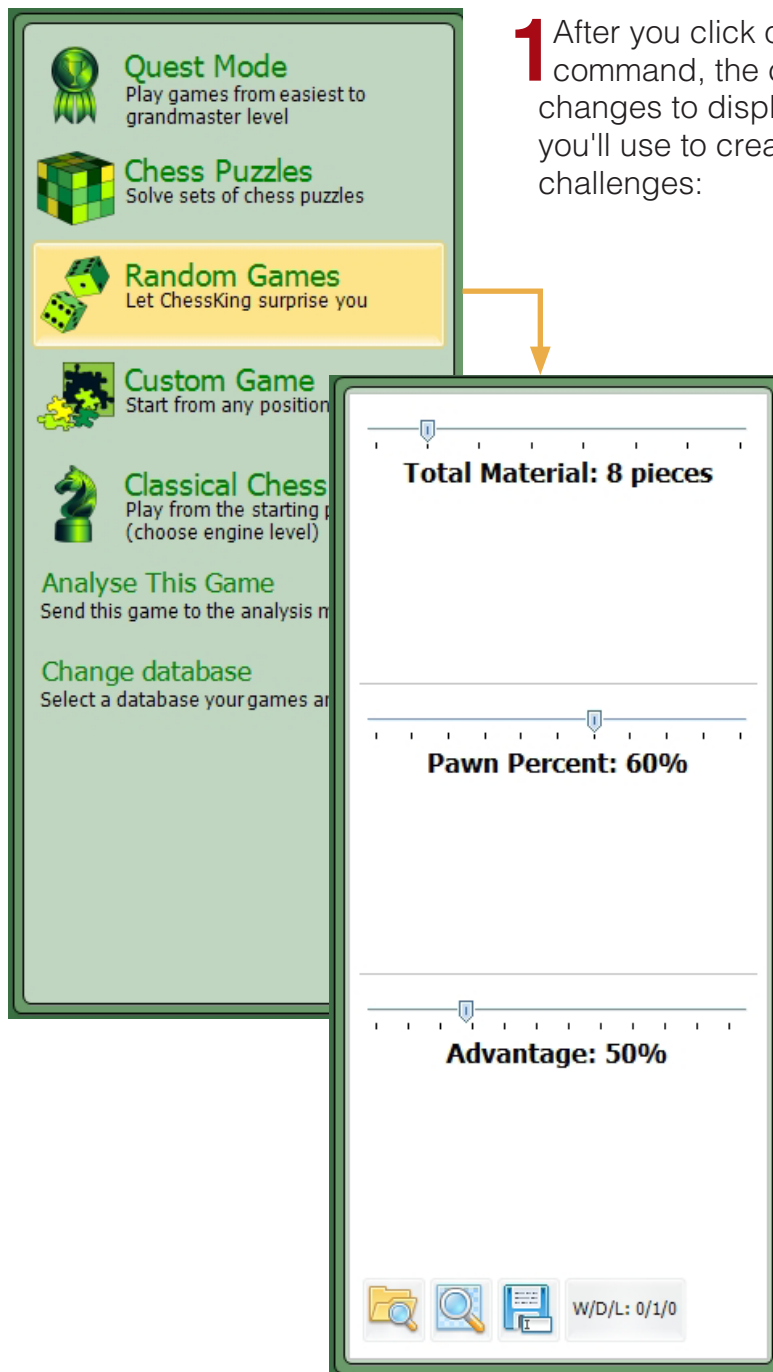
## CHESS KING'S RANDOM GAMES

Hard on the heels of Quest Mode comes a do-it-yourselfer's dream: Chess King gives you the tools to create your very own chess challenges! Let's find out how to set up and play Random Games in Chess King...



# SETTING UP YOUR OWN CHALLENGE

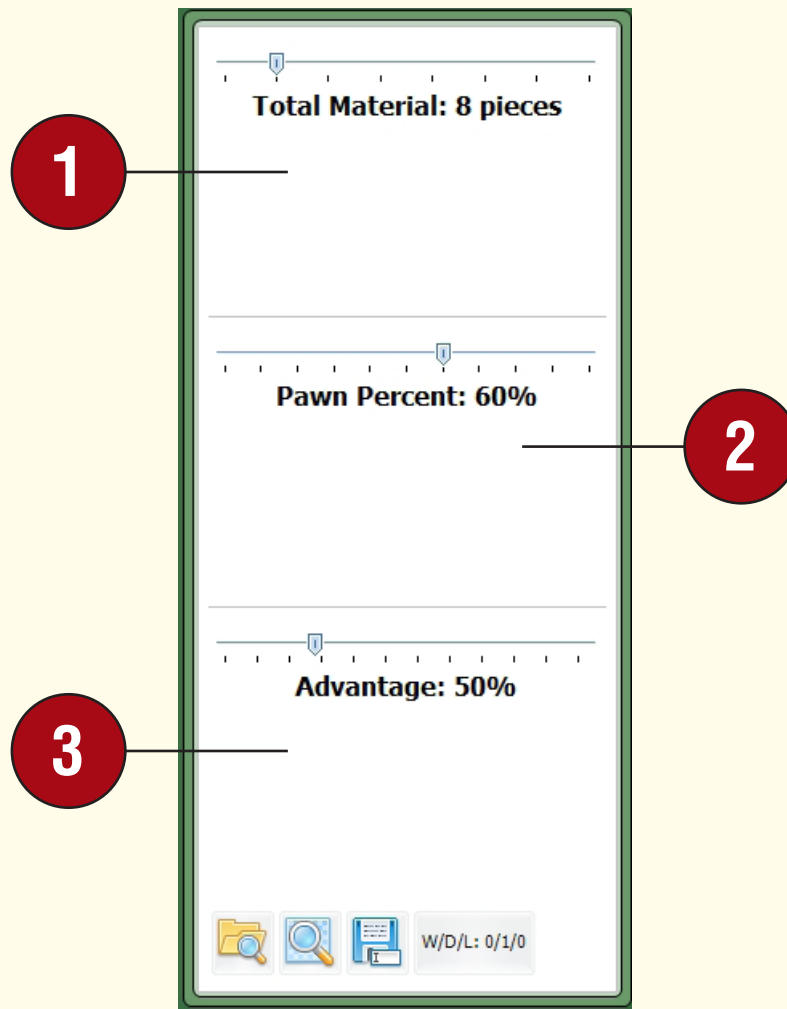
To launch the Random Game mode of Chess King, start by clicking the Train button in the ribbon, then select “Random Games”:



The image shows a screenshot of the Chess King software interface. On the left, a vertical menu lists several game modes: 'Quest Mode' (Play games from easiest to grandmaster level), 'Chess Puzzles' (Solve sets of chess puzzles), 'Random Games' (Let ChessKing surprise you), 'Custom Game' (Start from any position), 'Classical Chess' (Play from the starting position (choose engine level)), 'Analyse This Game' (Send this game to the analysis engine), and 'Change database' (Select a database your games are stored in). The 'Random Games' option is highlighted with a yellow background. An orange arrow points from this option to a control panel on the right. The control panel features three horizontal sliders with a shield icon on the left and a vertical marker. The top slider is labeled 'Total Material: 8 pieces'. The middle slider is labeled 'Pawn Percent: 60%'. The bottom slider is labeled 'Advantage: 50%'. At the bottom of the control panel, there are three icons: a folder with a magnifying glass, a magnifying glass over a document, and a document with a magnifying glass. To the right of these icons is a text box displaying 'W/D/L: 0/1/0'.

**1** After you click on the command, the control panel changes to display the tools you'll use to create your own challenges:

**2** The three sliders on the control panel let you set up a huge variety of your own practice positions. Each slider regulates a different part of the process, and the interaction of these sliders let you create a near infinite variety of possibilities.



**1 Total material** – this slider lets you decide how many chessmen will be on the board, ranging in number from 4 (with the slider set to the far left, which will create a position in which each player has a King and one other piece) to 32 (the full compliment of chess pieces for both players). Note that setting the “Total material” value the whole way to the right (to a setting of 32) is pretty pointless in random game mode, since you'll just be setting up the normal starting chess position.

**2 Pawn percent** – this controls the number of pieces on the board which will be pawns, based on the value you've set for “Total material”. Note, however, that the exact number might be rounded off. If you set the “Total material” to “10” and select “60%” for the pawn percent, you'll get a position with a total of six pawns. If “Total material” is “12” with a 60% pawn value, you'll see seven pawns, since 60% of 12 is not a whole number (Chess King must round the value off).

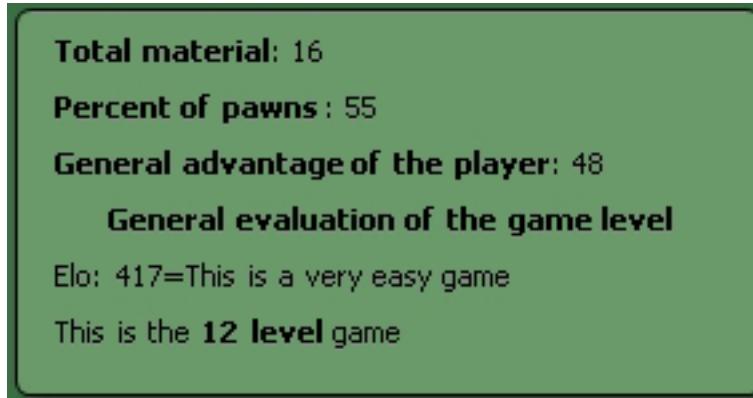
**3 Advantage** – the size of the advantage you'll enjoy in the position, based loosely on the traditional values of the pieces (Pawn=1, Bishop or Knight=3, Rook=5, Queen=9). Since the slider can be adjusted by 1% increments, you'll find that Chess King does a fair amount of rounding off the piece values to achieve an end result.

Let's give Random Game mode a try. Set the “Total material” to 16, the “Pawn percent” to 55, and “Advantage” to 48, and you should see a position which looks like this:



- Notice that the white bar above the chessboard gives a Level number (which doesn't correspond to the Quest Level values, as we'll see in a moment), as well as an abbreviation for the values you've set (all three values appear in brackets and are separated by colons).

When you roll your mouse over the control panel or description panel, the latter panel displays more information about your random game:

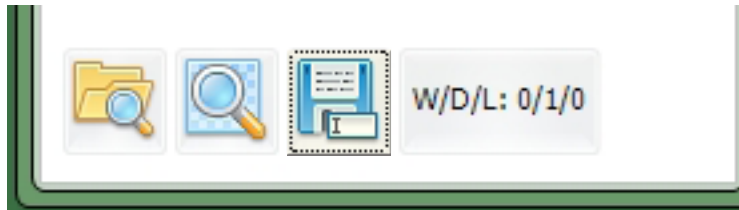


- The description panel will repeat the specific settings from the control panel, but will also give an Elo approximation which reflects the random challenge's toughness. It also displays a "Level", but the levels in this mode aren't scaled in the same way as those found in Quest Mode. The positions you set up in Random Game mode tend to be a bit easier than Quest Mode challenges, so this feature uses its own scale for Levels of challenge.

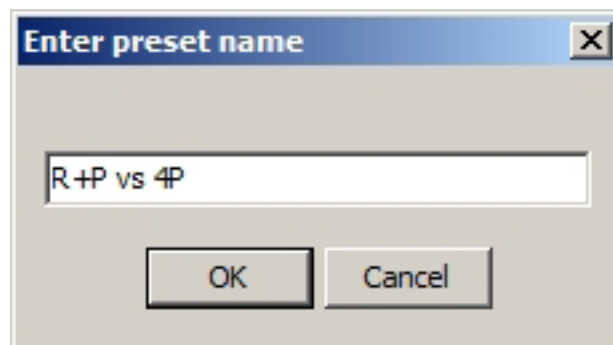
**TIP:** The Elo rating approximation and level are determined completely by the "Advantage" slider's setting: the lower the advantage, the higher the Elo and Level assigned to the game. The higher the Elo and Level, the more experience points you'll score for a win.

# SAVING AND LOADING RANDOM GAMES

Every so often you might create a random game that you'd like to save for a particular reason: maybe the challenge was especially fun to play, or you found it instructive, or perhaps you didn't win and you'd like to play a "grudge match" against the same position later. Buttons at the bottom of the control panel let you save and load random positions that you generate.

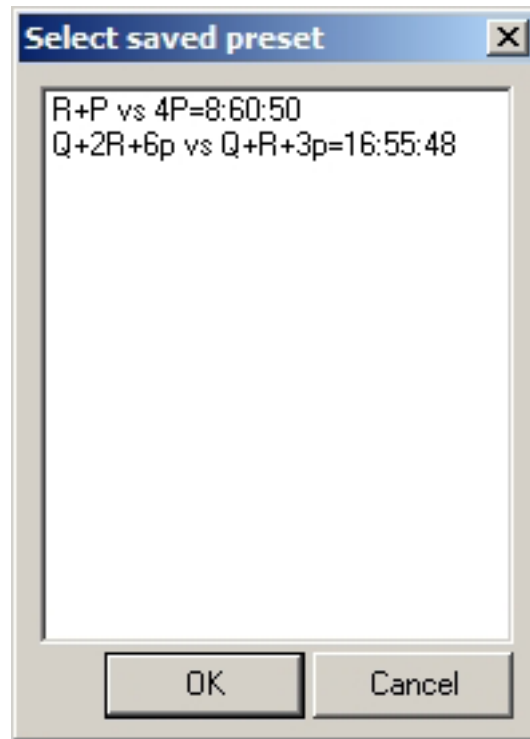


The right hand button, which looks like a computer disk, lets you save the current position. When you click it, a dialogue appears which lets you name the saved position so that you can easily identify it later:



- When naming a saved random game (also known as a "preset"), you might like to use simple abbreviations for both players' material (as you can see in the illustration above), but you can name your saved positions anything you want, so long as you can easily pick them out later. Click "OK" after you've named the position to save it.

The left hand button opens a dialogue which lets you choose from your previously saved random positions:



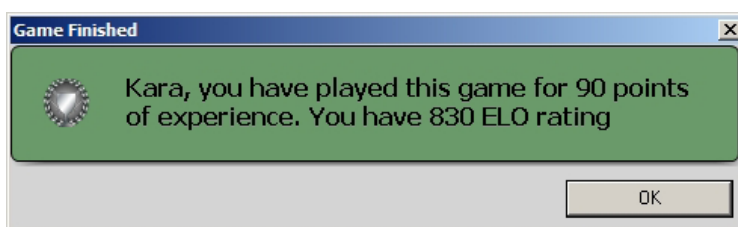
- You'll notice from the above diagram that when you save a position, Chess King adds some extra information to the name you gave it; you'll see an equal sign followed by the three numerical settings from the three random game sliders. To select a saved position, click once on it to highlight it, then click "OK".
- After you load a saved position, you might not see it appear on the chess board right away. If that's the case, click the middle button and Chess King will display the saved position on the chess board.

# PLAYING A RANDOM GAME

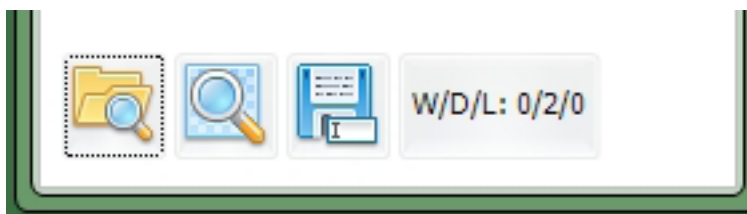
Once you've created a new random challenge or loaded one you previously saved, you're ready to play some chess! Playing in Random Game Mode is very much like playing in Quest Mode. Click the green “Go” button to start the game, then make the first move. Just as in Quest Mode, Houdini 4 will be playing a full strength against you – even a material advantage may not be enough to ensure that you win!

- When you're playing a random game, Chess King offers you the same hint options as you receive in Quest Games (see Chapter 5 for a full explanation of hints). Remember that hints can cost you some of your earned coins, and that asking for help reduces the amount of experience that you can earn from the game.

If you should win or draw the game, Chess King will award you experience points based on the level of challenge and the game's result (win or draw):



Remember – the higher the Elo and Level value of the random game you're playing, the more experience points you'll earn for a win! Chess King also keeps track of your record in your saved challenges individually, displaying it alongside the save and load buttons:



- The record is given in “W/D/L” format (Wins, Draws, Losses), with the three values separated by slashes. In the illustration we see that the player has a prior record of two draws against Houdini 4 in the challenge which is presently loaded.

# CHAPTER 7

## As sands though the hourglass – the chess clock

- The way grandpa played chess: traditional time controls
- When the flag falls, you're done - sudden death
- The pieces were a blur – blitz chess
- Now it's getting crazy – bullet chess
- Time increments – no more poorly-played endgames
- Setting the clock in Chess King



# AS SANDS THOUGH THE HOURGLASS – THE CHESS CLOCK

It's a joke as old as the hills. Two grandmasters sit for hours, motionless, staring intently at the position on the chess board between them. Finally one of them speaks up, “Oh! Is it my move?”

Believe it or not, that sort of thing used to happen quite deliberately in some very famous chess games in the 1800's. In a form of “meta gamesmanship” (as we'd call it today), young players used to deliberately take an incredibly long time to make a move, hoping to wear down their older opponents through sheer fatigue. It was to combat that sort of behavior that the chess clock was introduced. A chess clock is actually two interconnected clocks; when one clock is stopped, the other clock starts (and vice versa). After a player makes a move, he presses the button on his clock to stop it and start his opponent's clock. In this way the elapsed time for both players can be regulated.

With the advent of digital chess clocks (which can add a variable bit of time after a move, as we'll see), a wide variety of time controls are possible. Chess games still can be very long drawn out affairs (as many people traditionally think of them) or be very fast indeed; in bullet chess each player gets just one minute on his clock in which he must complete the entire game.

In this chapter you're going to learn how several chess time controls work, and how to set up and use these time controls in Chess King.

# THE WAY GRANDPA PLAYED CHESS: TRADITIONAL TIME CONTROLS

The earliest time controls required players to make a certain number of moves per hour or else forfeit the game. Back in the 1920's, the common time control among master level games was fifteen moves per hour. Each player started the game with his clock set to 11:00. He had until the clock read 12:00 to make fifteen moves; if he failed to make his fifteenth move by the time the clock read "12:00", he would forfeit the game.

But "making the time control" then bought a player another hour. If the player made his fifteen moves before his hour was up, he got another hour added to his time. He would then have to make his 30th move before his clock read "1:00". (By the way, the players got to keep any extra time and from the first hour and "carry it over". If a player managed to bang out fifteen moves in ten minutes, so his clock read just "11:10", he would then have an hour and fifty minutes to make his next fifteen moves – his extra 50 minutes from the first hour was carried over.)

Fifteen moves an hour is a pretty stately pace, positively glacial by today's standards. Over the years, traditional time controls gradually increased. By the late 20th century, the common traditional time setting was forty moves in two hours, followed by twenty moves for each hour thereafter.

# WHEN THE FLAG FALLS, YOU'RE DONE - SUDDEN DEATH

The problem with traditional time controls, at least as far as organizers of small, local chess tournaments were concerned, was that a chess game was still potentially endless (at least in theory). It made the scheduling of tournament rounds difficult and, worse yet, many organizers had to rent a facility in which to hold a tournament and could only use the room at most for two or three days (if that).

That's why "sudden death" time controls became very popular in the mid to late twentieth century. "Sudden death" refers to a time setting in which each player has a set, finite amount of time to complete all of his moves. For example, in a "Game in 60" event, each player starts the game with sixty minutes on his or her clock. That's all the time he or she gets to make all of their moves. If a player oversteps his time, he or she loses, no matter what the situation on the board might be. A player could be winning by a Queen and a Rook, but if his clock's flag (a built-in warning device used to judge when a player has used all of his time) falls because he's used all of his time, he loses the game.

This made running a chess tournament much easier. For example, a "Game in 60" tournament could space the start times for each round two hours apart and know exactly how long an event would take and when it would end (and could rent a venue accordingly).

## THE PIECES WERE A BLUR – BLITZ CHESS

Sudden death time controls for official (rated) events stayed in the "Game in 30" to "Game in 60" range, but players of casual games began to experiment with faster and faster play. This led to the development of speed chess or, as it's more generally known, blitz chess. While the term "blitz chess" originally referred exclusively to games in which each player had five minutes on his clock, today it's more generally applied to games in which each player has less than 25 minutes starting clock time.

While blitz chess traditionally appealed to younger players, its popularity has expanded in recent years to encompass all ages of chess players. It can be argued that this is due to the rise of Internet chess as the preferred playing form (while I'm aware of no studies on the subject, it's quite likely that more chess is played online than face to face these days). Another boost to the popularity of blitz chess was the introduction of digital chess clocks in the 1990's, which can be more precisely set than their analog counterparts.

# NOW IT'S GETTING CRAZY – BULLET CHESS

The ultimate form of “sudden death” time control is bullet chess, in which each player has just a single minute on his clock at the game's start. Bullet players often view their game as not only a test of board visualization and calculation speed, but also as a test of nerves between the players as each always feels as though they're under the proverbial gun for the full two minute duration of the game.

# TIME INCREMENTS – NO MORE POORLY-PLAYED ENDGAMES

A common complaint among “sudden death” chess' detractors (former World Champion Bobby Fischer among them) was that the limited time control rewarded chess opening specialists at the expense of the endgame. Players who memorized chess openings by rote could bang out their initial moves in a very short time, but chess endgames tended to be full of errors – by the time the endgame was reached, players often had mere minutes (or even seconds) left on their clocks. This even applied to the professional levels of chess play; beautiful games were often ruined by poor endgame play caused by the players experiencing “time pressure” (this was the theory, at least).

When Bobby Fischer emerged from his self-imposed chess exile in the early 1990's, he began to advocate a new form of chess timing which he occasionally claimed to have invented (this, by the way, is incorrect, as players of the Asian game Go had been using this alternate timing form for years). This “new” timing scheme became known as incremental or delay timing.

In delay timing, each time a player's clock is started (after his opponent completes a move), a small amount of time is added to the player's time. No matter what, the player will always have at least that (small) amount of time to make a move. A typical delay time control might be expressed as “30 min. + 5 sec.” That means each player has thirty minutes on his/her clock at the start of the game, and each time the player's clock is started, the player has five seconds added to his/her time.

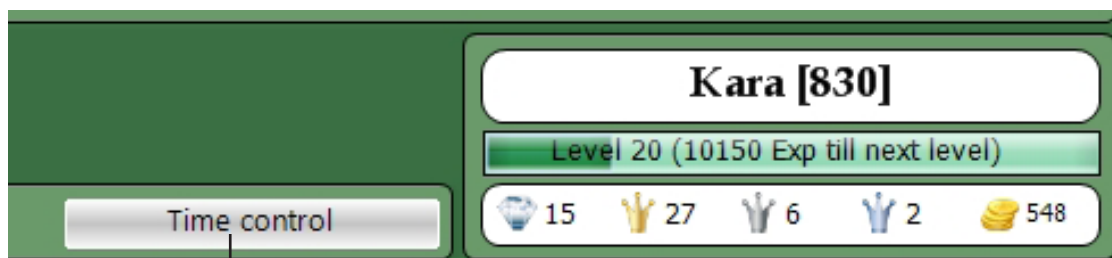
Here's how it works in practice, using the time control just mentioned. A player starts with 30 minutes on his clock; (so his clock would read 30:00). He uses ten seconds thinking about whether he wants to open with his e-pawn or d-pawn as White. After he moves, he hits his clock, and his clock now reads 29:50. As soon as his opponent makes his move

and hits the clock, five seconds is added to the White player's time, so his clock now reads 29:55. He thinks for a full minute and three seconds because his opponent played the St. George, but he finally makes a move and hits his clock; the digital display now reads 28:47. After the opponent moves and hits his clock, White's clock gets five seconds added to it, so the clock now reads 28:52.

If a player moves quickly enough, he can actually gain time on his clock. In the above example, if White had just shot 1.e4 out there for his first move and hit his clock within two seconds, he would actually have gained three seconds (for a display of 30:03) after his opponent replied with 1... a6 and hit his own clock. In a time control like 30 min. + 5 sec., a player will always have at least five seconds to make his move (as long as his clock never hits 0:00) – in theory, a player need never lose on time when using delay timing (of course, it happens all the time anyway).

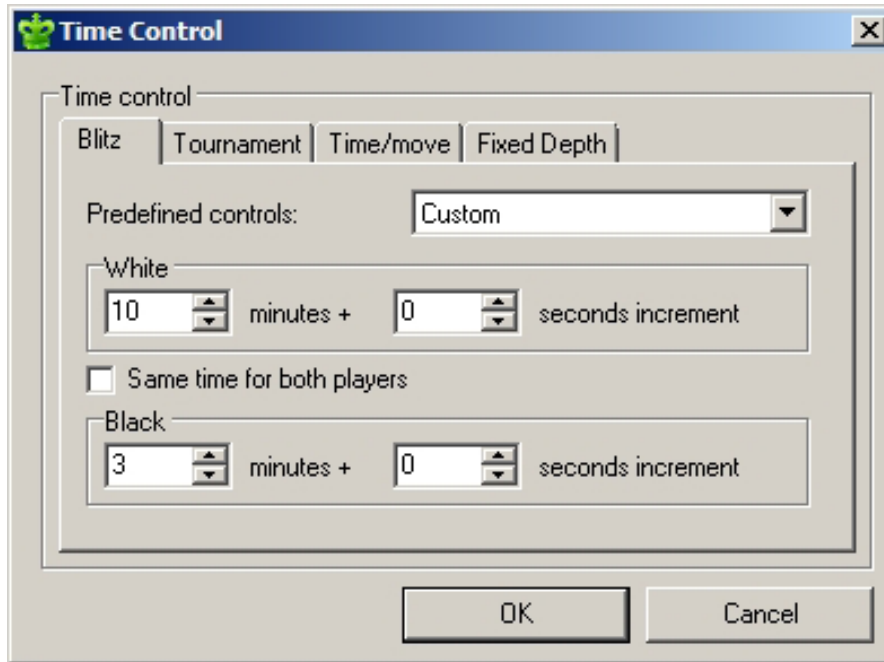
# SETTING THE CLOCK IN CHESS KING

The clocks are easy to set when you want to play a timed game using Chess King. When you enter a mode which involves actual playing (including Quest Mode, Random Game Mode, and, of course, Classical Chess), you'll see a "Time control" button appear at the far right of the analysis panel (right beside your profile panel):



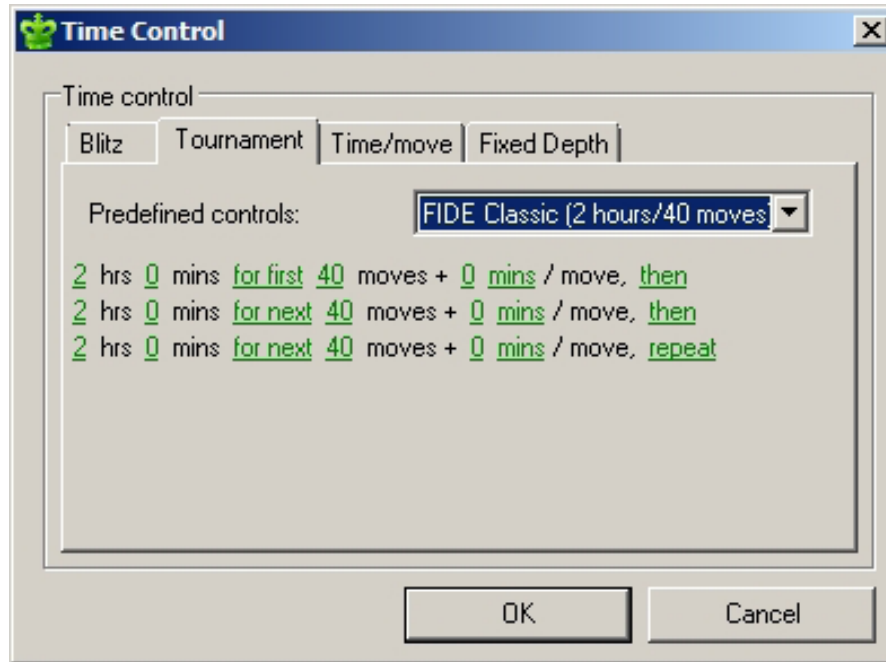
Click it to open the chess clock dialogue:

Clicking the “Blitz” tab allows you to set any “sudden death” time control (not just five minutes, e.g. traditional blitz) as well as the delay time controls of your choice.

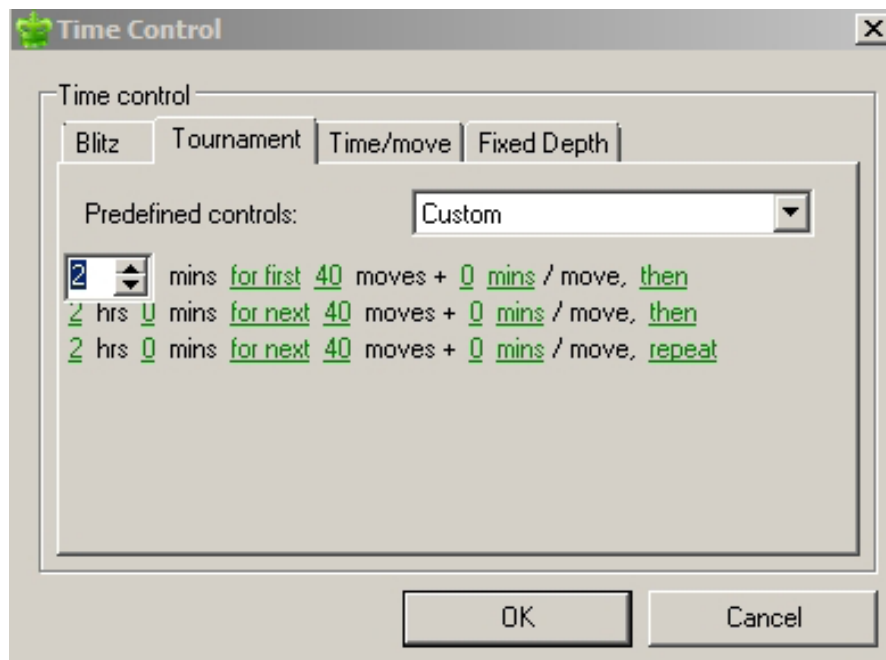


- If you want just a flat sudden death time control (no increment), set the values for White and Black and leave the “increment” value set to “0”. Note that you can set separate values for the White and Black players; many players like to limit the computer's thinking time or, more accurately, give themselves plenty of time. On the other hand, if you want both you and Houdini to have the same amount of time, you can click the “Same time for both players” box and set just one value which will apply to both you and the computer.
- You can also use the “Blitz” tab dialogue to create delay time controls. The pulldown menu beside “Predefined controls” gives you a choice of common settings (including bullet chess).

Clicking the “Tournament” tab lets you set the longer, traditional time controls we learned about at the start of this chapter:



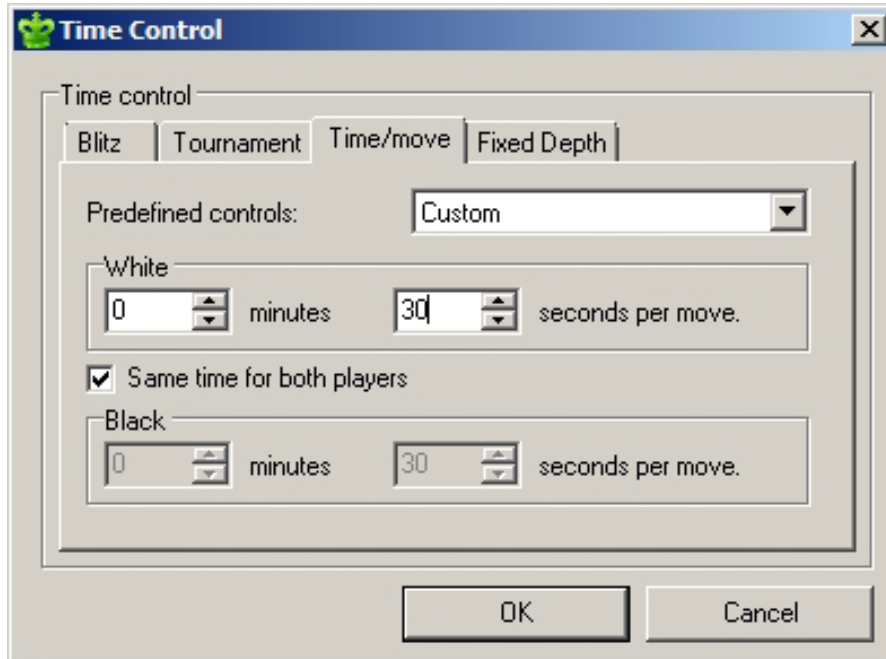
Clicking a green link in this dialogue opens a box into which you can type a number (or use the arrow buttons to set a value):



- And, as with blitz controls, a pulldown menu lets you select from several predefined controls.

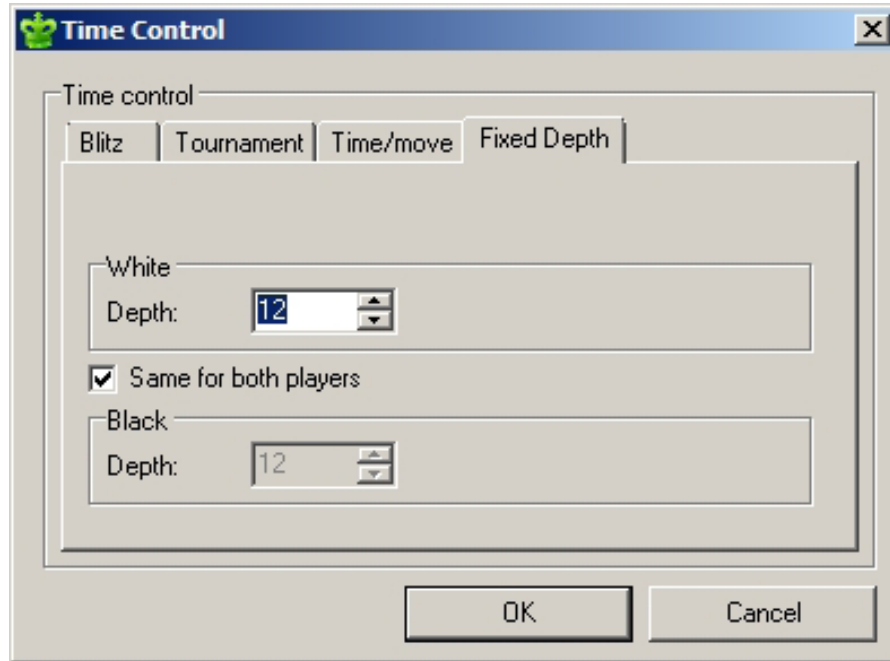


The “time per move” tab refers to a separate time control (which we've not yet discussed) called “Rapid transit chess”, in which each player has a certain number of seconds in which to make a move (rather than a set time for the whole game). This form of chess was extremely popular among chess players in New York during the 1940's and 1950's (before blitz chess became popular).



- For example (using the setting in the illustration), each time it's your turn you'll be required to make a move within thirty seconds; if you don't, you lose the game. Here again you'll find a pulldown with several presets.
- I'm a big fan of “rapid transit” games; I own a couple of special chess clocks which use only rapid transit timing. I encourage you to give this a try; rapid transit chess is a lot of fun.

Finally we have the “Fixed depth” tab which allows you to limit the depth (in half-moves, or “plies”, which we'll learn about later) to which the computer will search:



- Since Houdini 4 Pro will often search to a depth in the high teens almost instantly (dependent on your computer hardware), some players find it beneficial to limit Houdini's search depth in this manner.
- Before moving on, we should note that Chess King keeps track of clock settings for different users, and will remember your own individual settings from session to session.

# CHAPTER 8

**Chess ratings – it's like  
“what's your sign?” With numbers**

# CHESS RATINGS – IT'S LIKE “WHAT'S YOUR SIGN?” WITH NUMBERS

Chess players who compete in official events get a numerical rating. This is sometimes called the player's Elo rating (which is named for Arpad Elo, the mathematician who created the rating system; thus the word is pronounced “EE-low”, not “ee-ell-oh”, which was instead the abbreviated name of a popular 1970's rock band). Ratings are incredibly important to some chess players, so much so that many chess players upon meeting another player for the first time, don't say, “How do you do?” or “Pleased to meet you!”; instead, they instantly ask, “What's your rating?”

To understand the point of playing rated games in Chess King, you'll need to understand just a bit about the chess rating system. For a full explanation of the rating system, please consult any number of chess websites which explain the system in painfully exacting detail, or books such as the U.S. Chess Federation's Official Rules of Chess. We'll instead content ourselves with a capsule summary here, just enough so that you understand Chess King's rated games.

Using the USCF as a base, players rated 1200 or lower are considered beginners. Players from 1201 to 1999 rating are known as “class” level players, sometimes known also as “club” or “untitled” players. Players rated 2000 to 2199 have earned the title of Expert, while players 2200 and higher are Masters.

Players gain rating points when they win games, and lose rating points when they lose games. It's that simple.

According to the USCF Official Rules of Chess, “The rating system is based on the theory that the rating difference between two players corresponds to their expected score with each other.” Translated, that means that the higher rated of two players is expected to win, and the larger the rating difference, the more likely it is that the higher rated player will win the game.

This rating difference acts like a “risk-reward” system. The bigger the rating difference, the more rating points the lower rated player will gain if he wins a game and, conversely, the more rating points the higher rated player would lose. On the other hand, if a very high rated player beats a very low rated player, only one rating point will change hands (you will always lose at least one rating point if you lose a game, no matter what, and will always gain at least one point for a win).

The ultimate result is that a chess rating is nothing more than a gauge of the expected outcome of a chess game between two players. It's not

a measure of intelligence, it's not a valuation of your worth as a human being – in fact, a chess rating doesn't mean a thing unless it's compared to another player's rating, and even then it's just a measure of a game's expected outcome. The bigger the difference between two players' ratings, the more likely it will be that the higher rated player will win the game.

Every Chess King user starts with a basic rating of 800. The way to change this rating is to play rated games with Houdini (and we'll learn how to play games with Chess King in the next chapter).

I'd like to share some comments about ratings and the engine included in Chess King. Regardless of which Chess King you have, the engine at its maximum strength is extremely strong. That's Houdini 2, 3 or 4 or 4 Pro. Any of them could likely beat any Grandmaster. Houdini plays at its true strength only when you select the strongest level. That's between 3000 and 3400 ELO. To save processing power, Chess King uses an opening tree, based on the GigaKing database so Houdini starts playing after the opening theory.

For playing at lower ratings, in any chess software, a program is used to «weaken» Houdini and to make mistakes on purpose so as to approximate a weaker player. So if you select 2200, there is a program which takes the (for example) 4 best moves (as chosen by full strength Houdini) and uses a probability percentage to decide which move to play (for example a player of 2200 may alternate between 1st best move and 2nd-3rd-4th best moves). When you're talking about a player of 1750, that player makes considerably more mistakes so some additional errors are introduced. In fact, if you choose any rating below approximately 1500, it's not Houdini at all playing, it's a weakened engine, as it's not possible to use a reliable statistics method to approximate a player of 1500, since there are too many errors that come up.

So while the ratings in the high range 2200-2600 approximate real USCF or FIDE ratings, for lower ratings it's not always the same. What's sure is that if you see your Chess King rating go up, that's a good sign. And if you find it too easy to win against the engine at any rating, just increase the rating little by little, and you will soon find a worthwhile opponent capable of giving you hours of learning and enjoyment.

# CHAPTER 9

## Classical chess – the ultimate challenge!

- Setting up a classical game
- Playing chess with Chess King
- Some classical chess questions and answers

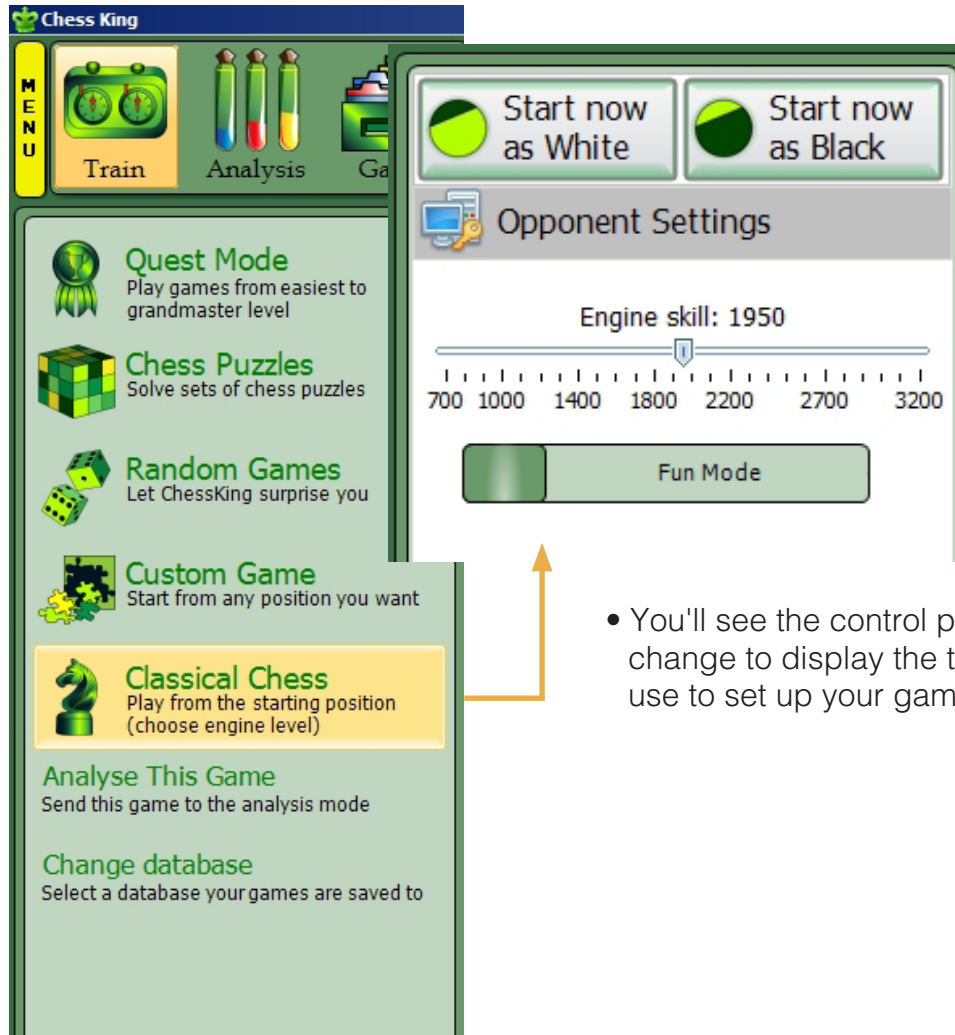
# CLASSICAL CHESS – THE ULTIMATE CHALLENGE!

It's great to hone your chess skills by solving puzzles, completing quests, and playing random games (as we've seen in previous chapters). But the time has come for the ultimate challenge, the big test – a classical chess game with Chess King!

“Classical” chess refers to a traditional chess game in which both players, you and your electronic opponent, start with the full compliment of sixteen chessmen. While Chess King does give you tools with which you can select the skill level of your computerized sparring partner, classical chess is a true test of your chess skills. All of the individual elements you've learned in the Chess King training modes (attacks, combinations, defenses, strategic themes, endgames, checkmates) are combined in the complete games you'll play from start to finish.

# SETTING UP A CLASSICAL GAME

To play a classical chess game, go to the Train menu and select “Classical Chess”:

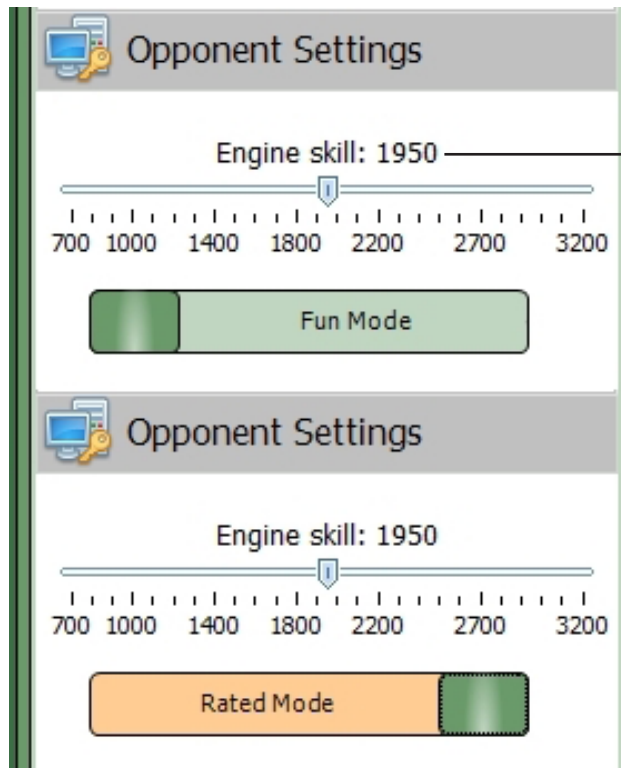


- You'll see the control panel change to display the tools you'll use to set up your game:

- Before going any farther in this dialogue, this would be a good time to double-check (and possibly reset) the time controls for your game, as we learned in Chapter 7. You'll recall that the button for the clock setting dialogue appears in the analysis pane, right beside your personal profile pane.



The classical chess controls consist of three parts. The first thing to do is select whether you want to play a casual (“fun”) game or a rated game. Clicking directly on the two-position button switches back and forth between the two play modes, as seen in this combined view:



The slider lets you choose an approximate Elo rating for your computer opponent. The values from which you can select range from a minimum of 700 to a maximum of 3200.

You'll notice that if you select a value from 700 to 1900 your opponent will not be Houdini. The Houdini 4 program is the strongest chess engine available for home computer use; it's so strong that it can't be "tweaked down" to play at Elo levels lower than about 1950. So at these (relatively) lower levels, you'll be playing against another (weaker) chess engine which has been included for these playing purposes. (Note that the analysis functions [which we'll learn about in a later chapter] always use the Houdini 4 engine.) At the 700 through 1900 level, you'll notice that the engine is called "Robot" followed by the Elo rating you've selected:



At higher levels, you'll see that Houdini is your opponent (and the rating approximation will still appear as part of the engine's name):



- Finally, the two buttons at the top let you play either White or Black. Unlike many other play modes in Chess King, there's no large green "Go" button below the board – clicking the "Start now" buttons will begin your game immediately.

# PLAYING CHESS WITH CHESS KING

When you click a “Start now” button, your game will begin. If you're playing Black, your electronic sparring partner will make the first move automatically. If you're White, you clock will start running, so you'll likely want to make a move without delay.

Your Chess King opponent will use the chess tree to play the game's opening moves, selecting a move from the tree at random, until you make a “non-book” move (one not in the tree), at which point the engine will need to begin generating moves on its own. As you play, your chess coach may pop up to warn you when you make a bad move (see Chapter Five).

You'll also have access to the full compliment of hint features we learned about in Chapter Five. This applies even to rated games, and in rated game mode Chess King will even tell you how many coins it will cost to use a particular hint.

While you're playing a game with Chess King, you'll have your choice of two different ways to display the moves in the notation panel, controlled by the check box marked “Advanced” near the panel's upper right corner:

Move	White	Black	Score
1.	e4	e5	+0.00
2.	♟f3	♞c6	+0.18
3.	♜b5	a6	+0.07
4.	♜a4	♟f6	-0.13
5.	O-O	♜e7	-0.20
6.	♞e2	O-O	+0.02
7.	c3	b5	-0.30
8.	♜b3	d6	-0.21
9.	d4	♜b7	-0.01
10.	♞d1	exd4	+0.16
11.	♟xd4	♟xe4	+0.20

**1** Unchecking this box will display the game's moves in a simple two column format using a large font:

**2** which shows the game's moves along with the chess engine's analysis of the position (which we'll learn about later) directly below each move.

Checking the “Advanced” box displays the moves in the regular notation style we've seen used in Chess King's other modes and features:

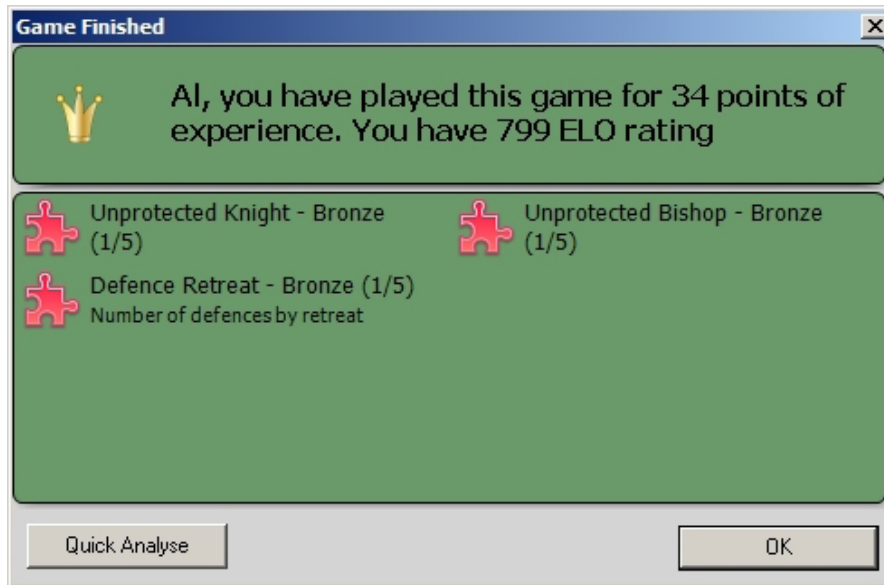


- ...which uses a smaller font, displays the moves in a “paragraph” format, and shows the computer's evaluation in dark blue after each move.

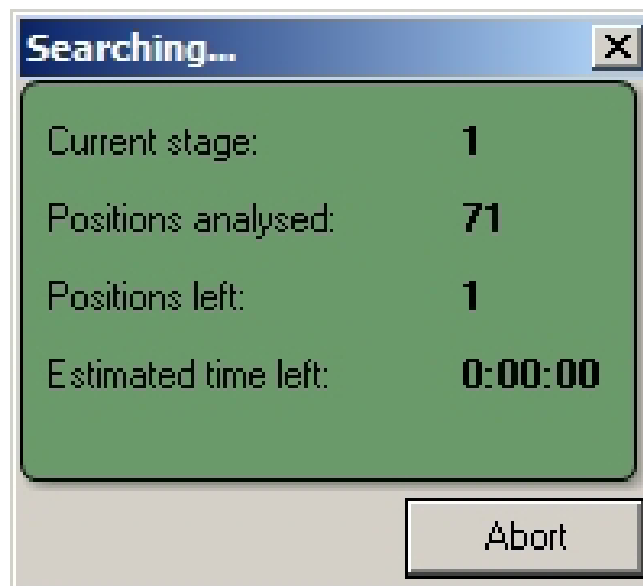
When you win a game, Chess King will congratulate you:



Clicking “OK” will then display the experience points and any other awards you've earned, and will show your current rating (even in “Fun” mode in which your rating won't change, but you'll still see your current Elo rating):



You have the option here of clicking “OK” to just exit from the awards dialogue or clicking the “Quick Analyse” button; the latter will start Houdini 4, which will perform a fast analysis of your game. If you select the analysis option, a progress dialogue will appear on your screen for a few moments:



...after which Houdini's analysis will be added to the notation of your game:

```

Advanced
[...] 1.e4+0.00 1...e5+0.32 2.♟f3+0.18 2...♟c6+0.22 3.♟b5+0.07
3...a6+0.16 4.♟a4-0.13 4...♟f6-0.23 5.O-O-0.20 5...♟e7+0.01 6.
♟e2+0.02 6...O-O-0.08 7.c3-0.30 7...b5-0.20 8.♟b3-0.21 8...d6-
0.09 9.d4-0.01 9...♟b7-0.08 10.♟d1+0.16 10...exd4+0.20 11.
♟xc4? -0.41
[1 1.cxd4 ♟a5 12.♟c2 ♟d7 13.b3 b4 14.a3 ♟b5 15.♟xb5 +0.26]
11... ♟xe4? +2.13
[1 1... ♟xd4 12.cxd4 ♟xe4 13.f3 ♟f6 14.♟c3 ♟e8 -0.41]
12. ♟xe4+2.47 12... ♟a5+2.75 13. ♟e1? +1.12
[13. ♟d5 ♟xd5 14.♟xd5 ♟c4 15. ♟e1 ♟e5 +2.88]
13... ♟d7? +2.13
[13... ♟xb3 14.axb3 ♟d7 15. ♟e2 ♟f6 +1.12]
14. ♟c2+2.19 14...c5+2.77 15. ♟f3? +1.55
[15. ♟f5 ♟fe8 16. ♟e5 ♟f8 17. ♟g3 +2.63]
15... ♟c4+2.21 16.b3+1.83 16...b4? +4.50
[16... ♟xf3 17.gxf3 ♟b6 18.♟f4 f5 +1.75]
17.bxc4+5.19 17... ♟g4+5.79 18. ♟d3? -0.15
[18.h3 ♟d7 19. ♟e2 ♟ae8 20. ♟bd2 +5.50]
18... ♟d8? +5.50
[18... ♟xf3 19.♟f1 ♟xd1 20.h3 ♟e6 21. ♟xd1 ♟f6 22.♟d2 ♟e4 23. ♟g4 -
0.15]
19.h3+5.36 19... ♟xh3+12.70 20.gxh3+11.64 20...bxc3+15.23 21.
♟xc3+12.09 21... ♟f6+15.51 22. ♟b1+12.03 22... ♟e4+21.63 23.
♟xe4+19.99 23... ♟ab8+22.60 24. ♟g5+19.75 24... ♟xg5+20.87 25.
♟xg5+19.75 25... ♟xb1+23.72 26. ♟xb1+20.87 26...h6+21.13 27.
♟f3+20.58 27...f5+20.65 28. ♟xf5+21.83 28... ♟xf5+299.95 29. ♟d5
+18.09 29... ♟xf3+299.94 30. ♟e8+ +99.90 30... ♟f8 +299.95 31. ♟f6+
+99.92 31...gxf6+299.96 32. ♟g6+ +11.79 32... ♟h8 +299.97 33. ♟h2+
99.96 33...h5 +299.98 34. ♟g1 +99.98 34...a5 +299.99 35. ♟g7#
White checkmates.

```

- We'll learn more about this analysis later. For now, it's enough to know that Houdini will point out blunders (for both you and your computer sparring partner) in red and will offer a suggestion for a better move which could have been played.

# SOME CLASSICAL CHESS QUESTIONS AND ANSWERS

**Q:** Do I have to play rated games?

**A:** Not at all; it's not a requirement that you ever play a rated game using Chess King. Be aware, though, that your rating will remain at 800 until you play some rated chess. Note, too, that you can always play unrated games with electronic opponents of various skill levels to “try them out” before playing rated games.

**Q:** I'm an officially rated chess player. What would be a good rating choice for a computer opponent?

**A:** In Part One of this book, I offered a suggestion for six game “mini-matches” against electronic opponents, and I think that suggestion works well here. Start by playing several games as both White and Black against a computer opponent set fifty points higher (rounded up to the nearest multiple of fifty) than your own Elo rating; a six game “match”, in which you alternate between the White and Black pieces each game, is ideal. If you win the match, bump the slider upward another fifty points. If you lose, slide it down fifty points. If you draw the match (3-3), keep the slider at its current spot.

**Q:** I don't have an official rating – how do I know where to set the slider?

**A:** If you have a friend who is a rated player and with whom you feel you're relatively evenly matched, set the slider for fifty points higher than his rating. If that's not the case and you don't know anyone who is a rated player, set the slider for 1000 and play a few games. You'll know after a few games whether you should adjust the slider up or down. If you need to adjust the slider, try 100 point increments until you settle in to a comfortable level.





**Q:** If I don't play “mini-matches” (as you suggest), how will I know when to adjust the rating slider?

**A:** Experienced chess coaches differ on the exact ratio, but most coaches will tell you that if you've found a setting in which you win about 20% to 30% of your games, that's a good spot for the rating slider, because you're winning enough games to not become discouraged, but losing enough to make you want to work on improving. When you start winning more than about a third of your games, it's time to adjust the rating slider upwards.

**TIP:** By the way, the experience of losing chess games is what you make of it. Back when I first got serious about chess, I was losing all the time, and to people who weren't particularly nice or polite about it. Wanting to get a little payback from these guys was a powerful motivator which made me want to study and improve. I won't categorize it as being consumed by a need for revenge or anything – life isn't a “B” western – but I did want to better my chess so that I could win a few once in a while. Since you're using Chess King as an electronic sparring partner, and because Chess King will never insult or judge you, there's no reason not to play as much chess as you can with the software. Just remember to treat each loss as a learning experience; always have Houdini 4 analyze your losses, and then look for patterns in your losing play (as we learned way back in Part One).



# CHAPTER 10

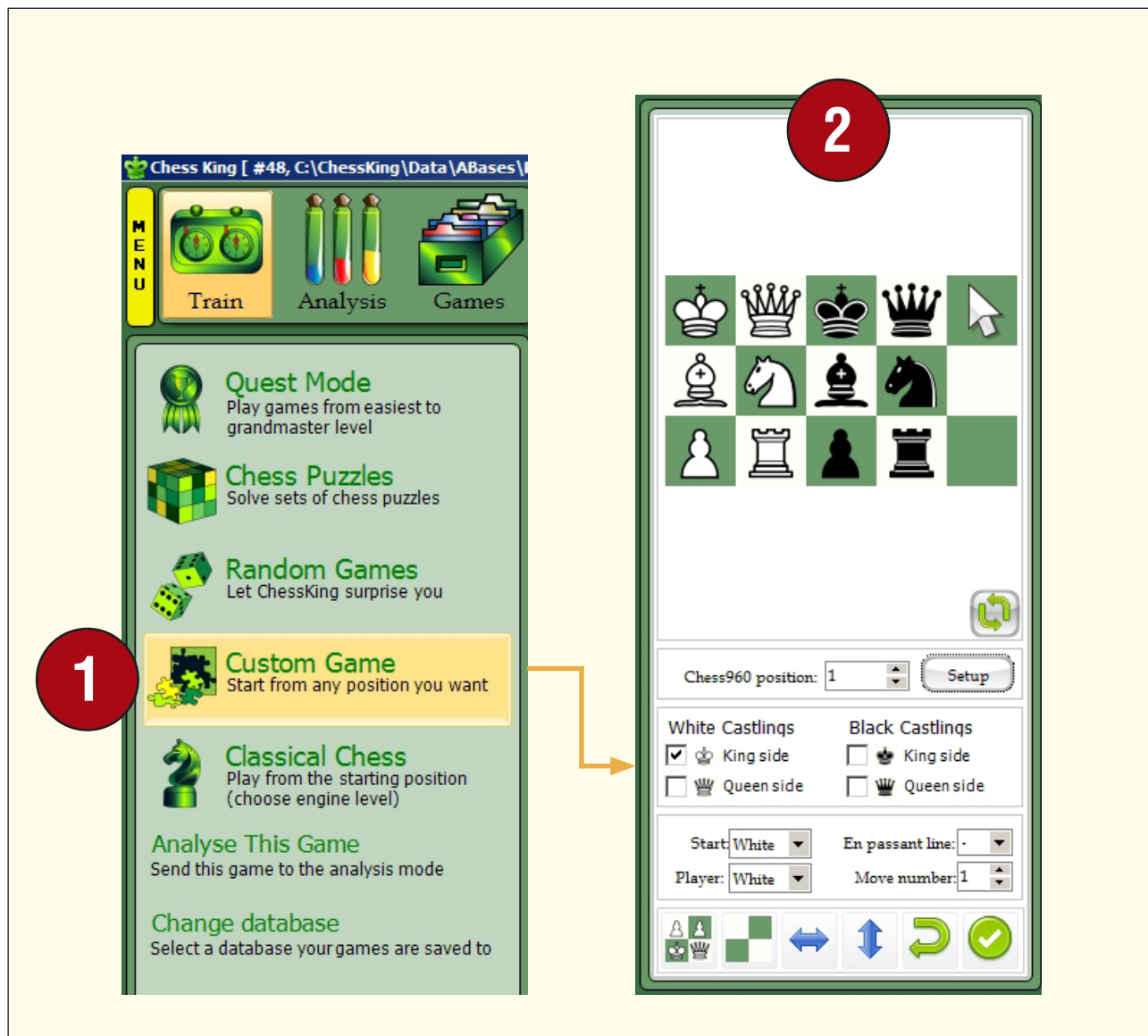
## Chess 960 – it's a whole other game!

- Setting up a chess 960 game

# CHESS 960 – IT'S A WHOLE OTHER GAME!

We learned about Chess 960, the world's most popular chess “variant” back in Part One. If you have the **Silver of Gold** versions of Chess King, you have the ability to play Chess 960 against your computer sparring partner anytime you like! Let's find out how to do it...

# SETTING UP A CHESS 960 GAME



**1** Chess King **Silver or Gold** lets you easily set up and play Chess 960. Start with the Train menu and select “Custom game”:

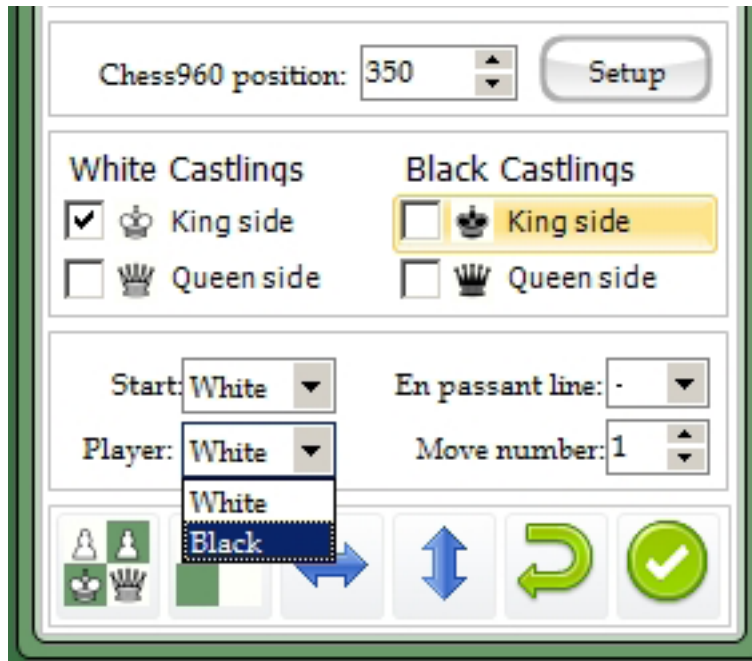
**2** ...which displays the tools for setting up positions in the control panel:

- We'll examine this dialogue in more detail later. Right now have a look near the middle of this display and you'll see the words “Chess 960 position” followed by a box. There are 960 possible starting positions in Chess 960 (hence the name), and all possible legal starting positions have been cataloged and numbered. Just type a value between “1” and “960” into this box, click the “Setup” button beside the box, and the position corresponding with that number will be set up for you automatically on the chess board.

For example, we can type “350” into the box beside “Chess 960 position”, click “Setup”, and we’ll see the pieces on the board all set up for position #350:

The screenshot shows a chess 960 game setup interface. On the left is a piece palette with icons for White King, White Queen, Black King, Black Queen, White Bishop, White Knight, Black Bishop, Black Knight, White Pawn, White Rook, Black Pawn, and Black Rook. Below the palette are controls for 'Chess960 position' (set to 350), 'Setup', 'White Castlings' (King side checked, Queen side unchecked), 'Black Castlings' (King side unchecked, Queen side unchecked), 'Start' (White), 'En passant line' (.), 'Player' (White), and 'Move number' (1). A legend at the bottom left explains the palette controls. The main board, titled 'Level 3: Custom game', shows the pieces set up for position #350. The board has columns labeled a-h and rows labeled 1-8. White pieces are on the 1st rank: Knight on a1, Rook on b1, King on c1, Queen on d1, Rook on e1, Bishop on f1, Bishop on g1, and Knight on h1. Black pieces are on the 7th rank: Pawn on a7, Pawn on b7, Pawn on c7, Pawn on d7, Pawn on e7, Pawn on f7, Pawn on g7, and Pawn on h7. A 'Go' button is at the bottom center.

If you want to play the White pieces in this position, just click the green “Go” button to begin the game. Otherwise select “Black” from the pulldown provided (near the bottom of the dialogue):



- ...and Chess King will flip the board so that the Black pieces are playing from the bottom. Clicking “OK” now will make Chess King move first as White.

## PLAYING CHESS 960

- Playing Chess 960 works just the same as in Classical Chess mode. Even hints are available (with the exception of the “positional factors” hint, which is disabled in Chess 960). If you win or draw the game, you even earn experience points for the victory! But winning is tough in Chess 960, for you will be playing against Houdini 4 at full strength.

# CHAPTER 11

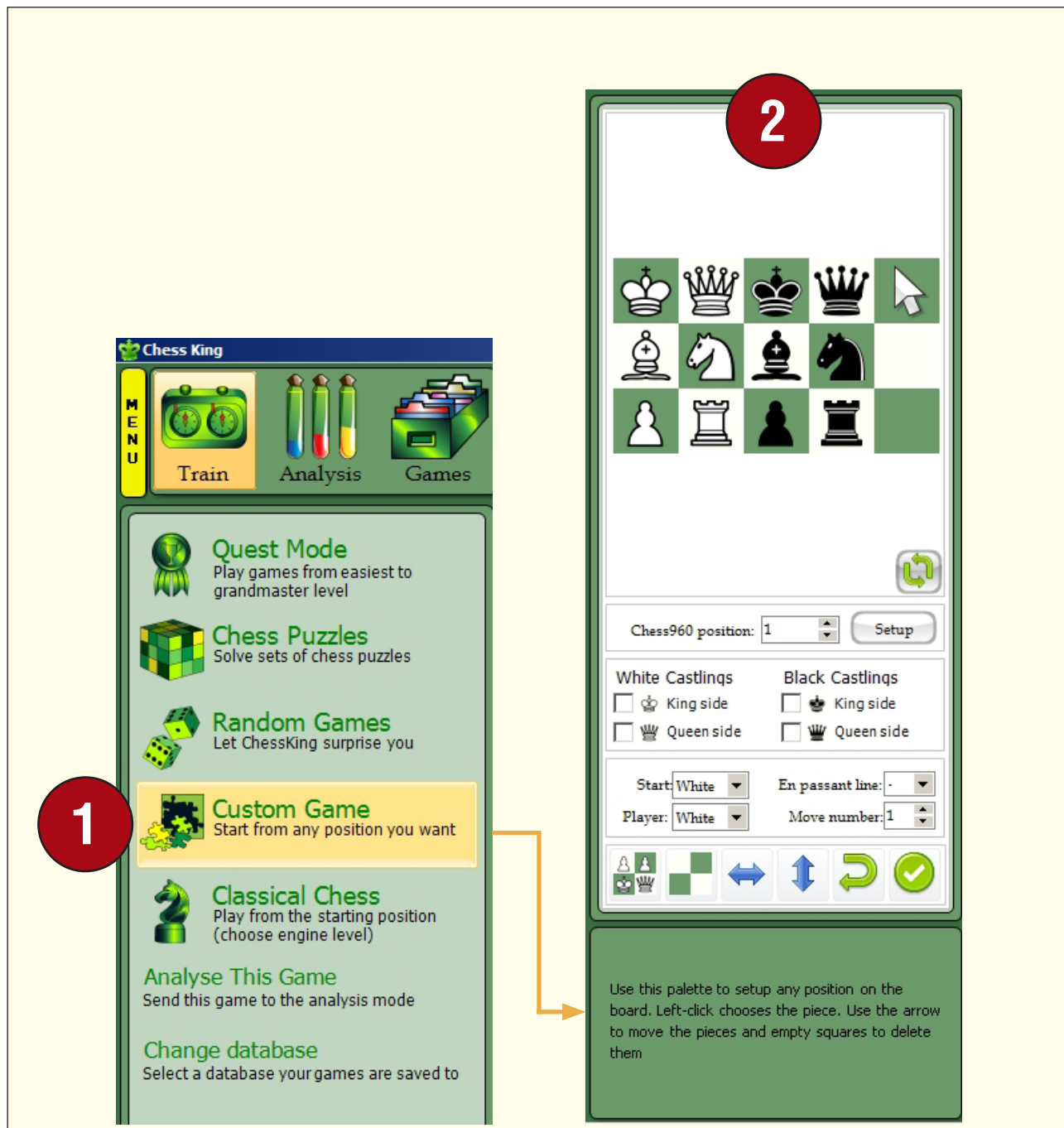
## Positions: infinite diversity in infinite combinations

- Setting up a position in Chess King
- Playing from a position

# POSITIONS: INFINITE DIVERSITY IN INFINITE COMBINATIONS

You'll often come across partial games in books and magazines, incomplete games which stop at a certain point and give an evaluation or assessment. This is very often true with opening encyclopedias, which show a few opening moves and end with an evaluation, or middlegame book positions which end with a line such as “The rest is a matter of technique”. Chess King provides the tools for setting up these positions, to play them out against a chess engine so you can try them out for yourself and learn what happens next. You can even switch sides in the middle of such a positional exploration.

# SETTING UP A POSITION IN CHESS KING



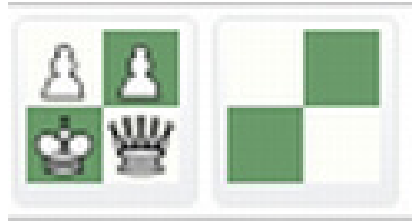
**1** To set up a position start by clicking the Train button, then clicking on “Custom game”:

**2** This will display the tools Chess King provides for setting up a position in the control panel:

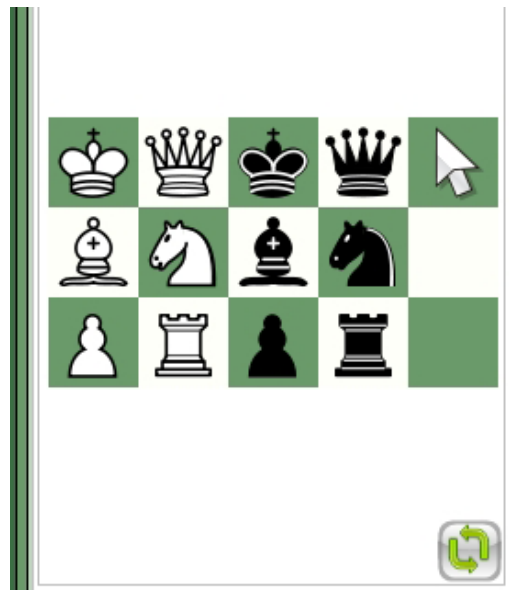
- The description panel offers some further instructions when you mouse over a portion of the control panel.



These two buttons at the bottom of the panel allow you to set up the starting position for a game or to clear the board completely:

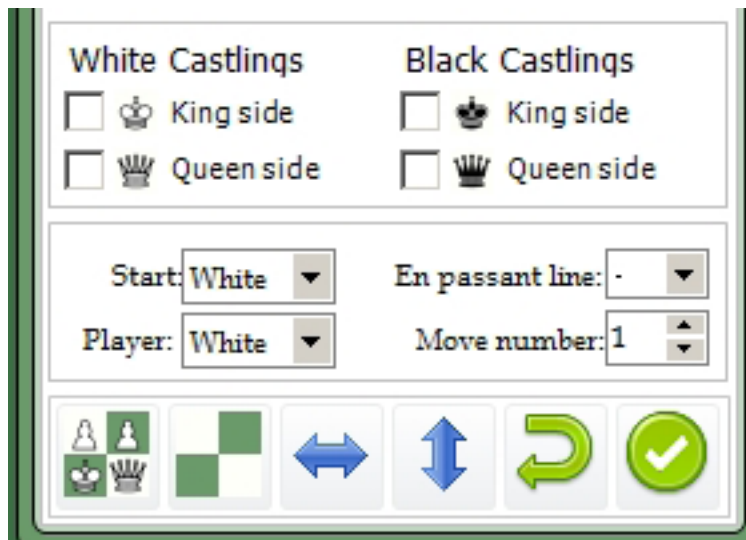


If you set up from the starting position, you can use the mouse cursor to move the pieces around the board. If you clear the chess board, you can click on pieces in the upper part of the panel to place them on the board:



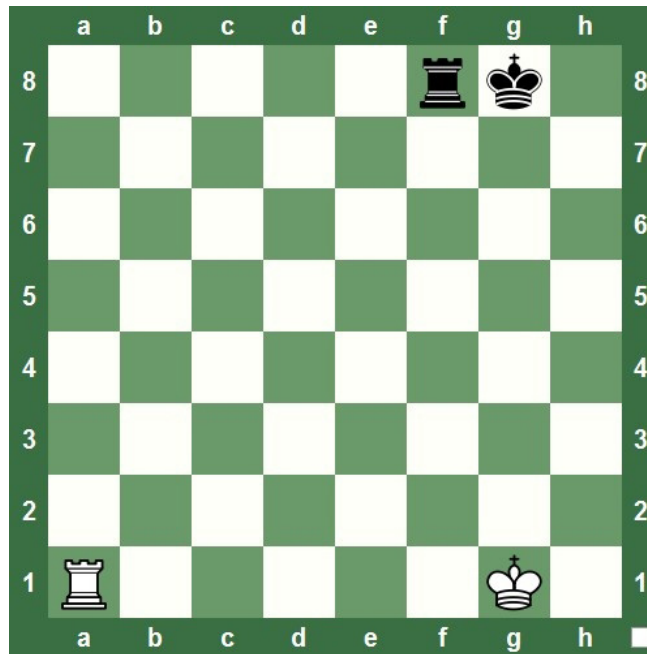
- Click on a piece, then click on the chess board square(s) where you want that piece to appear. Additional boxes let you clear squares (in case you make a mistake) or return the mouse cursor to its normal function (by clicking the arrow). The double green arrow button in the lower right-hand corner just changes the display of piece buttons from a horizontal arrangement to a vertical one.

Additional controls are located below the Chess 960 panel (which we learned about in Chapter 10):

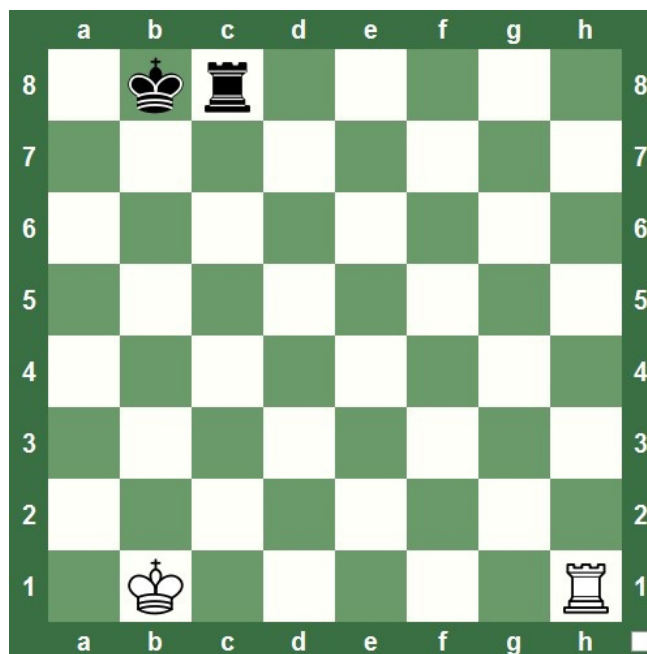


- You can specify whether castling is still legal for either player (as well as on which side[s]), the side to move in the position (with the pulldown beside “Start”), which side you wish to play (beside “Player”), whether en passant capture is legal in the position (and on which file), and the default starting move number (useful for positions from opening books, for example).

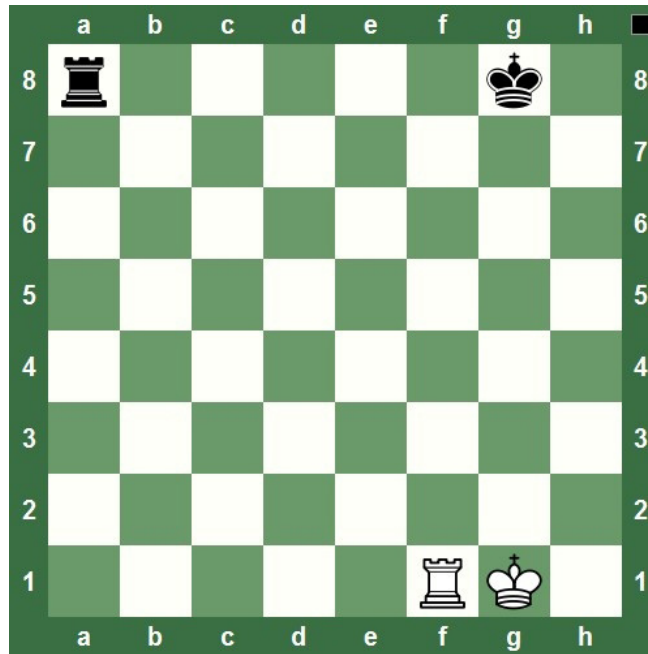
We've already learned about the setup and clear board buttons in the bottom row. Additional buttons let you “mirror” the board position horizontally and vertically. For example, with this position set up on the board:



...clicking the button for horizontal mirroring changes the pieces on the board to this configuration:



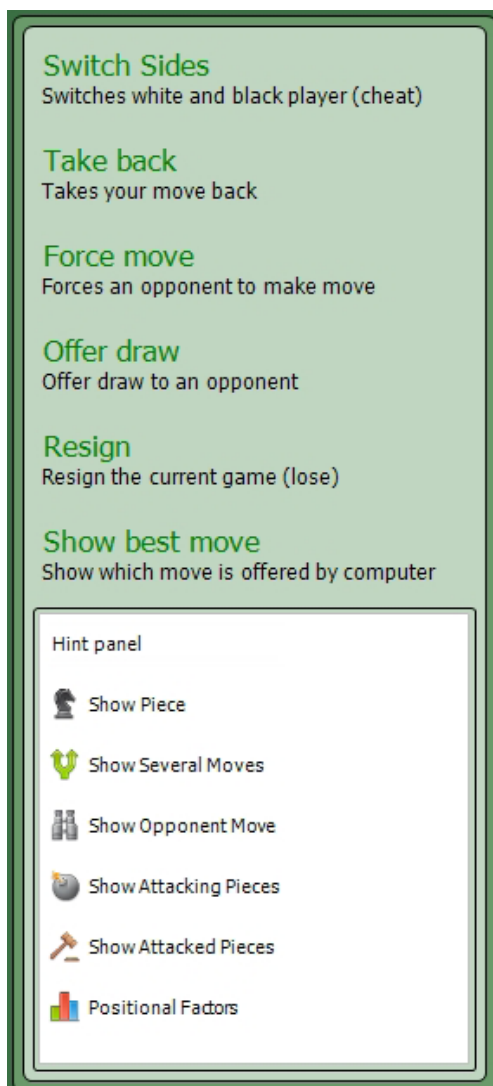
Had we clicked the button for vertical mirroring instead, we'd have seen this:



- The curved green button undoes your last action, while the green button displaying a check mark ends the position setup process.

# PLAYING FROM A POSITION

When you click the green button to end the setup process Chess King changes the control panel to display the commands and features you can use while playing out the position against Houdini:



- You'll have access to all of the usual commands and hints (described in Chapter 5) you see when playing a game or undergoing a Quest. But there's an additional command in the list: "Switch sides", which lets you play the position from the other side; in other words, you and your digital opponent will switch places. Please note that while it's possible to gain experience points when playing from positions (especially if you play one in which you start with a material deficit), switching sides will reduce (or eliminate) the experience you can gain from the game.
- When you've finished your game there are several things you may wish to do. You can click the Train button from the ribbon and then click "Analyze Game" to have Houdini analyze the moves of your game; we'll learn more about Houdini's analysis in a later chapter.. You can also save your game by clicking the yellow "Menu" button from the ribbon and then clicking "Save Game". The game will be saved to the database you specified as your personal database (described in Chapter 1).

# CHAPTER 12

## Entering your games manually and adding analysis

- Using game analysis features
- Managing variations
- Saving your work
- Making more room to work

# ENTERING YOUR GAMES MANUALLY AND ADDING ANALYSIS

Chess King provides you with the tools you need to enter and save your own games. Creating a database of your own games is good practice for many reasons. You can replay your games using Chess King as your electronic chessboard. You can add commentary and analysis to your own games, which is excellent for learning to think critically about your games. You can even have Houdini analyze your games, a great way to quickly learn where both you and your opponent played well or erred.

The first step in entering a game manually is to make sure you're the user whose profile is presently loaded in Chess King (if multiple players are using Chess King on the same machine). Check the box in the lower right-hand corner of the screen, and change the profile to your own if your name doesn't appear there (by clicking the yellow "Menu" button then selecting "Change User" as we've seen previously).

After you've made sure your own user profile is loaded, click “Analysis” from the ribbon and select “New Game”:

The screenshot shows the software interface with the 'Analysis' ribbon selected. The 'New Game' button is highlighted with a red circle and the number 1. An arrow points from this button to the 'Edit Header' dialog box, which is also highlighted with a red circle and the number 2. The dialog box contains a table of standard fields for a game header.

Name	Value
White	?
WhiteElo	
Black	?
BlackElo	
Result	*
Date	
Round	?
Event	?
Site	?
ECO	
GameNo	

Buttons: Show additional fields, OK, Cancel



**1** Clicking this command will allow you to enter moves for both sides on the chessboard without a response from Houdini. You just enter the moves like you're playing a game against the computer, except that you'll be entering moves for both players. After you've entered all of the moves, you can go to the "Analysis" button on the ribbon and select "Edit Game Header" from the panel:

**2** In this dialogue you'll enter all of the game data. You'll enter the names of the players of both the White and Black pieces (and standard usage here is to enter the player's last name, a space, and then the player's first name or first initial). You can enter the date (with the standard usage for this field being to enter the month, date, and year in the form mm/dd/yyyy). For the "Result", enter "1-0" if White won, "0-1" if Black won, and "1/2-1/2" if the game was a draw. It's also customary to provide the place the game was played (in other words, the name of the town) under "Site". The other information (like "Elo" if both players are rated and you know their ratings, or "ECO" if you know the Encyclopedia of Chess Openings code for the opening used in the game) is optional. Clicking the "Show Additional Fields" button will allow you to make "custom" header information, but be aware that this will result in a non-standard PGN (Portable Game Notation) header, and other chess programs may have trouble loading the game if you share the game or database with your friends.

- After you've entered the moves and filled out the game header, click the yellow Menu button and then click "Save Game". The game will be saved to your database.

# USING GAME ANALYSIS FEATURES

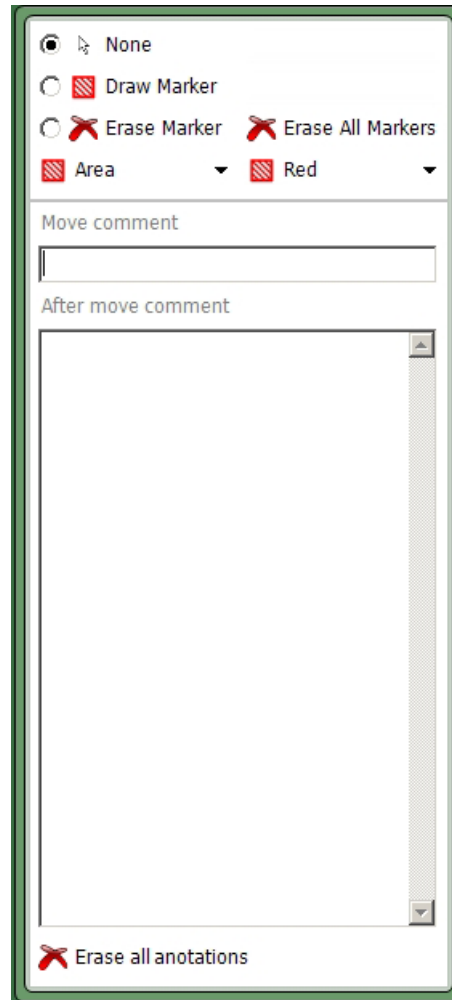
You can add analysis to your own games, which is especially useful for sharing and publishing your games (either in print or online, which we'll learn about later). You can add comments to games to help your reader understand the game.

Comments are also useful when you replay a game months (or even years) later, to remind you of what you were thinking at the time a game was played. You're able to use comments for other purposes, too, like recording clock times at specific moves in tournament games, or recording pondering time (in days) for correspondence games.

After you click on a move in the Notation panel for which you want to add commentary (either verbal or visual) there are two separate ways to access the commentary features. The first is to click "Analysis" from the ribbon and then select "Annotations" from the panel:



This will reveal a new panel with the annotation functions displayed:



- Some of the basic tools for annotating games are displayed in this panel.

“Move comment” refers to the short symbolic remarks which use exclamation marks and question marks (known as “diacritical remarks”) which show whether a move was good or bad. You've most likely seen these remarks in chess games from books and magazines:

**!! - brilliant move**  
**! - very good move**  
**? - questionable move**  
**?? - awful move**  
**!? - interesting move**  
**?! - dubious move**

The reason why you'd wish to type these in the “Move comment” box is to make them appear in the same black font used for moves in the Notation panel. For example, here's how the diacritic for “dubious move” for Black's 13th move appears in the notation:

```
[...] 1.e4 ♘f6 2.e5 ♘d5 3.c4 ♘b6 4.d4 d6 5.f4 dxe5 6.fxe5 ♙f5 7.♘c3 e6
8.♘f3 ♘c6 9.♙e3 ♙e7 10.d5 exd5 11.cxd5 ♘b4 12.♘d4 ♙g6 13.♙b5+
c6?! 14.dxc6
```

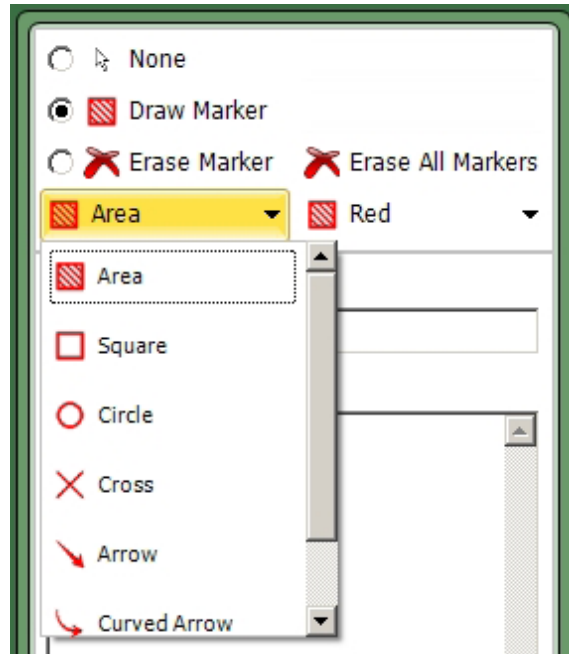
The larger “After move comment” box lets you add longer text comments. Click on a move in the Notation panel and then type your comments in the “After move comment” box. You'll see your commentary being applied to the game notation even while you're typing in the box:



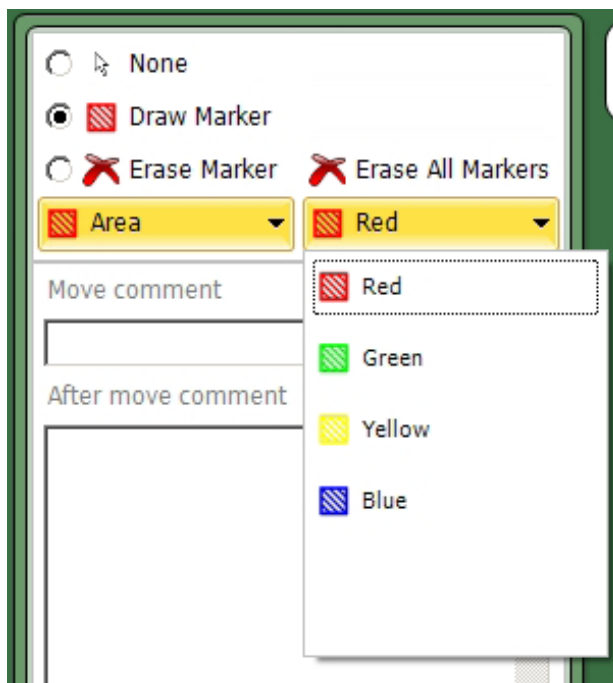
- The upper part of the Annotations panel gives you the tools you need to add non-verbal commentary to your games in the form of colored arrows and squares. You may have seen these in our Chess King videos series. As producer of these videos, I make extensive use of these visual annotations to help our viewers understand the ideas behind the moves as they're played on the screen.

```
[...] 1.e4 ♘f6 2.e5 ♘d5 3.c4 ♘b6 4.d4 d6 5.f4 dxe5 6.fxe5 ♙f5 7.♘c3 e6
8.♘f3 ♘c6 9.♙e3 ♙e7 10.d5 exd5 11.cxd5 ♘b4 12.♘d4 ♙g6 13.♙b5+
c6?! Although my opponent had played a few statistically weaker moves prior to this point,
this move was definitely a poor choice. 14.dxc6
```

To add these visual “markers” to the chessboard, start by clicking the move for which you'd like to add a marker to the chessboard, then click the radio button beside “Add Marker”. Pulldown menus let you select the type of marker and its color:

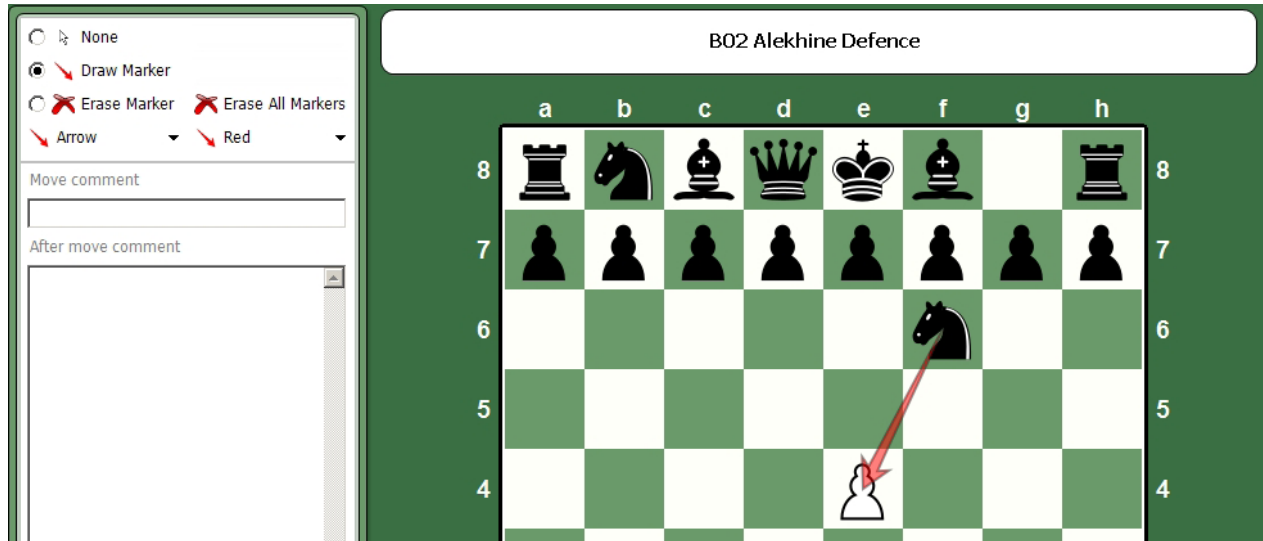


Although the uses of the various colors aren't “etched in stone” in the manner of chess diacritics and symbols, at Chess King we generally use the four colors for very specific purposes:



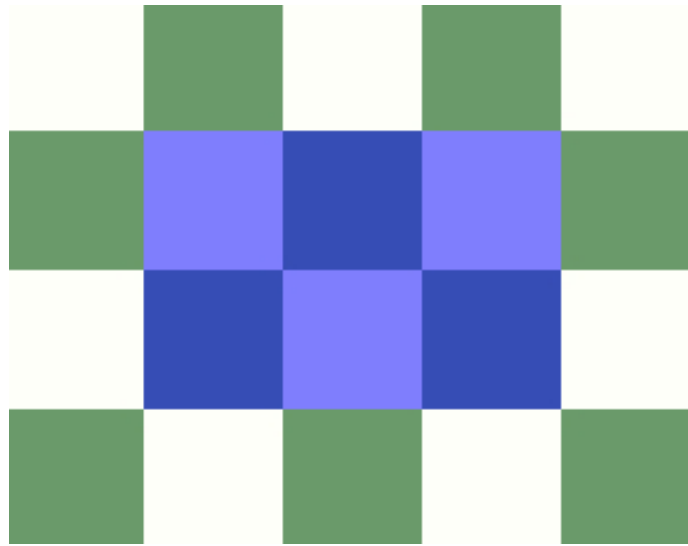
<b>RED</b> Attacks and threats, threatened pieces
<b>GREEN</b> Defenses
<b>YELLOW</b> Moves and control of squares
<b>BLUE</b> Miscellaneous uses not covered by the other colors

The way you add a marker depends on the type of marker you're using. For arrows, click on the square where you want the base of the arrow to appear and hold down the left mouse button. Then move the mouse cursor to the square where you want the point of the arrow to appear and release the button:



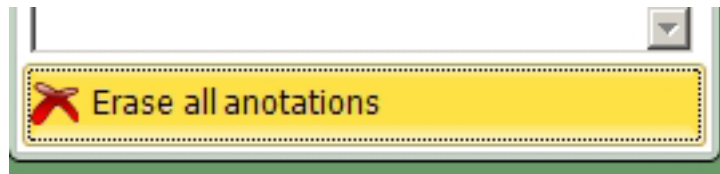
- In the illustration above, a red arrow has been added to show that the e4-pawn is under attack by the Knight on f6.

You can add a square, circle, or cross just by clicking on the square where you want the marker to appear. “Area” is a special symbol which can be used two ways. You can color a single square by clicking on it, or you can color a group of squares by clicking and dragging the mouse cursor to color a group of squares at one time:



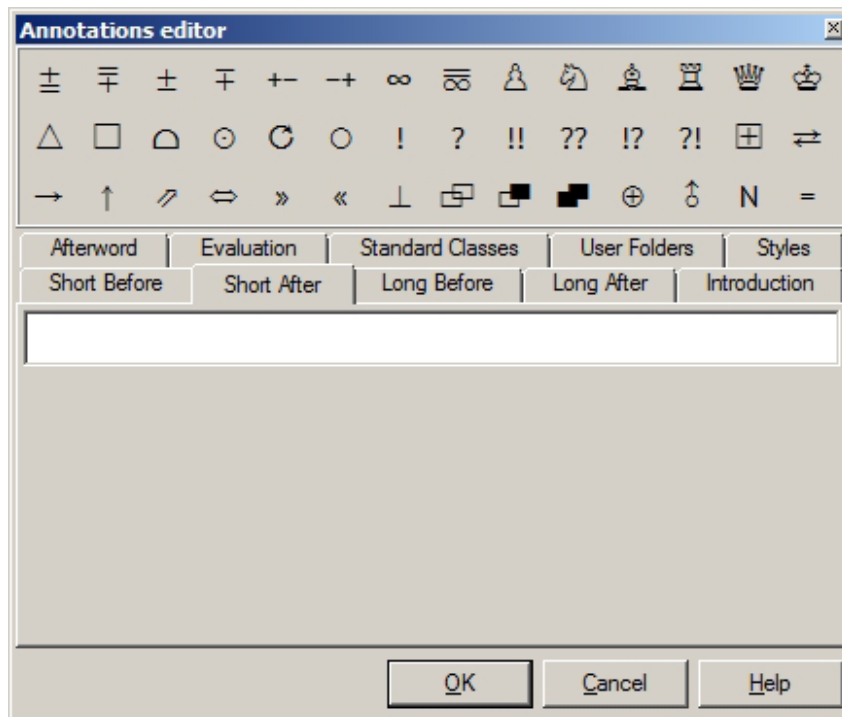
- Drag the mouse sideways to highlight the squares on a single rank, up or down to highlight squares on a file, or you can even highlight a block of squares (as seen in the illustration above).
- You can erase a marker by clicking the radio button beside “Erase marker” and then clicking on the marker you wish to remove. Click “Erase all markers” to get rid of all markers associated with that move at one time; this command erases all markers currently on the screen.
- When you've finished adding markers and want to return to entering moves, click the radio button beside “None” to go back to normal move entry mode.

There's an additional button at the bottom of the “Annotations” panel which should be used only with great caution:



- The “Erase all annotations” button will erase every annotation (verbal and visual) in the entire game at one time. Be very careful not to click this button unless you actually do wish to remove all of a game's annotations!

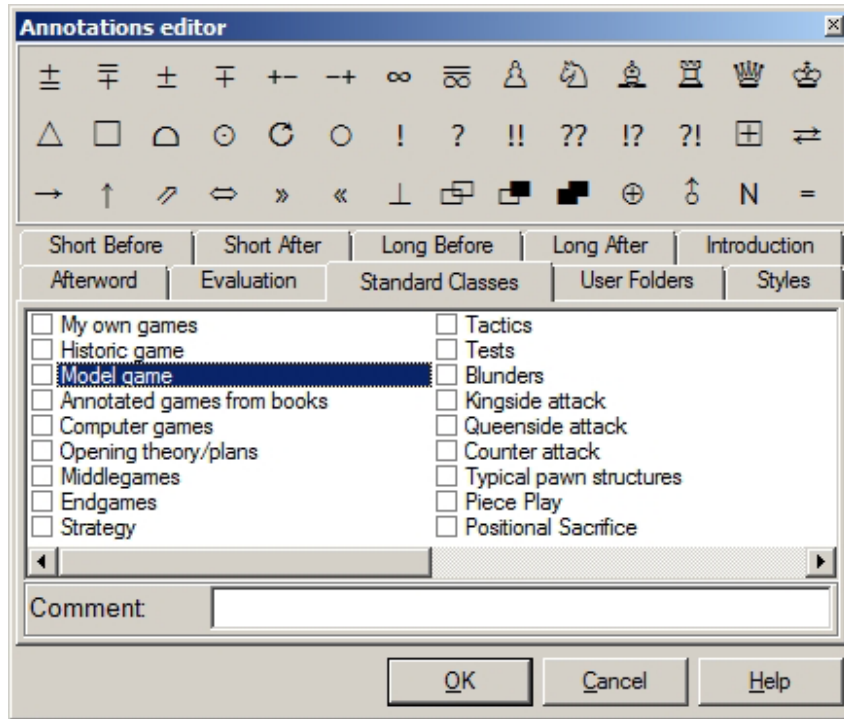
There's a second annotation panel in Chess King which is a hidden feature. After you highlight a move for which you want to add commentary, hit CTRL-A on your keyboard to display a floating dialogue containing other annotation features:



- The upper part of the display contains three rows of buttons which allow you to add symbolic chess commentary, a kind of commentary “shorthand” which over the last half-century has become the universal “language” of chess. Because the commentary is symbolic rather than verbal, it allows chessplayers who speak different languages to communicate chess analysis and ideas through symbols. If you hover your mouse cursor over one of these symbols, you'll get a floating box which interprets what the symbol means (and therefore we won't explain all of the symbols in this book).

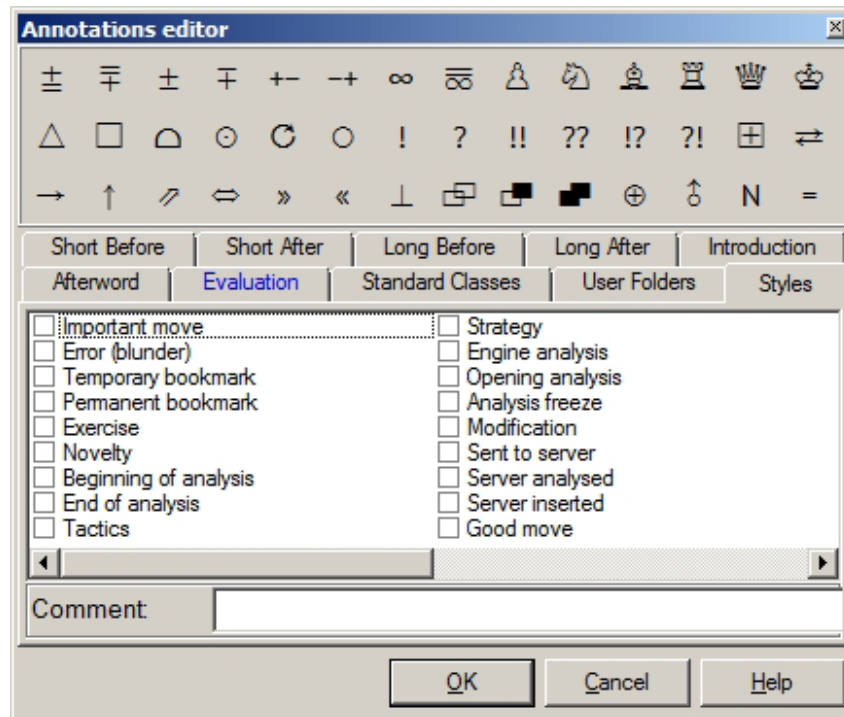


The lower part of the dialogue provides a number of file tabs for you to click and reveal a plethora of other annotation tools. Most of these will reveal commentary boxes which allow you to type remarks either before or after a move (or after a game, in the case of the “Introduction” and “Afterword” tabs). But three of these tabs are notable for the other tools which are revealed by clicking them:



- **“Standard classes”** allows you to categorize games by specific tactical and positional motifs (as well as specific categories), and key these themes to specific moves in the game. Some advanced chess programs (like Chess Assistant) can do database searches and find games based on these motifs.

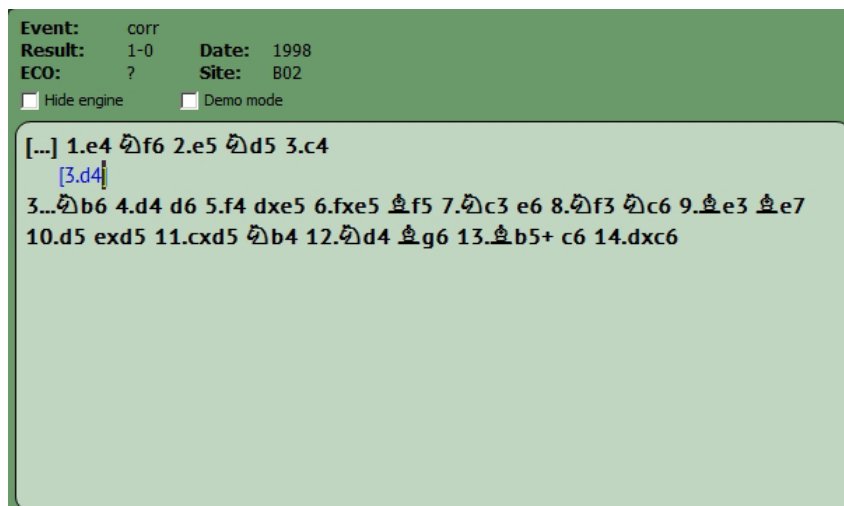




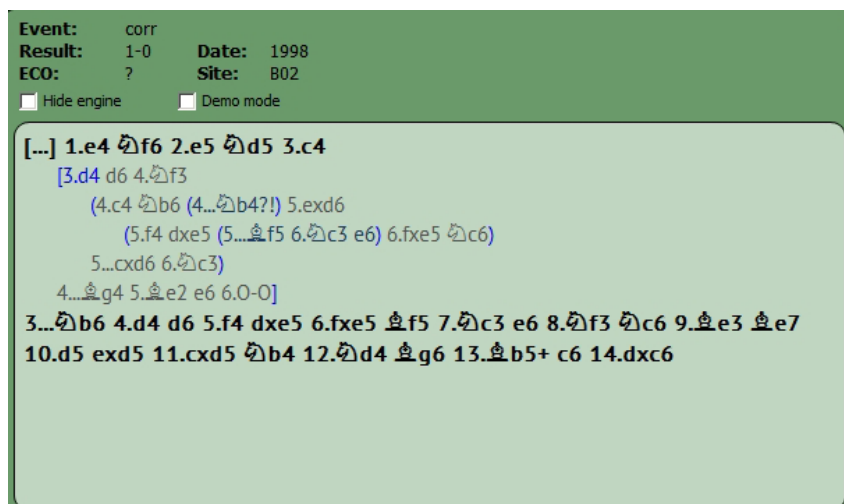
- The **“Styles”** tab gives you a way to mark moves, again by specific categories. Some of these markers will underscore a move in the notation, others will highlight moves, others will make the moves stand out in other ways. Some advanced chess programs (like Chess Assistant) can perform database searches for games which use specific “style” notations. I find these styles useful when I'm producing Chess King videos, as they let me emphasize a move in the on-screen game notation.

# MANAGING VARIATIONS

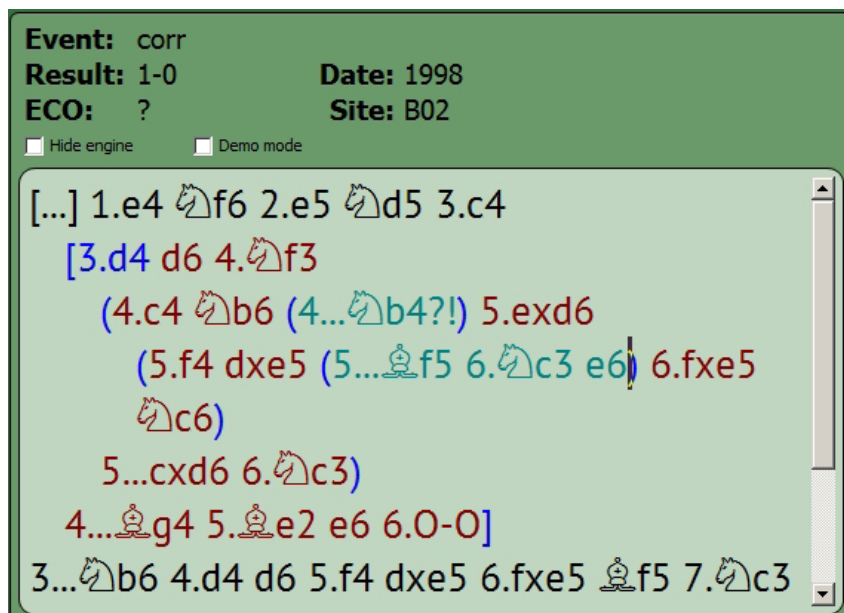
It's easy to add variations to a game in Chess King! Just make the variant move, and Chess King adds it to the game notation as a variation line. For example, in a game which began 1.e4 Nf6 2.e5 Nd5 3.c4, I just clicked on 2...Nd5 and played 3.d4 instead; Chess King added the move to the notation as a variation:



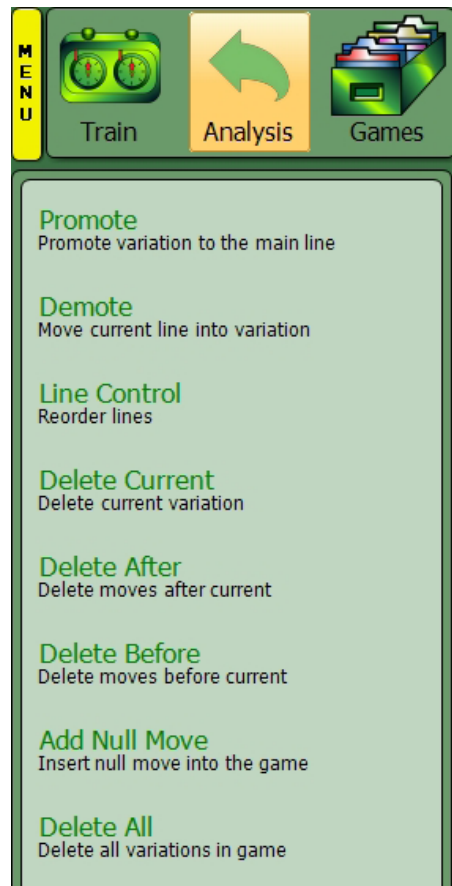
By entering moves (and additional variations to those moves), you can create a whole “tree” of analysis:



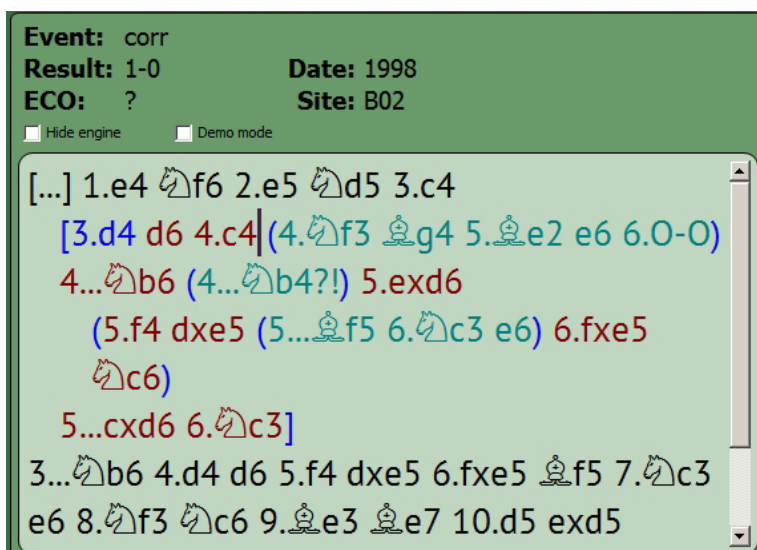
Sometimes this can become a bit hard to read, but there's a way to make the notation font bigger: click the yellow “Menu” button, go to “Display mode”, and click “Large” from the submenu:



Let's say that (after you've entered the moves you see in the illustration above) you'd like the main variation to be 3.d4 d6 4.c4 instead of 4.Nf3. You can re-order the variations by first clicking “Analysis” from the ribbon and then clicking “Lines” from the panel; this shows a new panel with commands to let you re-order the variations:

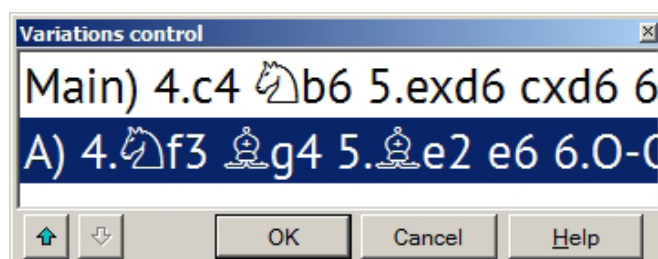


If you click on the 4.c4 variation and then click “Promote”, Chess King will swap 4.c4 and 4.Nf3 in the notation:



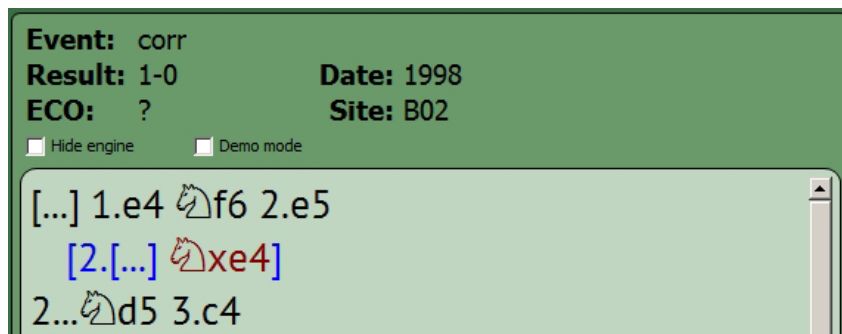
- “Demote” is (obviously) the opposite of “Promote”. For example, in the above illustration if you clicked 4.c4 and clicked “Demote” from the panel, it will switch the variation view back to the way we saw it earlier.

Clicking on a spot in the game in which a variation appears, and then clicking “Line Control” gives you another way to reorder lines; it's basically just a more visual version of “Promote” and “Demote” contained in a single dialogue:



- If you click on a variation move and then click “Delete current”, the variation (and all of its sub-variations!) will be deleted.
- Clicking on a move anywhere in a game (including the main game moves, so be careful!), and then clicking either “Delete after” or “Delete before” will delete all of the moves in the game (including sub-variations) which appear either after or before the highlighted move, respectively. Use these commands with caution!
- “Delete all” will wipe out all variations in a game with a single click. Here again, be very careful about using this command!

“Add null move” is a great way to show threats (which, after all, are defined as what a player would do if he could make two moves in a row). You can add a “non-move” (which appears as a dash in the notation) to show what a player would do if he could move twice. For example, after 1.e4 Nf6, Black will play 2...Nxe4 if White does nothing about the threatened capture. To show this in the notation, click on 1... Nf6 and then click “Add Null Move”. This adds the “blank” move to the notation, and after making the move 2...Nxe4, the notation would look like this:





# SAVING YOUR WORK

After entering commentary, markers, and variations to your game, don't forget to save your work!

Just click the yellow “Menu” button and click “Save game”. That will save your work. If you've just entered a game for the first time, it will save it to the database you selected as your own (back in Chapter 1 under “Create your own database”). If you've loaded a game from an existing database (which we'll learn about in the next chapter), it will save the game in its original database, overwriting the game which is already in the database.

Sometimes you want to save a game without overwriting the original database game. In this case, you'd click the “Menu” button and select “Save a copy”. This doesn't overwrite the original game. Be aware, though, that this will make a second listing for the same game within the database (while not technically being an exact duplicate).

# MAKING MORE ROOM TO WORK

We've seen how you can make the font larger in the Notation panel. To have even more room to work, you can move the mouse to the border between the notation and the tree/graph display immediately below it; when the mouse cursor turns to a two-headed arrow, click and drag the border downward to make the notation portion of the panel larger. You can also click the “Hide engine” box near the top of the panel to hide the engine panel (assuming you're not using Houdini to analyze positions, as we'll see in a later chapter). This will also hide the player rewards pane from the lower right corner of the screen. The notation panel will become longer and narrower.

Sometimes as you step through a game move-by-move, you may wish to conceal moves which haven't yet been played; perhaps you'd like to text yourself by trying to guess what was played next. Clicking the “Demo mode” box near the top of the Notation panel will hide the remaining moves of the game. This sometimes makes navigating through variations a little more difficult, but is very helpful when you're looking at a position from a game and trying to guess what was played next.

# CHAPTER 13

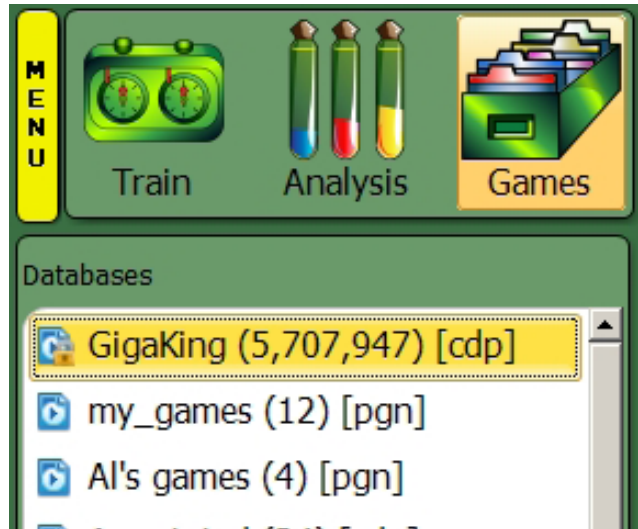
## Databases

# DATABASES

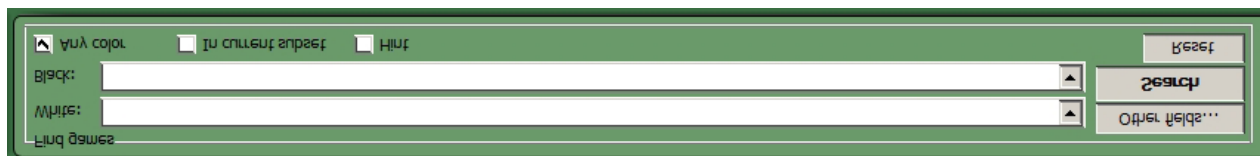
A “database” is, loosely speaking, a collection of related information. Used in the context of the game of chess, a database usually refers to a collection of games. Chess King comes with a database of over five million chess games which you can use for learning and enjoyment. Nobody expects you to play through five million games! But if you think of Chess King's database (called GigaKing) as a library of games, its usefulness becomes apparent. You can browse through games, just like browsing the books in a library, playing through only the games which interest you or which you find useful.

But how do you find the games you want to review? Because GigaKing is an electronic database, it's fully searchable. And Chess King furnishes you with many different tools you can use to search for games. In this chapter we'll learn about the ways you can search for games.

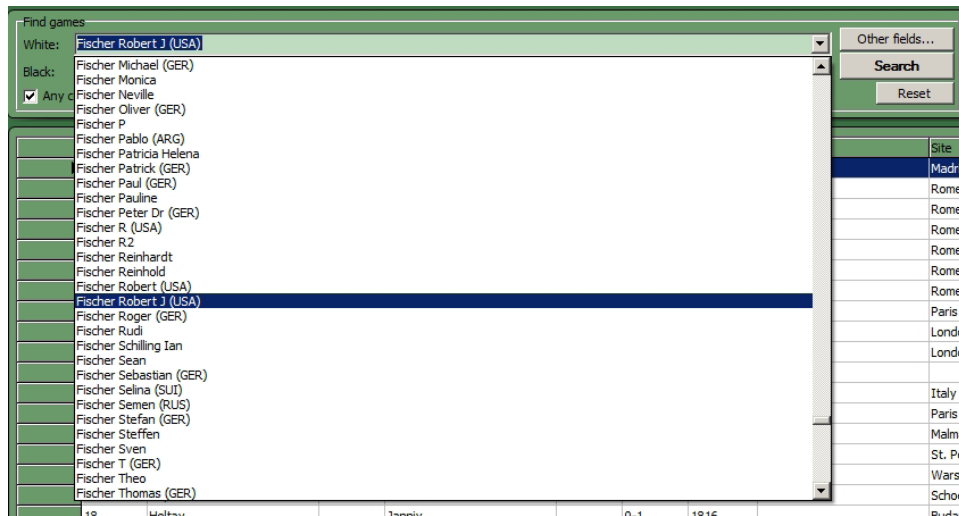
First, let's find and load the GigaKing database. Click the large “Games” button in the ribbon, and then click on the GigaKing database from the panel:



- When you click “**Games**” from the ribbon, the panel will show you the databases you've created and imported, as well as the databases which come with Chess King. The number in parentheses after a database's name indicates the number of games which are in that database. (Don't worry if the GigaKing which came with your Chess King program displays a different number of games. Newer versions of Chess King have larger GigaKing databases, since we continually add new games to the database to keep it up to date.)
- The most basic form of database search is a header search. The “header” of a chess game in a database contains basic information to identify the game: the player names, the year the game was played, the result of the game; often additional information is included, such as the place a game was played, the opening (“ECO”) code, and even the Elo ratings of the players. When you click on the GigaKing database in the left-hand panel, you'll see a list of games and, at the top of the screen, a box which lets you do the most basic header search: a search for the games of a particular player.



Click inside the box to the right of “White:” and start typing the last name of a player for whom you'd like to search. After you type a few letters, click the “down arrow” button at the far right of the box. You'll see a scrolling pulldown list of names of players in GigaKing whose names start with the string of letters you've typed:



- By using the scrolling list, you can both quickly find the player whose games you want to view and make sure the player's name is spelled correctly; if the spelling is incorrect, the search will bring up the wrong games or no games at all.
- If you check the “Any color” box, your search results will contain games in which your player had either the White or Black pieces. If you uncheck “Any color”, be sure to type the player's name in the correct box (White or Black) for the color pieces you wish to see him or her play.

After you've entered the player's name, click “Search”; after a few moments the game list will show only the games of that player (and the color you selected if you unchecked “Any color”):

GameNo	White	WhiteElo	Black	BlackElo	Score	Date	Event	Site
88498	Fischer Robert J (USA)	2780	Ames D		1/2-1/2	1955	Ch USA (juniors)	Lincolnwood
90532	Fischer Robert J (USA)	2780	Pupols Viktors (USA)	2155	0-1	1955	Ch USA (juniors)	USA
90533	Fischer Robert J (USA)	2780	Warner K		0-1	1955	Ch USA (juniors)	USA
91805	Fischer Robert J (USA)	2780	Fox Maurice		0-1	1956	It (open)	Canada
91806	Fischer Robert J (USA)	2780	Sharp		1-0	1956	It (open)	Canada
92235	Fischer Robert J (USA)	2780	Casado J		1/2-1/2	1956	Simultan	Habana (Cu)
93260	Fischer Robert J (USA)	2780	Matthey Harald (GER)	2192	1/2-1/2	1956	It (open)	Montreal (C)
93519	Fischer Robert J (USA)	2780	Baron Scudler		1-0	1956	Ch Manhattan Chess Club	New York (L)
93520	Fischer Robert J (USA)	2780	Pavey Max		0-1	1956	Ch Manhattan Chess Club	New York (L)
93521	Fischer Robert J (USA)	2780	Vine L		1/2-1/2	1956	Ch Manhattan Chess Club	New York (L)
93524	Fischer Robert J (USA)	2780	Gross Heinrich (GER)	1938	1/2-1/2	1956	Ch USA (open)	New York (L)
93525	Fischer Robert J (USA)	2780	Santasiere Anthony Edward (U)		1/2-1/2	1956	Ch USA (open)	New York (L)
93586	Fischer Robert J (USA)	2780	Bernstein Sidney		1/2-1/2	1956	Memorial Rosenwald	New York (L)
93587	Fischer Robert J (USA)	2780	Hearst Elliot Sanford		0-1	1956	Memorial Rosenwald	New York (L)
93588	Fischer Robert J (USA)	2780	Mednis Edmar J (USA)	2381	1/2-1/2	1956	Memorial Rosenwald	New York (L)
93589	Fischer Robert J (USA)	2780	Pavey Max		1/2-1/2	1956	Memorial Rosenwald	New York (L)

You can double-click on a game, and Chess King will load it into the main chessboard screen so that you can replay it:

The screenshot shows the Chess King software interface. At the top, the player names are displayed: Fischer Robert J (USA) and Benko Pal C (USA). The main area features a chessboard with the pieces in their starting positions. To the right of the board, there is a text area containing the game's PGN (Portable Game Notation) code. Below the PGN, there is a table showing the success rate for various moves. The interface also includes a sidebar on the left with options like 'Train', 'Analysis', and 'Games', and a bottom status bar showing 'Steve [800]'.

Event: Int Date: 1962  
 ECO: B02 Site: Stockholm (Sweden)  
 [-] 1.e4 c5 2.♘f3 ♘c6 3.d4 cxd4 4.♘xd4 ♗b6 5.♗b5 ♖f6 6.♗c3 e6 7. ♘c2 ♗b4 8.0-0 0-0 9.♗d3 ♗xc3 10.bxc3 d5 11.exd5 exd5 12.♗f4 ♗e8 13.♗ab1 ♗e5 14.♗d4 ♗xd4 15.♗xd4 b6 16.♗b5 ♖g6 17.e3 ♗a6 18. ♗f1 ♗e7 19.♗f1 ♗e4 20.♗d4 ♗d8 21.♗b1 ♗xb5 22.♗xb5 ♗c7 23. ♗e3 ♗a6 24.♗f1 ♗f5 25.♗f3 ♗xd4 26.♗d4 ♗e5 27.♗e3 ♖6 28.f4 ♗c6 29.♗d1 ♗f8 30.g4 ♗a5 31.♗d3 ♗c4 32.♗g7 ♗c5 33.♗xd5 ♗xd5 34. ♗xd5 ♗xd5 35.♗xd5 ♗e5 36.♗e4 ♖5 37.♗d5 ♖6 38.f4 ♗e7 39.♗f2 ♖g4 + 40.♗g2 ♗d6 41.h3 ♗f6 42.♗f3 h5 43.c3 ♗c5 44.♗c2 ♗e8 45.g4 hxg4+ 46.hxg4 ♗xc4 47.gxf5 ♖f5 48.♗x5 ♗d6 49.♗e6+ ♗xc3 50.♗g4 b5 51. ♗g5 a5 52.♗f6 b4 53.♗b5 ♗e4+ 54.♗e7 ♖g5 55.♗d6 ♗h5 56.f5 ♖g7

Moves	Positions	Success	Score
e4	2,935,331	53%	+0.12
d4	1,807,103	55%	+0.09
♗f3	439,800	55%	+0.12
c4	379,969	54%	+0.05
c3	38,110	55%	+0.06

If you click in the notation panel, you can use the cursor (arrow) keys on your keyboard to play through the game. You can also use the “VCR” buttons at the bottom of the notation/tree panel to play through the moves as well:

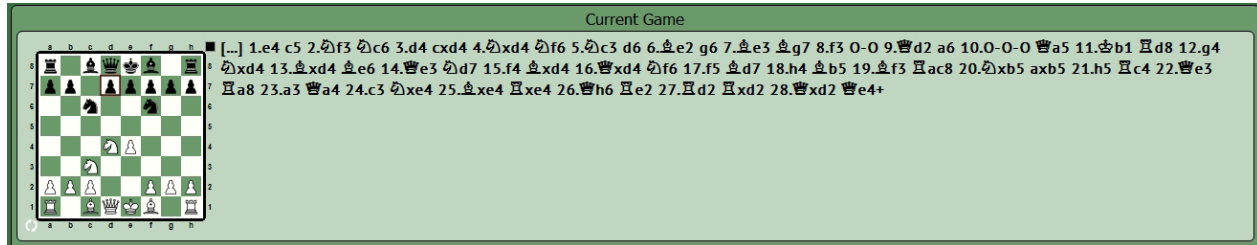


- The buttons on the ends jump to the beginning or end of a game, while the buttons in the center let you step forward and backward through the game one move at a time.

If you'd like to search for games in which two players played against each other, you can type one of their names in the “White:” box and the other player's name in the “Black:” box. Checking “Any color” provides all the games in which the two players faced each other, while unchecking it limits the search to games in which the player's piece color matches the box in which you entered his or her name:

GameNo	White	WhiteElo	Black	BlackElo	Score	Date	Event	Site
116744	Spassky Boris V (FRA)	2548	Fischer Robert J (USA)	2780	1-0	1960	It	Mar del Plata
161643	Fischer Robert J (USA)	2780	Spassky Boris V (FRA)	2548	1/2-1/2	1966	Olympiad	Habana (Cub
165962	Fischer Robert J (USA)	2780	Spassky Boris V (FRA)	2548	1/2-1/2	1966	It	Santa Monica
166004	Spassky Boris V (FRA)	2548	Fischer Robert J (USA)	2780	1-0	1966	It	Santa Monica
209121	Spassky Boris V (FRA)	2548	Fischer Robert J (USA)	2780	1-0	1970	Olympiad	Siegen (Gerr
230009	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	1-0	1972	Ch World (match)	Reykjavik (Ic
230010	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	0-1	1972	Ch World (match)	Reykjavik (Ic
230011	Fischer Robert J (USA)	2785	Spassky Boris V (FRA)	2660	1/2-1/2	1972	Ch World (match)	Reykjavik (Ic
230012	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	0-1	1972	Ch World (match)	Reykjavik (Ic
230013	Fischer Robert J (USA)	2785	Spassky Boris V (FRA)	2660	1-0	1972	Ch World (match)	Reykjavik (Ic
230014	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	1/2-1/2	1972	Ch World (match)	Reykjavik (Ic
230015	Fischer Robert J (USA)	2785	Spassky Boris V (FRA)	2660	1-0	1972	Ch World (match)	Reykjavik (Ic
230016	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	1/2-1/2	1972	Ch World (match)	Reykjavik (Ic
230017	Fischer Robert J (USA)	2785	Spassky Boris V (FRA)	2660	1-0	1972	Ch World (match)	Reykjavik (Ic
230018	Spassky Boris V (FRA)	2660	Fischer Robert J (USA)	2785	1-0	1972	Ch World (match)	Reykjavik (Ic
230019	Fischer Robert J (USA)	2785	Spassky Boris V (FRA)	2660	1/2-1/2	1972	Ch World (match)	Reykjavik (Ic

When you single-click a game in the list to highlight it, you can see the game notation appear in the “Current game” panel at the bottom of the screen:



- Not only does this give you a quick overview of the game, but you can also preview it by clicking in the notation and using the cursor keys to play through the moves. This is a useful tool for identifying a game of interest before you double-click on it to load it into the main chessboard analysis view in Chess King.
- The “Reset” button to the far right of the “Find games” panel resets the game list to display the full database list instead of just the results of your last search.

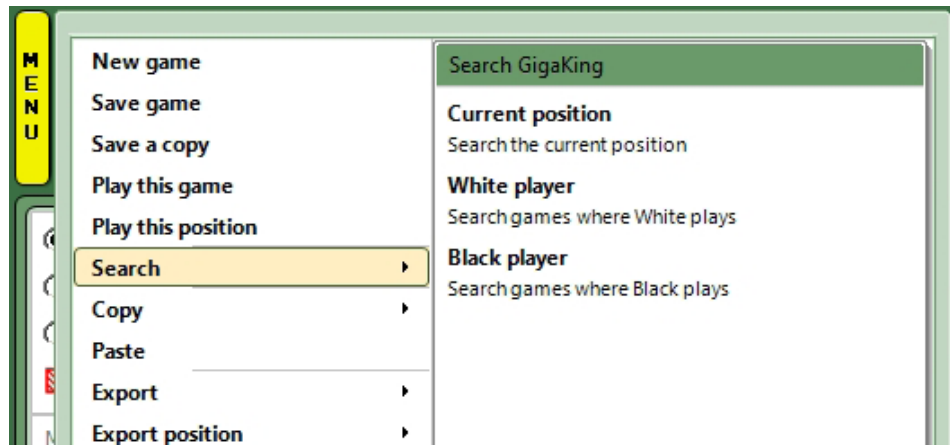


There are other kinds of game searches you can do in Chess King. Click the “Other fields” button in the “Find games” panel to see a dialogue containing other search types:

- You can still search for players using this dialogue, but additional tools are furnished for you as well.
- “Result” lets you specify whether the search should be limited to White wins (1-0), Black wins (0-1) or draws (1/2-1/2). You can also search for “no result” which is useful for database which contain theoretical entries (for example, annotated opening variations).
- “Year” lets you set a range of years (or a single year, if you enter the same year into both boxes). For example, if you want to limit a search for games between Fischer and Spassky to their 1972 World Championship match, you can type “1972” (without the quotes) in both boxes.
- “Elo” lets you specify a range of ratings. For example if you want to see only games of master-level or higher you can type “2200” in the left-hand box and “2900” in the right-hand box. Clicking “Both” means that both players' ratings must fall into the range you've specified, while “Any” means that only one of the players must have a rating in that range (so you'll also get games in which a high-level player faced a weaker opponent). Please note: the Elo rating system wasn't adopted for international chess play until the early 1970's, so using an “Elo” search will leave out many, many excellent games by strong players from the decades prior to the introduction of the rating system!

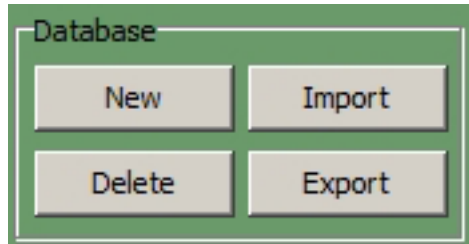
- Please be aware that the more information you enter in the “Find games” dialogue, the fewer games will be returned by the search. In Boolean algebraic terms, a Chess King game search is an “and” search, not an “or” search. So, for example, if you search for all the games of Magnus Carlsen, you’ll receive a set of games in return, but if you search for all of his games against opposition rated 2700 and up, you’ll receive fewer games (as games against lower rated opposition will be excluded). If you add a range of years (say, 2011-2014) along with those search terms, you’ll get fewer games yet.
- When you’re looking at a list of search results and wish to return to the view of all the games in a database, click the “Reset” button in the “Find games” panel.

The “Games” view in Chess King isn't the only place where you can perform a search; you can also launch a search request while playing through a game in Analysis mode too! While replaying a game, click the yellow “Menu” button and select “Search”. The submenu will give you three additional search types:



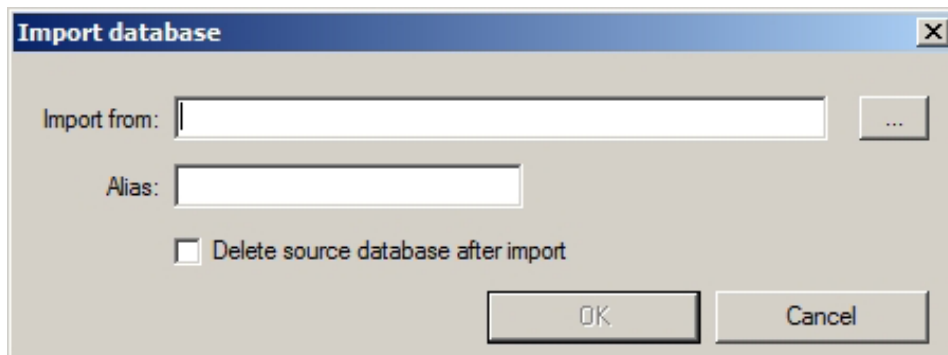
- If you choose “White player” or “Black player”, Chess King will search the GigaKing database for games played by either the White or Black player of the game you're currently viewing.
- The “Current position” search command is an awesome tool for researching openings. Clicking this option will have Chess King search the GigaKing database for all games in which the current board position was played regardless of the move order prior to that position! The software catches all move transpositions and may show you a different way to reach the current board position. It's also a handy tool when learning about the chess openings. Most chess sources on the opening don't provide complete games; they stop after a certain number of moves and provide just an evaluation of the position. But with Chess King you can manually enter the moves (or input them using the chess tree, as we'll learn in a later chapter), then search for the board position in question to learn more about the middlegames and endgames which arise from that opening variation!

Chess King will also let you create and import databases. You'll find buttons for those purposes to the right of the “Find games” dialogue in the Games view:



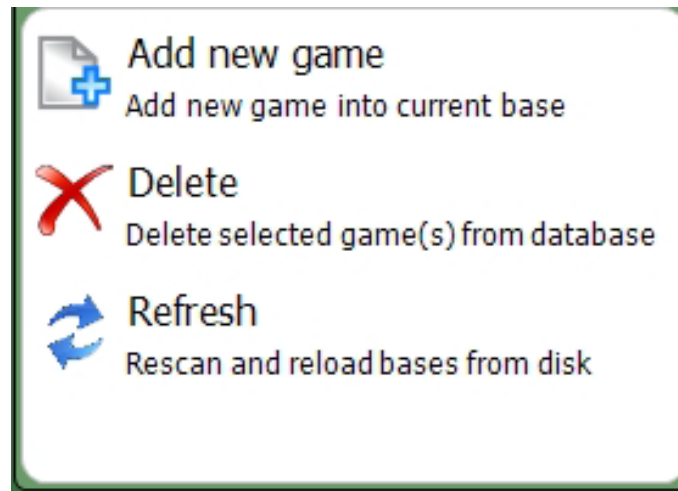
- If you click the “New” button, Chess King presents a dialogue when lets you enter the name of your new database. Type the name, click “OK”, and the database is created and added to the list of databases in the left-hand panel of the “Games” screen. The database is created in PGN (Portable Game Notation) file format.

Clicking the “Import” button gives you a dialogue which will let you import a database from elsewhere on your hard drive:



- Click the box to the far right of the “Import from” box to reveal a dialogue that lets you navigate to ant folder on your hard drive and import a database from that folder. The “Alias” box lets you type a new name for the database as it will appear in the left-hand “Games” pane. Chess King supports databases in .PGN, .CDP (Chess Assistant), and .CBH (ChessBase) formats; these are the three most popular file formats for chess databases.
- Be careful when using the “Delete source database” box. Checking it will delete the original database from elsewhere on your hard drive (to help prevent database duplication); be sure you really want to delete the original database before checking the box.

There are a few last database tools located below the left-hand panel in the “Games” view:



- Click **“Add New Game”** if you'd like to add a game to the current database. You'll be automatically returned to the “Analysis” screen, where you can enter the game and header (as described in an earlier chapter) and save it as a new entry to the database.
- If you want to delete a game, highlight it by single-clicking in the game list and then click **“Delete”**. Be careful when using this command! Deleting a game can't be undone!
- Sometimes you may want to reload a database from your hard drive; once in a while a database file may become corrupted, or you may accidentally delete a game from your database. The **“Refresh”** button will reload the database from its original source. Note that if you originally imported the database from a removable disk (such as a CD), you may be prompted to insert the removable medium from which the database came.

# CHAPTER 14

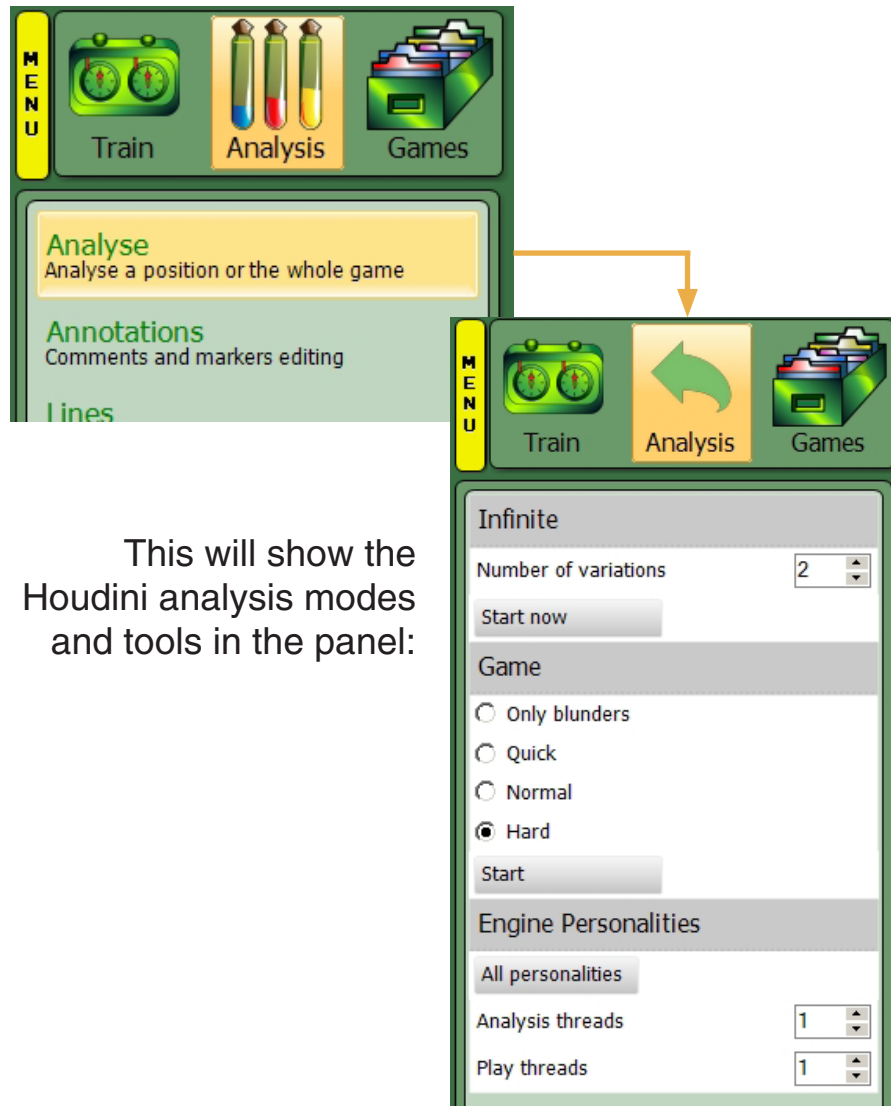
**Analyzing your games with Houdini**

# ANALYZING YOUR GAMES WITH HOUDINI

It's not always possible to have a strong human player analyze your games; a chess coach may not be available in the area in which you live. But that's where Houdini, the chess engine which comes with Chess King comes in! Houdini is at your beck and call, available to analyze single positions or entire games whenever you wish!

When you're playing through a game from your database, you might want a little extra help in understanding what's happening in the game. You can have Houdini's help whenever you like; Houdini will analyze the current board position and, as new moves are played while you replay a game, Houdini will analyze each new position as you step through the game.

There are a couple of different ways to start Houdini's positional analysis as you replay a game. One is to click the “Analyze” button in the ribbon, and then click “Analyze” from the left-hand panel:

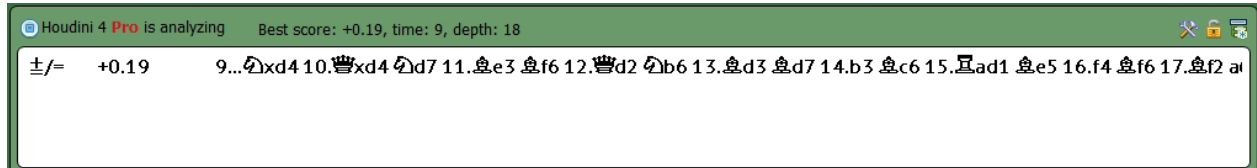


This will show the Houdini analysis modes and tools in the panel:

- In this panel, the **“Infinite”** section provides the controls for analyzing single positions. “Game” offers options for having Houdini analyze complete games (which we'll examine a bit later in this chapter). The curiously-named “Engine Personalities” section provides advanced tools which chess programmers and developers can use to modify the way Houdini plays. The majority of these options are undocumented; only one will be presented in this book a bit later on. Right now, let's look at the controls under “Infinite”.



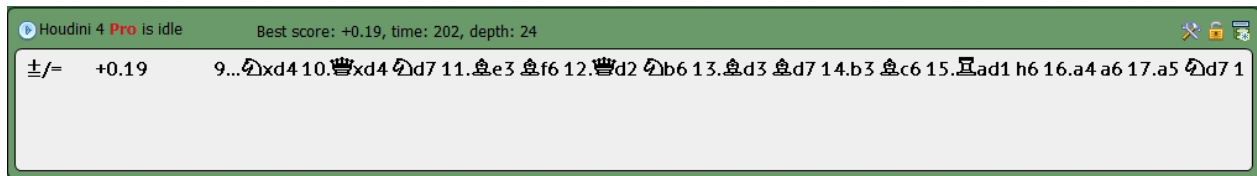
To start Houdini on the task of analyzing the position currently on the board, click the “Start now” button. After a few moments the engine panel at the bottom of the screen will spring to life and you'll see Houdini hard at work analyzing the position at hand:



- (By the way, I said that there were a couple of ways to launch Houdini's analysis. The second way is to click the blue button in the upper left-hand corner of the engine panel above. This button can be used to quickly turn Houdini on and off.)
- You can see in the illustration above that Houdini is hard at work analyzing the current board position. Houdini will provide the best variation from the current board position (assuming best play for both sides, meaning that each player makes the strongest possible move). Symbols to the far left of the variation show graphically who would be ahead assuming that the moves of the variation displayed are played. (You can find a list of those symbols and what they mean by hitting CTRL-A while viewing a game, as we learned in Chapter 12; you can mouse over the symbols in that display to see what each symbol means.) To the right of the symbol is a numeric evaluation of the position, gauged down to 1/100th of a pawn. A positive number means that White is better, while a negative value indicates that Black is better. In the illustration above, White is very slightly ahead, by 19/100ths of a pawn. If the value was instead given as +1.00, it would mean that White was a full pawn ahead.
- Here are some values to help you understand the numbers: 0.0 is an even game. 0.30 is equivalent to about a tempo (or move), which is about the smallest measurable (to a human) quantity in a computer's evaluation. 1.00 is the value of a pawn. 3.00 is the value of a minor piece. 5.00 is the value of a Rook. 9.00 is the value of a Queen. 299.99 is a value signifying that the player is clearly winning; this is typically seen when one side has a forced mate or is materially so far ahead that exact numbers are for all intents and purposes meaningless.

- Note that Houdini doesn't just measure material, but also positional factors (such as space and pawn structure), as well as a time advantage (such as a tempo advantage as mentioned in the preceding paragraph). So even though a player may have a material advantage, his position may not be very good and the number provided by Houdini would not reflect the full value of the material. For example, Black may be two pawns ahead, but Houdini evaluates Black's advantage as -1.25 (just a pawn and a quarter) due to the lack of mobility for Black's pieces.
- The upper bar of the engine pane provides some extra information. We see the best (from the point of view of the moving player) evaluation Houdini has found so far in the current position. We see the amount of time (in seconds) which Houdini has spent on analyzing the current position. We also see how far ahead (the "depth") Houdini has searched. This number is given in half-moves (that is, one move for one player is a half-move, also known as a "ply"); in the above illustration, Houdini has looked ahead to a depth of 18 plies or, in other words, nine moves for each player.

The reason this analysis mode is called “infinite” is that Houdini will continue to analyze the current position until you stop it. The longer you allow Houdini to analyze, the farther ahead it will look and the better its analysis will be. How long you let it analyze is up to you, but bear in mind that the number of positions Houdini must analyze increases exponentially with each additional ply in its search depth. On a relatively new computer you will see it shoot through 18 to 21 plies of analysis very quickly (in just a handful of seconds), but then you'll see the “Depth” number increment more slowly. It may take Houdini 3 to 4 minutes to reach a depth of 25 plies:



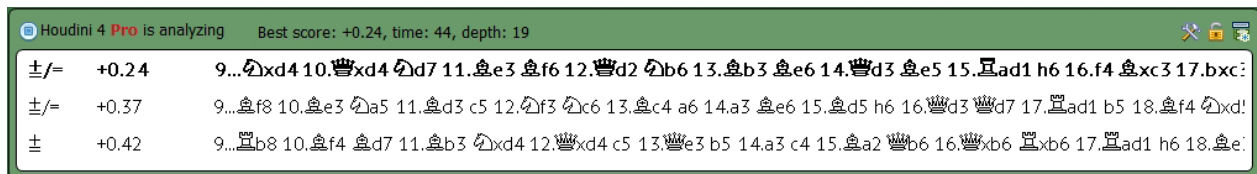
- How long you'll let it analyze is ultimately up to you, although for the average player an analysis of two to five minutes should be plenty.
- You'll notice that there are three small buttons at the upper right of Houdini's analysis window. The leftmost (“crossed tools”) button brings up the same advanced engine settings dialogue which the “Engine Personalities” section of the panel does (as we mentioned earlier).
- The second (“lock”) button lets you “lock” Houdini into analyzing the current board position. Normally as you step through a game move by move, Houdini begins to analyze each new move as it's made on the chessboard. Using the “Lock” button will cause Houdini to continue to analyze the current board position, even if you move on to other moves in the game. This is a great way to make more efficient use of your study time; instead of having to wait around for Houdini to reach a decent search depth, you can “lock” the engine in place and let it continue to analyze the current position while you move on to look at more moves in the game.

The third (“variation”) button will insert Houdini's analysis into the gamescore so that you can play through the variation which is displayed in the engine panel. Click that button to pop Houdini's analysis into the game; then you can click on the variation to replay its moves and see what Houdini thinks is the best course of action for both players:

```
[...] 1.e4 e5 2.♘f3 ♘c6 3.♗c4 ♘f6 4.d4 exd4 5.O-O d6 6.♘xd4 ♗e7 7.
♘c3 O-O 8.h3 ♜e8 9.♞e1|♘d7?
[9...♘e5=;
9...♘xd4 10.♞xd4 ♘d7 11.♗e3 ♗f6 12.♞d2 ♘b6 13.♗d3 ♗d7 14.b3 ♗c6 15.♞ad1
h6 16.a4 a6 17.a5 ♘d7 18.b4 ♗e5 19.f4 ♗xc3 20.♞xc3 ♞h4 21.♞f1 ♘f6 22.♗f2
♞xf4 23.♗d4 ♞h4 24.♗xf6 gxf6 25.♞xf6 ♞xf6 26.♞xf6 ♗xe4 27.♞xh6 ♗xd3 28.
♞xd3 +0.18 Houdini (0:03:22) 9.Re1]
10.♗xf7+! ♗xf7 11.♘e6 ♘de5
```

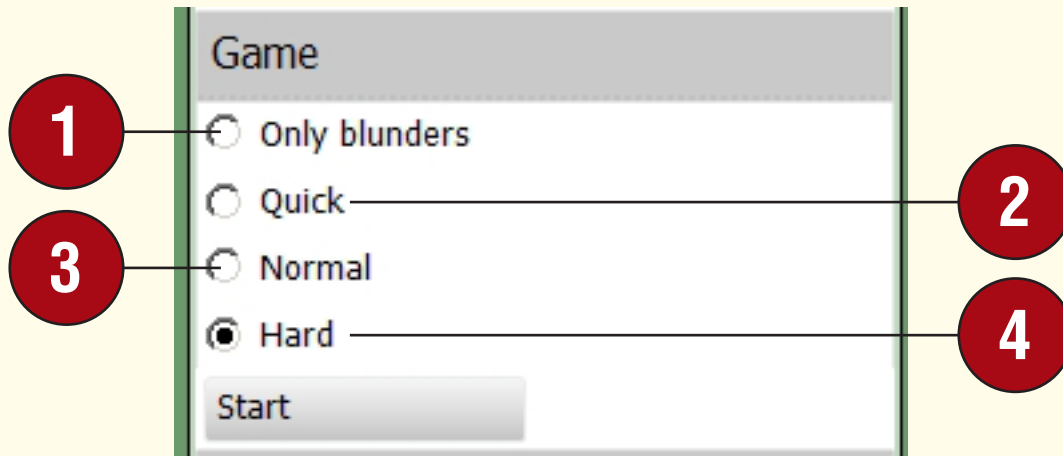
- You can see in the above illustration that when you insert the variation into the game, you also get Houdini's numerical evaluation of the final position of the variation, plus the amount of time it took Houdini to arrive at its conclusion. (If you highlight the last move of the variation, hit CTRL-A, and then click the “Evaluation” tab in the Analysis dialogue [as described in Chapter 12], you see that the setting of the slider matches Houdini's numerical evaluation. Moving the slider changes the evaluation, but that defeats the purpose of having Houdini's analysis in the first place.)

Going back to the “Infinite” section of the left-hand panel, you'll see a box beside “Number of variations” which allows you to set a value from 1 to 3. This controls the number of variations which will be displayed in the Engine panel while Houdini is analyzing a position. Houdini will not only show the best idea for the moving side in the current position, but will also show the second- and third-best moves, along with a numeric evaluation for each. This is useful for seeing how the move that was actually played (or your own idea, if you're using “Demo mode” and trying to guess the next move) measures up to the move which Houdini preferred:



- Note, though, that when you click the button to copy the analysis into the gamescore, only the top variation is inserted; the other two variations aren't copied to the game.

Houdini will also analyze complete games as well as individual positions. These can be games you've played against Chess King, casual, club, or tournament games which you've entered manually into a database, or even games from the GigaKing database (or other databases)! You'll find the controls for analyzing whole games in the “Game” portion of the panel:



- Full game analysis is really easy to use. First double-click on a game from the database list (see the previous chapter) to load it into the main Analysis screen of Chess King. Then click “Analyze” from the ribbon, and the “Analyze” command from the left-hand panel to reveal the “Game section” from the illustration above. You can then click one of the four options:

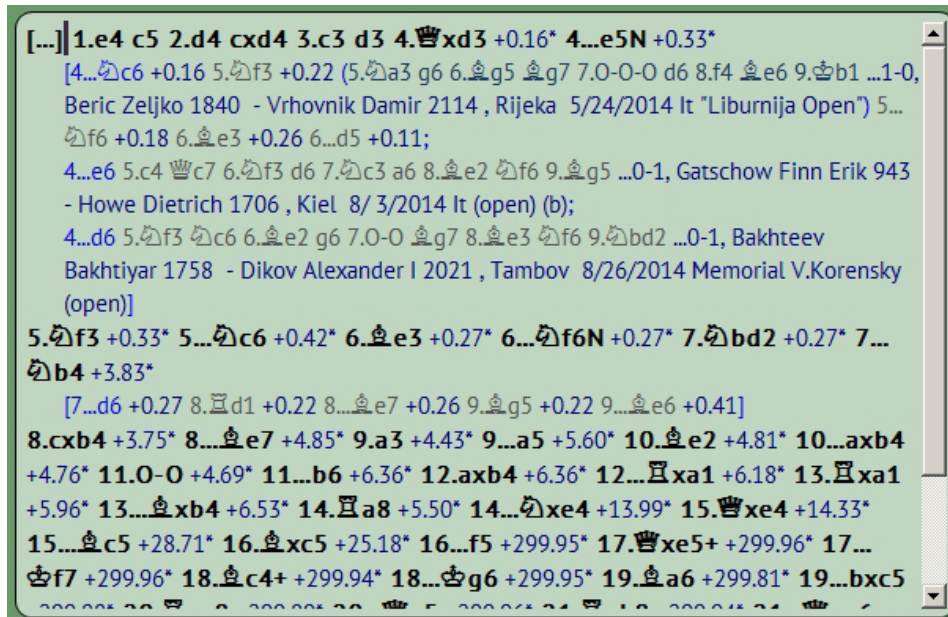
**1** “**Only blunders**” does a very quick analysis of the game and points out only the moves which lost a pawn or more. This setting is best used by novice players.

**2** “**Quick**” does a very speedy cursory analysis of the game. The analysis will be very good, but not as accurate as it would be if one of the longer settings is used.

**3** “**Normal**” provides a very acceptable analysis quality. It doesn't take as much time as the “Hard” setting, and trades a bit of accuracy in some of the more complicated parts of the game for a faster analysis.

**4** “**Hard**” is the most detailed setting. Houdini will take as much time as it needs to provide the best possible analysis; analyzing a thirty-move game at this setting can easily require an hour or more of analysis time.

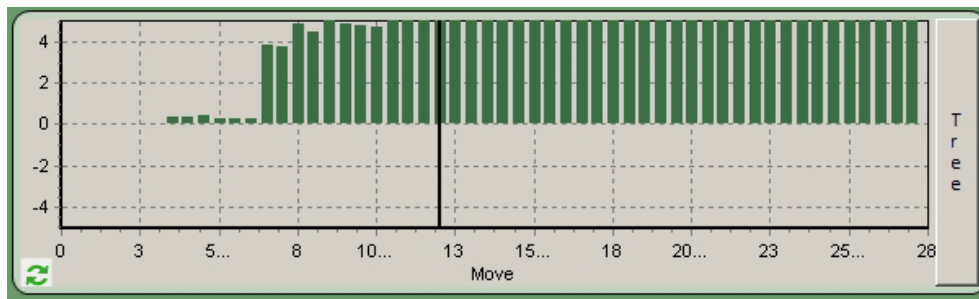
Choose one of the settings and then click “Start”. Houdini will then begin to analyze the game. You'll see a progress bar which gives an idea of how far Houdini has gone into its estimated projected time needed for the analysis type you've selected, as well as an “Abort” button which lets you stop Houdini's analysis at any time. When Houdini has completed its analysis, you'll see a popup box informing you of the fact, and you'll see the analysis in the Notation panel:



```
[...] 1.e4 c5 2.d4 cxd4 3.c3 d3 4.♖xd3 +0.16* 4...e5N +0.33*
[4...♗c6 +0.16 5.♗f3 +0.22 (5.♗a3 g6 6.♗g5 ♗g7 7.0-0-0 d6 8.f4 ♗e6 9.♗b1 ...1-0,
Beric Zeljko 1840 - Vrhovnik Damir 2114 , Rijeka 5/24/2014 It "Liburnija Open") 5...
♗f6 +0.18 6.♗e3 +0.26 6...d5 +0.11;
4...e6 5.c4 ♖c7 6.♗f3 d6 7.♗c3 a6 8.♗e2 ♗f6 9.♗g5 ...0-1, Gatschow Finn Erik 943
- Howe Dietrich 1706 , Kiel 8/ 3/2014 It (open) (b);
4...d6 5.♗f3 ♗c6 6.♗e2 g6 7.0-0 ♗g7 8.♗e3 ♗f6 9.♗bd2 ...0-1, Bakhteev
Bakhtiyar 1758 - Dikov Alexander I 2021 , Tambov 8/26/2014 Memorial V.Korensky
(open)]
5.♗f3 +0.33* 5...♗c6 +0.42* 6.♗e3 +0.27* 6...♗f6N +0.27* 7.♗bd2 +0.27* 7...
♗b4 +3.83*
[7...d6 +0.27 8.♗d1 +0.22 8...♗e7 +0.26 9.♗g5 +0.22 9...♗e6 +0.41]
8.cxb4 +3.75* 8...♗e7 +4.85* 9.a3 +4.43* 9...a5 +5.60* 10.♗e2 +4.81* 10...axb4
+4.76* 11.0-0 +4.69* 11...b6 +6.36* 12.axb4 +6.36* 12...♗xa1 +6.18* 13.♗xa1
+5.96* 13...♗xb4 +6.53* 14.♗a8 +5.50* 14...♗xe4 +13.99* 15.♖xe4 +14.33*
15...♗c5 +28.71* 16.♗xc5 +25.18* 16...f5 +299.95* 17.♖xe5+ +299.96* 17...
♗f7 +299.96* 18.♗c4+ +299.94* 18...♗g6 +299.95* 19.♗a6 +299.81* 19...bxc5
```

- Houdini will provide a numerical analysis for each move of the game (similar to the “on the fly” analysis you receive when you play against Chess King in Quest and Classical modes). Houdini will also show variations at points in the game where one player erred significantly. The program even inserts opening references just like the ones you see in chess books and magazines!

You can play through the game and keep an eye on the numbers to see the ebb and flow of the game as the advantage swings from one player to the other. In fact, Chess King even provides a visual graph for Houdini's evaluations to make it easy for you to find the “crisis points” in a game. If the panel just below the Notation panel shows the chess tree (which we'll learn about in the next chapter), click the “Graph” button to the right of the tree to display Chess King's evaluation graph:



- This graph provides an easy visual guide to Houdini's evaluations for the moves of the game. The numbers along the lower part of the graph (the x axis) correspond to the move numbers in the game. The numbers along the lefthand side of the graph (the y axis) correspond to the numerical evaluations (0 pawns, 2 pawns, and 4 pawns). A bar above the center line shows that White has the advantage at that point in the game, while a bar below the center line shows that Black enjoyed the better evaluation; the longer the bar, the greater the advantage. The heavy vertical black line will move across the graph as you replay the game; it shows what move is currently displayed on the chessboard (and the position of the cursor in the game notation).
- Using a strong chess engine to help guide your study is one of the most important features of using any chess program. Chess King's easy to use and understand interface along with Houdini's strength as a chess engine is a tough combination to beat!



# CHAPTER 15

## The chess tree

# THE CHESS TREE

Chess is a game of myriad possibilities. Most chess positions provide a large number of possible moves to a player, and his or her opponent has a large number of possible replies to each of those moves. These possibilities branch out at an exponential rate, creating a “tree” of possibilities. The chess tree features of Chess King let you explore this tree of possibilities in the opening of a chess game in a structured and informative manner.

The Chess King chess tree combines all of the games from the GigaKing database into an easily used statistical display. For each opening position found in a game from GigaKing, you'll see all of the moves which were played in that position, how many games each move appeared in, and how successfully the games ended for the moving player.

Event: Ch Bulgaria  
 Result: 1/2-1/2 Date: 2003  
 ECO: C68 Site: Sofia (Bulgaria)  
 Hide engine  Demo mode

[...] 1.e4 e5 2.Nf3 Nc6 3.Bb5 a6 4.Bxc6 dxc6 | 5.O-O ♖d6 6.b3 f6 7.  
 ♜b2 c5 8.a4 ♜e7 9.♜a3 ♜e6 10.♜c4 ♖d7 11.♖e2 ♜c6 12.a5 O-O-O  
 13.d3 g5 14.♞fd1 h5 15.♜e3 ♜d4 16.♜xd4 cxd4 17.♜f1 h4 18.♞ab1  
 h3 19.g3 f5 20.exf5 ♜xf5 21.♜d2 g4 22.♜e4 ♞h6 23.♜c1 ♞c6 24.♜g5  
 ♞e8 25.b4 ♖d5 26.♞b2 ♞g6 27.♜d2 ♜d7 28.♞e1 ♞f6 29.b5 axb5  
 30.c4 dxc3 31.♜xc3 ♞f3 32.♜b4 ♜xb4 33.♞xb4 ♞ef8 34.♖d2 ♞xf2  
 35.♖xf2 ♞xf2 36.♜xf2 ♖xd3 37.♞e3 ♖d1 38.♞e2 ♜c6 39.♜d2 ♖h1  
 40.♜e3 ♜f3 41.♞b1 ♖xb1 42.♜xb1 ♜xe2 43.♜xe2 ♜d7 44.♜c3 ♜c6

Moves	Positions	Success	Score
O-O	15,999	55%	+0.05
d4	2,963	48%	-0.17
♜c3	2,719	55%	-0.02
d3	846	45%	+0.05
♜xe5	623	31%	-0.24
h3	411	45%	+0.01
b3	39	33%	-0.02
c3	35	44%	-0.21
♖e2	11	45%	+0.05
a3	5	70%	+0.05

Graph

⏪ ⏩ ⏴ ⏵

- As you see in the illustration above, the chess tree is located just below the Notation panel in the main Chess King screen. When you click on a move in the notation, Chess King checks the tree based on GigaKing's games to see if the position is in the tree. If it is, the Tree panel will display all of the moves which were played in that position (based on the games in GigaKing), as well as providing useful statistical information for each of those moves. For example, the game in the illustration above started with the moves 1.e4 e5 2.Nf3 Nc6 3.Bb5 a6 4.Bxc6 dxc6. The tree shows all of White's replies in this position based on the games in GigaKing.
- Please note that we said "all of White's replies in this position" rather than "all of White's replies to 4...dxc6". That's because the chess tree is transpositional, which means that the statistics are based on moves made from a given position rather than after a certain move order. So, for example, games which started with a different move order (let's say 1.Nf3 Nc6 2.e4 e5 3.Bb5 a6 4.Bxc6 dxc6) which reached the same board position are also included in the statistical results.

Let's take a closer look at the chess tree to gain a clearer understanding of what the numbers mean.

Moves	Positions	Success	Score
O-O	15,999	55%	+0.05
d4	2,963	48%	-0.17
♘c3	2,719	55%	-0.02
d3	846	45%	+0.05
♘xe5	623	31%	-0.24
h3	411	45%	+0.01
b3	39	33%	-0.02
c3	35	44%	-0.21
♔e2	11	45%	+0.05
a3	5	70%	+0.05

- In the position we've been discussing, the most popular reply for White is to castle on the Kingside. It has been played in 15,999 games (as seen in the "Positions" column; this tells us how many times the position appeared in the database).

The number in the “Success column” shows us how successful the move was, based on the games in which the move was played. The easiest way to understand the Success percentage is to think of the 15,999 games in which the move was played as representing a “pool” of points. As you may know, in a chess tournament the winner of a game scores one point (toward the final tournament standings), while the loser gets zero points. If a game is drawn, the players split the point, each of them scoring one-half of a point. If you think of the 15,999 games as representing a pool of 15,999 points, we see that White's success percentage after castling Kingside is 55%; this means that White earned 55% of the 15,999 available points (or approximately 8,799 points) through winning and drawing games. Note that the Success percentage is always given from the point of view of the moving side; the higher the success percentage, the better the moving side scored after making that move. If we use the scroll bar to the right-hand side of the tree to scroll to the bottom of the list of moves:

d4	2,963	48%	-0.17
♘c3	2,719	55%	-0.02
d3	846	45%	+0.05
♘xe5	623	31%	-0.24
h3	411	45%	+0.01
b3	39	33%	-0.02
c3	35	44%	-0.21
♔e2	11	45%	+0.05
a3	5	70%	+0.05
c4	2	0%	-0.24
♔f1	1	100%	-0.01

- ...we see that White scored 100% in the single game in which Kf1 was played in this position. It means that the one time White played this move, the player of the White pieces won the game. Conversely, we see that c4 was played in two games with a 0% Success percentage; that means that White lost both of those games.




Note that the Success percentage is not an evaluation of how good a move is, but is instead a gauge of how well a move performed in practical play as represented by the games in the GigaKing database. However, the right-hand “Score” column is a computer evaluation of how good a move is, based on computer evaluation of the resulting position after the move is played. The position is evaluated by a strong chess engine (using the same process as running a engine analysis on a position in Chess King as we saw in the last chapter) and the result in the “Score” column is read in exactly the same way as you'd read Houdini's analysis. In the following illustration, the Score column to the right of O-O shows that White is ahead by 5/100ths of a pawn after White has castled on the Kingside:

Moves	Positions	Success	Score
O-O	15,999	55%	+0.05
d4	2,963	48%	-0.17
♘c3	2,719	55%	-0.02
d3	846	45%	+0.05
♘xe5	623	31%	-0.24
h3	411	45%	+0.01
b3	39	33%	-0.02
c3	35	44%	-0.21
♙e2	11	45%	+0.05
a3	5	70%	+0.05

You're able to change the sort order of the moves displayed in the chess tree. The default sort order displays the moves in order of the number of times the resulting position appears in the GigaKing database (with the move most often played appearing at the top of the list). If you click the word “Success” at the top of the column displaying the success rate of the moves, the list will be sorted again with the move enjoying the highest success rate appearing at the top of the list:

Moves	Positions	Success	Score
♔f1	1	100%	-0.01
a3	5	70%	+0.05
O-O	15,999	55%	+0.05
♘c3	2,719	55%	-0.02
d4	2,963	48%	-0.17
♔e2	11	45%	+0.05
h3	411	45%	+0.01
d3	846	45%	+0.05
c3	35	44%	-0.21
b3	39	33%	-0.02
♘xe5	623	31%	-0.24

Clicking the column header at the top of the “Score” column will sort the list so that the move with the best computer analysis score appears first. Note however that the list is sorted by the best evaluation from Black's perspective appearing first (as denoted by the minus sign before the evaluation, as we've seen previously in the chapter on analysis), rather than the best move for the moving side appearing first:

Moves	Positions	Success	Score
 xe5	623	31%	-0.24
c4	2	0%	-0.24
c3	35	44%	-0.21
d4	2,963	48%	-0.17
b3	39	33%	-0.02
 c3	2,719	55%	-0.02
 f1	1	100%	-0.01
h3	411	45%	+0.01
O-O	15,999	55%	+0.05
a3	5	70%	+0.05
d3	846	45%	+0.05



However, clicking “Score” a second time will reverse the sort order so that the best move for White appears at the top of the list:

Moves	Positions	Success	Score
♔e2	11	45%	+0.05
d3	846	45%	+0.05
O-O	15,999	55%	+0.05
a3	5	70%	+0.05
h3	411	45%	+0.01
♚f1	1	100%	-0.01
♘c3	2,719	55%	-0.02
b3	39	33%	-0.02
d4	2,963	48%	-0.17
c3	35	44%	-0.21
c4	2	0%	-0.24

- So please take careful note of which side is to move in a position and be sure to sort the list accordingly when sorting by the “Score” value.

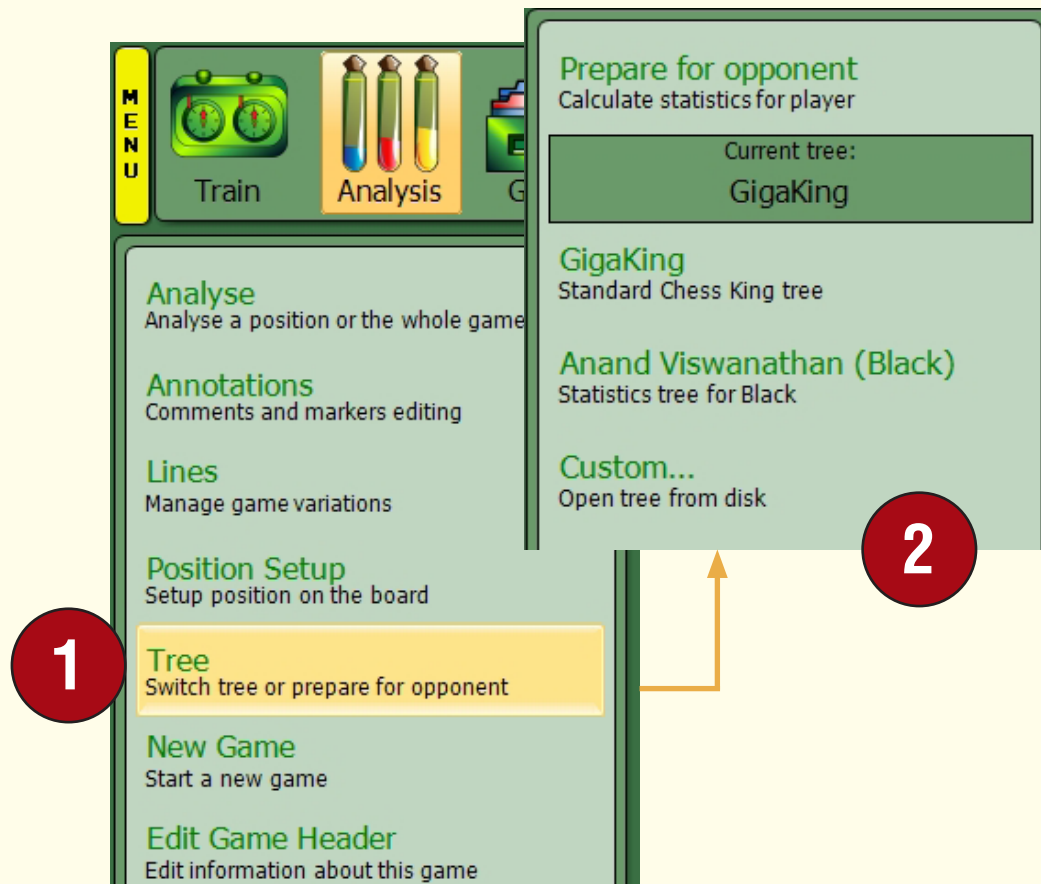
Note that clicking any of the column headers a second time reverses the sort order. So, for example, when you click “Position” to show the most popular move first, you can click “Position” a second time to reverse the sort order and show the least popular move first:

Moves	Positions	Success	Score
♔f1	1	100%	-0.01
c4	2	0%	-0.24
a3	5	70%	+0.05
♚e2	11	45%	+0.05
c3	35	44%	-0.21
b3	39	33%	-0.02
h3	411	45%	+0.01
♞xe5	623	31%	-0.24
d3	846	45%	+0.05
♞c3	2,719	55%	-0.02
d4	2,963	48%	-0.17

- Another great use for the chess tree is as a means of entering moves quickly. If you're entering a game by hand (using the technique discussed in a previous chapter), you can enter moves quickly by double-clicking on the move in the chess tree. The move will be made on the board, and the tree will update to display all the reply moves which were played in that position based on the games found in the GigaKing database.

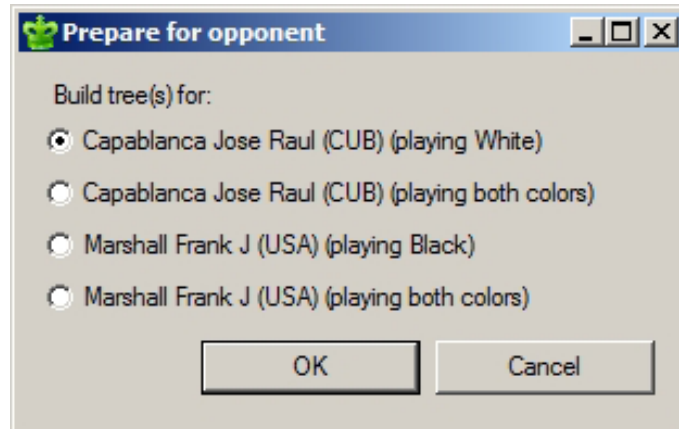
**1** You can also create your own game trees based on the GigaKing database games which were played by a particular player. When you're playing through a game from GigaKing, you can click the "Analysis" button from the Ribbon, then click "Tree" from the left-hand panel:

**2** The panel will change to display a number of options:



- Any trees you've already created will be listed in the panel. You can see in the above illustration that a tree for the games of Viswanathan Anand (playing the Black pieces) had previously been created. Clicking that entry in the panel will open that game tree. Likewise, clicking "GigaKing" from the panel will display the standard Chess King game tree based on the games of the GigaKing database.
- You can load trees from outside the program by clicking "Custom" to show the standard Windows file selection dialogue (just as you see in many other Windows programs, which will allow you to select a file from any folder on any drive). Chess King trees have the file extension .aqt; for example, you'd be able to load a tree file which a friend gave you after he or she created it in Chess King. Tree files in .hsh format are also able to be loaded in this manner.

You can create a new tree based on the GigaKing games of a particular player. After loading one of that player's games in which the player has the color pieces for which you want to create a tree (by double-clicking on it from a database game list, as we discussed in Chapter 13), click “Prepare for opponent” from the left-hand panel. You'll see a dialogue similar to the one pictured below:



- The game I selected had J.R. Capablanca playing the White pieces and Frank Marshall playing Black. I'm provided with a choice of trees: Capablanca as White, Marshall as Black, and combined White and Black games for either player. There's little reason to ever create a tree based on all of a player's games (as opposed to creating a tree by what color pieces he or she played) for the very practical reason that you'd have no way to know whether a move in the tree was played by the player in question or one of his or her opponents. It's for that reason that we recommend that you create trees based on either the White or Black games of the player, so that you'll always know whether a move in the tree was played by the player or an opponent.

In this case, we wish to create a tree based on Marshall's games with the Black pieces. We select the radio button for Marshall playing as Black, and then click "OK". Chess King will search the GigaKing database for all of the games in which Frank Marshall played the Black pieces, and will after just a few moments present us with the game tree:



You'll see the tree listed in the left-hand panel (and the green bar shows that the tree's been loaded automatically):

Moves	Positions	Success	Score
e4	342	46%	+0.12
d4	169	54%	+0.09
♞f3	22	52%	+0.12
c4	9	44%	+0.05
f4	4	38%	-0.06
e3	2	0%	+0.09
♞h3	0		-0.35
h3	0		+0.01
c3	0		+0.01
h4	0		-0.17
♞a3	0		-0.28

Creating a tree based on a player's games is an incredibly useful tool for studying the games of great players. You can see at a glance how a player responded to various openings. For example, here's how Marshall's tree looks after the move 1.e4 is played:

Moves	Positions	Success	Score
e5	272	55%	+0.12
e6	39	42%	+0.16
c5	20	68%	+0.16
d5	6	50%	+0.38
♟f6	4	75%	+0.31
d6	1	50%	+0.34

- We can see in an instant that Marshall was overwhelmingly an advocate of double King pawn openings when he had the Black pieces: he played 1...e5 more often than all other replies combined.
- Creating a chess tree is also crucial for tournament and match preparation for professional players; a player is able to view an opponent's opening repertoire in just moments and can prepare accordingly. Even amateur chessplayers can use the tree for preparation. Many online correspondence chess sites offer downloadable databases of games which have been played on the site; it's possible to create a tree of games based on such a database to view an opponent's existing known repertoire and possibly find "holes" in an opponent's opening knowledge.

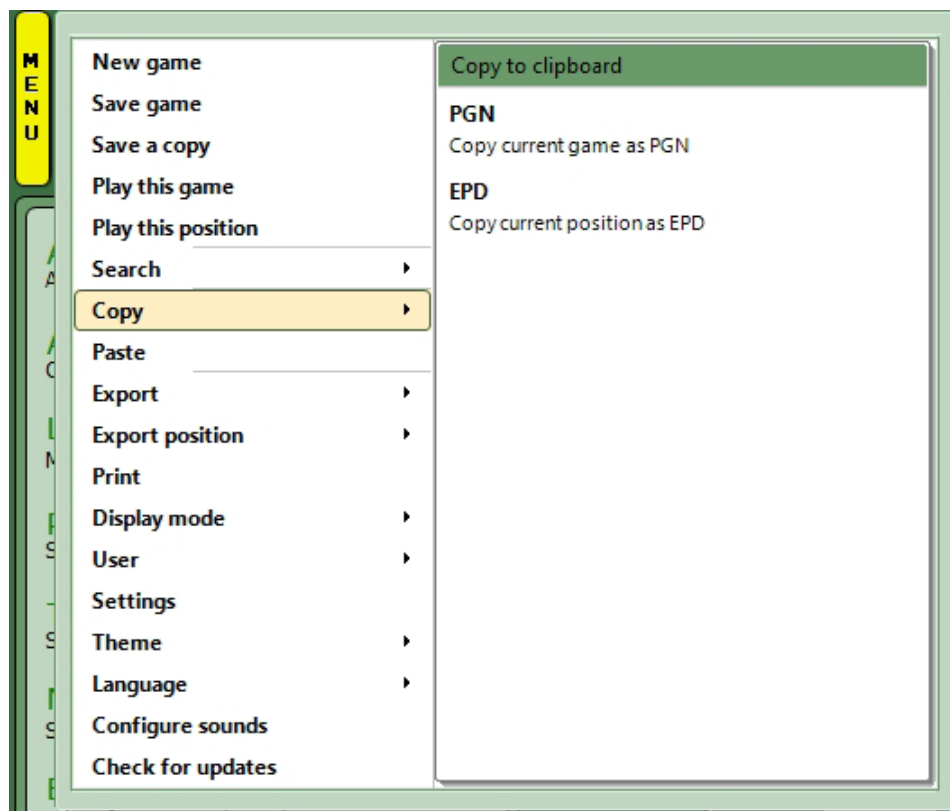
# CHAPTER 16

**Printing and exporting  
games and positions**

# PRINTING AND EXPORTING GAMES AND POSITIONS

The utility and universality of chess notation makes it easy for players and writers to share chess games and ideas, both in print and electronically. Chess King provides you with the tools you need to share games and positions with other players in print form and online (via e-mails, web pages, and even blogs). In this chapter we'll learn how to print and export chess games and positions using Chess King.

After loading a game from a database, the “quick and dirty” way to export the game notation is to click the yellow Menu button and select “Copy”, and then pick either PGN or EPD as a copy option:



- Selecting PGN will copy the notation for the whole game to the Windows Clipboard, while selecting EPD copies just the notation for the current board position to the Clipboard.



It's worthwhile to take a moment and discuss the two types of chess notation formats to which we'll be referring in this chapter. "PGN" refers to Portable Game Notation, a standard for recording chess games which was developed on the Internet in the 1990's. It's called "portable" notation because it's easy to move (or "port") games from one chess program to another, as a PGN format file is nothing more than a text file in which the information is organized in a rigid, standard way, so that any program capable of reading a game in PGN format would be able to access the file, interpret the data, and display the game. PGN format is also readable by the naked eye, without the aid of software. Here's a sample game score in PGN format:

```
[Event «?»]
[Site «London (England)»]
[Date «1858.??.??»]
[Round «8»]
[White «Morphy Paul»]
[Black «Loewenthal Johann J (HUN)»]
[Result «0-1»]
[Annotator «»]
[BlackElo «0»]
[Classes «0»]
[ECO «C41»]
[GameID «57»]
[Remark «»]
[Source «»]
[WhiteElo «2680»]
```

.....

```
1. e4 e5 2. Nf3 d6 3. d4 exd4 4. Qxd4 Bd7 5. Be3 Nf6 6. Nc3 Be7 7. Bc4
Nc6 8. Qd2 Ne5 9. Nxe5 dxe5 10. O-O O-O 11. f4 Bd6 12. f5 Bc6 13. Qe2
h6 14. Rad1 Qe7 15. Bd5 Bxd5 16. Nxd5 Nxd5 17. Rxd5 f6 18. Qg4 c6 19.
Rd3 Bc5 20. Qg3 Rad8 21. Rfd1 Rxd3 22. Rxd3 Rd8 23. Bxc5 Qxc5+ 24.
Qf2 Qxf2+ 25. Kxf2 Rxd3 26. cxd3 c5 27. g4 Kf8 28. a4 b6 29. Kg3 Kf7
30. Kh4 Kf8 31. Kh5 Kf7 32. b3 Kf8 33. Kg6 Kg8 34. h3 Kf8 35. h4 Kg8
36. g5 hxg5 37. hxg5 fxg5 38. Kxg5 Kf7 39. Kh4 Ke7 40. Kg4 Kf6 41. Kh5
a6 42. Kh4 g6 43. a5 bxa5 44. fxg6 Kxg6 45. Kg4 a4 46. bxa4 a5 47. Kf3
Kf6 48. Kf2 Kf7 49. Kg3 Kg7 50. Kf2 Kf6 51. Kg1 Kg5 52. Kg2 Kf4 53. Kf2
c4 54. dxc4 Kxe4 55. Ke2 Kd4 56. Kf3 Kxc4 57. Ke4 Kb4 58. Kxe5 Kxa4
59. Kd4 Kb3 0-1
```



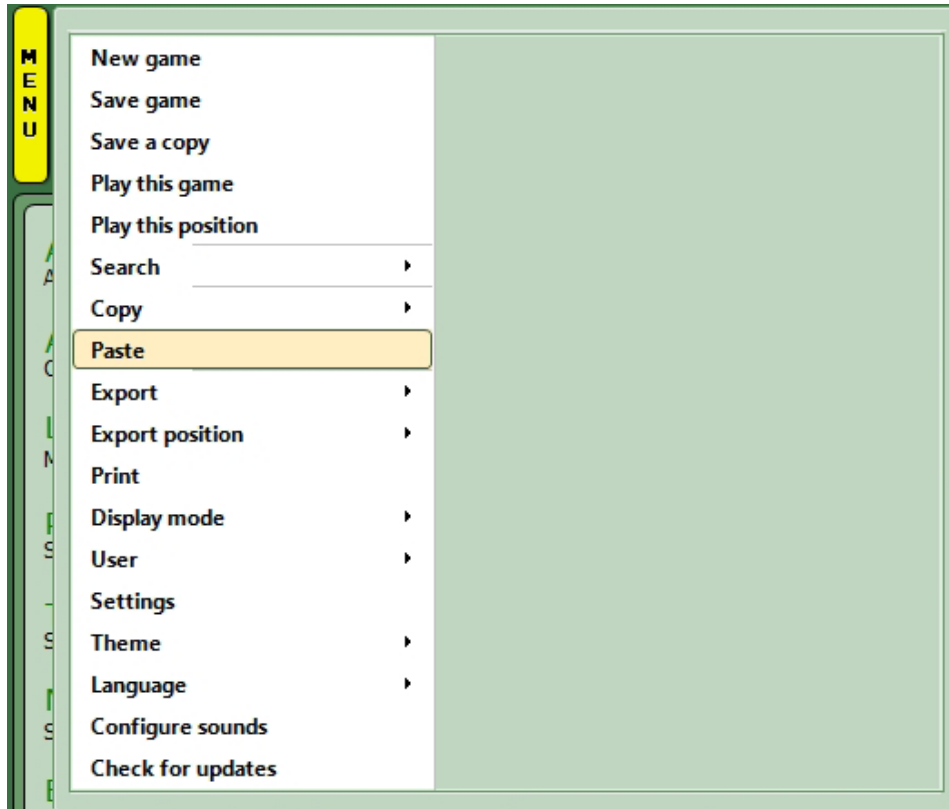


- While an annotated PGN file may contain notations and characters which a human viewer may have trouble interpreting (for example, analysis symbols are provided as alphanumeric codes), in general a human player should be able to read the header information and follow the moves. That makes the “Copy” command a really easy way to e-mail games to a friend. You'd click “Copy PGN” in Chess King, open an new e-mail, and hit CTRL-V on your keyboard to paste the PGN notation into the body of the e-mail.
- Just as PGN is a standard for game notation, EPD (or Extended Position Description) format is just a shorthand notation for a chess position. Here's what the EPD format description looks like for the positions following the move 1.e4:

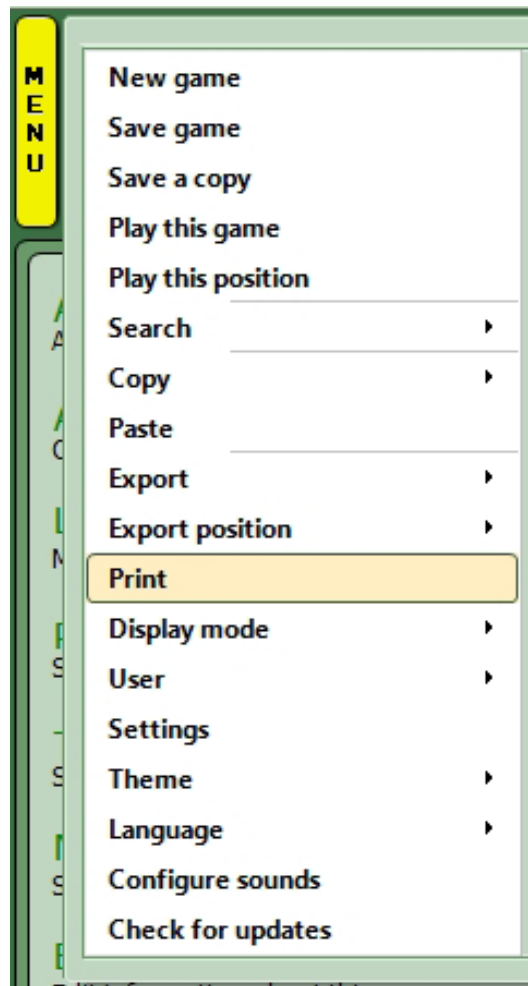
```
rnbqkbnr/pppppppp/8/8/4P3/8/PPPP1PPP/RNBQKBNR b KQkq -
```

- The notation breaks the position down into eight sets of characters (separated by slashes) which correspond to the eight ranks of a chessboard (starting with Black's first rank and working down the board to White's first rank). Black's chessmen are denoted by lower case characters while White's are designated by capital letters. Numbers show empty squares, and the side to move is also designated. Many chess programs are capable of reading EPD notation; you could e-mail a friend the EPD characters (using the Copy command to send the position to the Clipboard, then paste it into an e-mail by typing CTRL-V), send the e-mail to a friend, and he or she could highlight the EPD string, hit CTRL-C to copy it to their Clipboard, then CTRL-V to paste it into their favorite chess program.

Likewise, if a friend sends you a game or position via e-mail the same way, you can highlight the PGN notation or EPD string, hit CTRL-C to copy it to the Windows Clipboard and then, after launching Chess King and clicking Analysis/New Game, use the “Paste” command in the Menu to paste the notation into Chess King and replay the game or view the position:

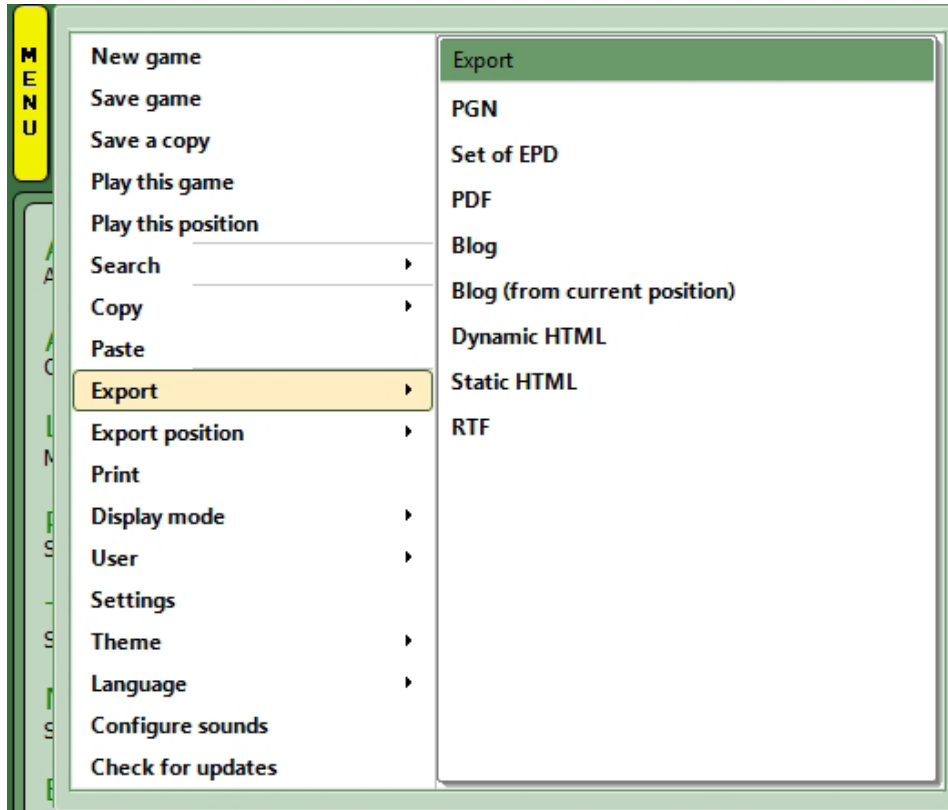


Printing a game is very easy. Here again we'll return to the yellow Menu button and select "Print":

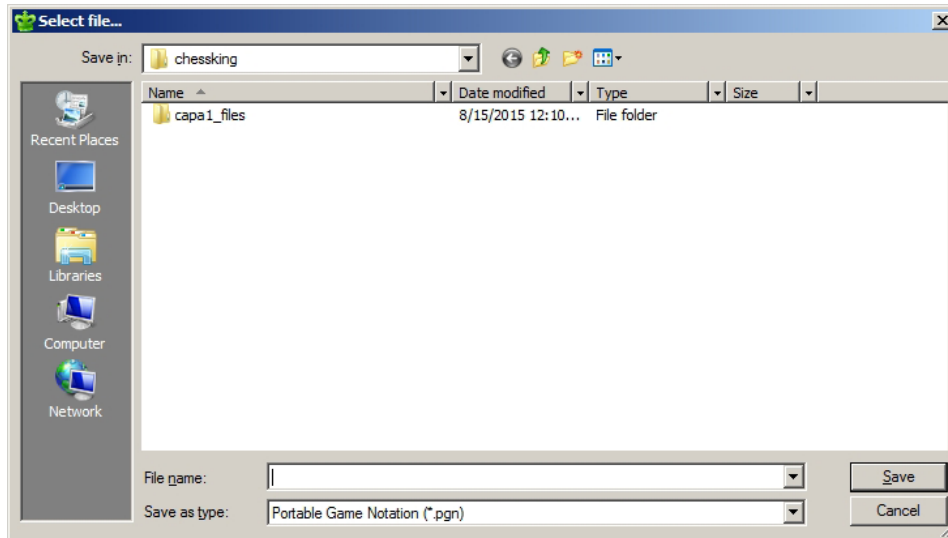


- The Windows printer dialogue will appear; this allows you to select a printer (if you have multiple options), configure the page orientation, and choose all of the other typical parameters for printing that you see when you print a document from any other program.

Chess King also gives you multiple options for exporting games and positions in various forms and formats. When you click the yellow Menu button and select “Export”, Chess King displays the various forms available for exporting full games:



If you select PGN format (Portable Game Notation, described previously), the game will be saved as a file with the .pgn extension in the folder of your choice. The Windows file select dialogue lets you choose the location (drive and folder):



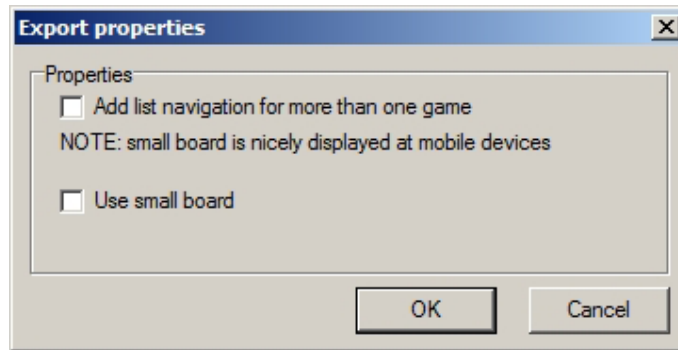
- Selecting **Set of EPD** again displays the Windows file select dialogue, and the file extension is .epd (for Extended Position Description, also previously described). But this selection is special, because it creates a file which contains every position of the game given in Extended Position Description. So, for example, if a game ends after Black's 30th move, the resulting EPD file (after selecting "Set of EPD") will contain 60 lines, each of which is an EPD description of the board position after a move of the game, given sequentially in the order the moves were played.
- If you select **PDF**, Chess King will create a file in Adobe Acrobat (PDF) format, which can also be read by the free Adobe Acrobat Reader software (as well as a variety of third-party programs). Here again, the Windows file select dialogue will be displayed to allow you to choose the drive and folder into which you'd like to save the file.
- Selecting **RTF** saves the file in Rich Text Format (with the .rtf extension) which can be read and edited by most document programs.





- If you have a chess website, you can choose one of the two HTML format options to save the game in a form readable by web browsers. **Static HTML** creates an .html file in which just the game moves are displayed in algebraic notation. Choosing **Dynamic HTML** not only saves the game in algebraic notation but also creates a chessboard and move buttons which will allow your site's visitors to replay the game online using the “dynamic” board. Clicking the forward and backward “VCR” buttons on the web page which Chess King creates will move the pieces on the chessboard, letting the site's visitors replay the game without the aid of a physical board.
- There are two additional options which are useful for online bloggers: **Blog** and **Blog (from current position)**. The only practical difference between the two is that “Blog” exports the entire game, while “Blog (from current position)” exports only part of the game, from the position you've currently displayed in Chess King to the end of the game.

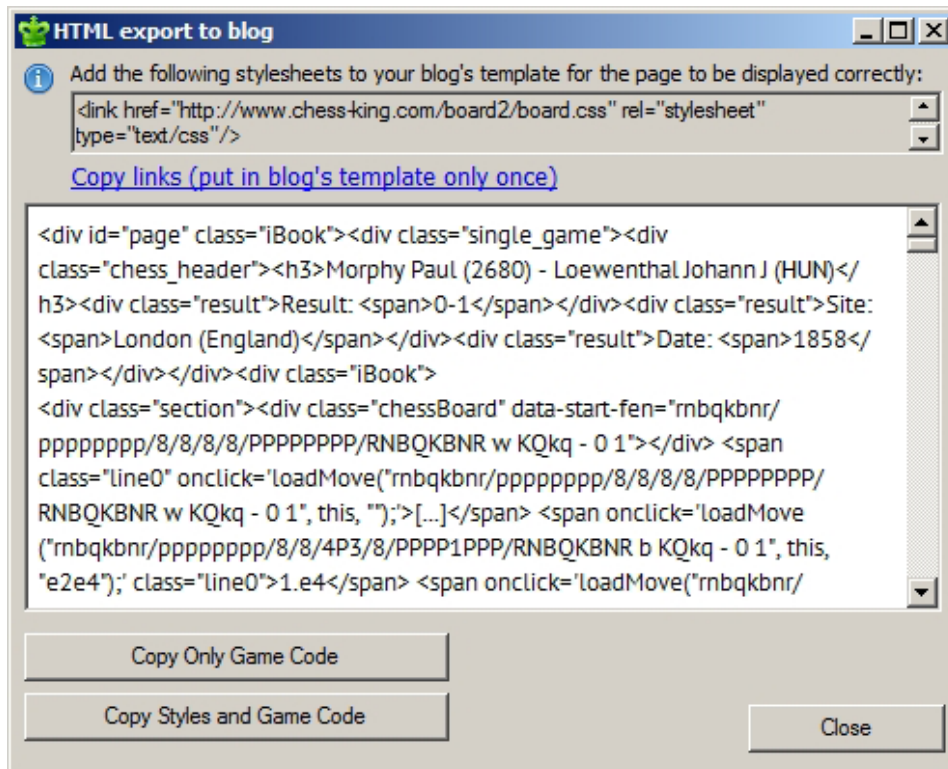
Clicking either option will display the following dialogue:



- If you plan to add multiple games to a single blog post, you may want to select the “Add list navigation” option, which will help you create a game list which will allow your readers to “jump” to a particular game. If you're using an online blog site (or blog template) which formats your text into a narrow column, you may wish to consider using the “Small board” option to keep the dynamic replay board from overlapping the borders of your text column.

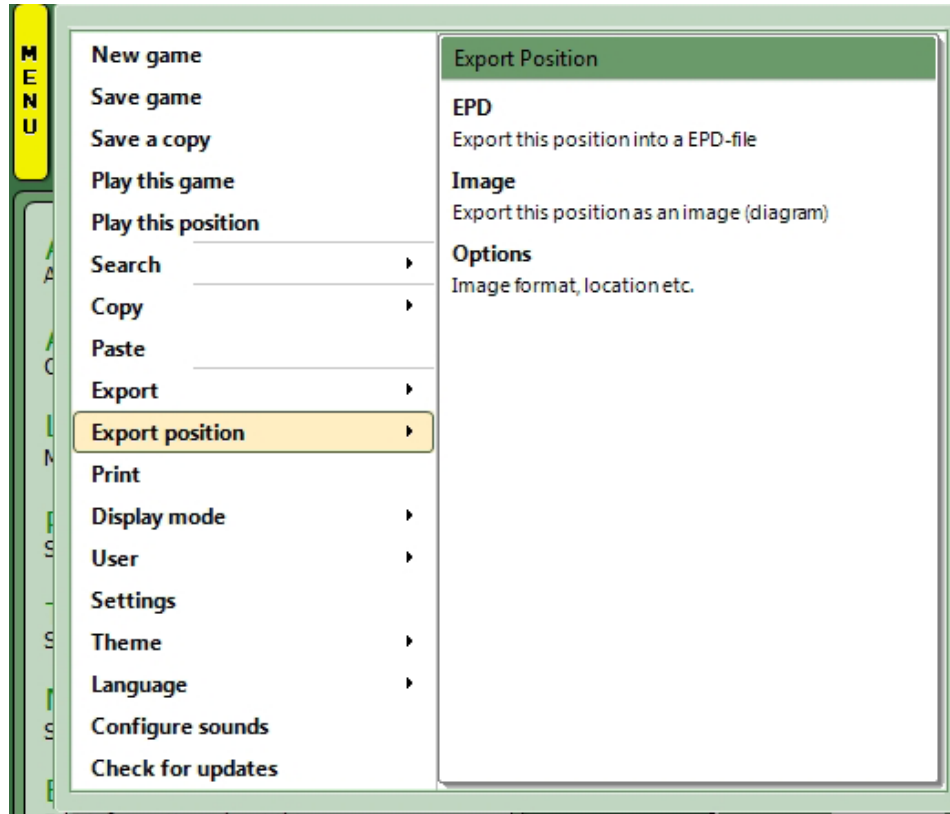


After making any selections you desire in this box, click “OK” to see the following dialogue:



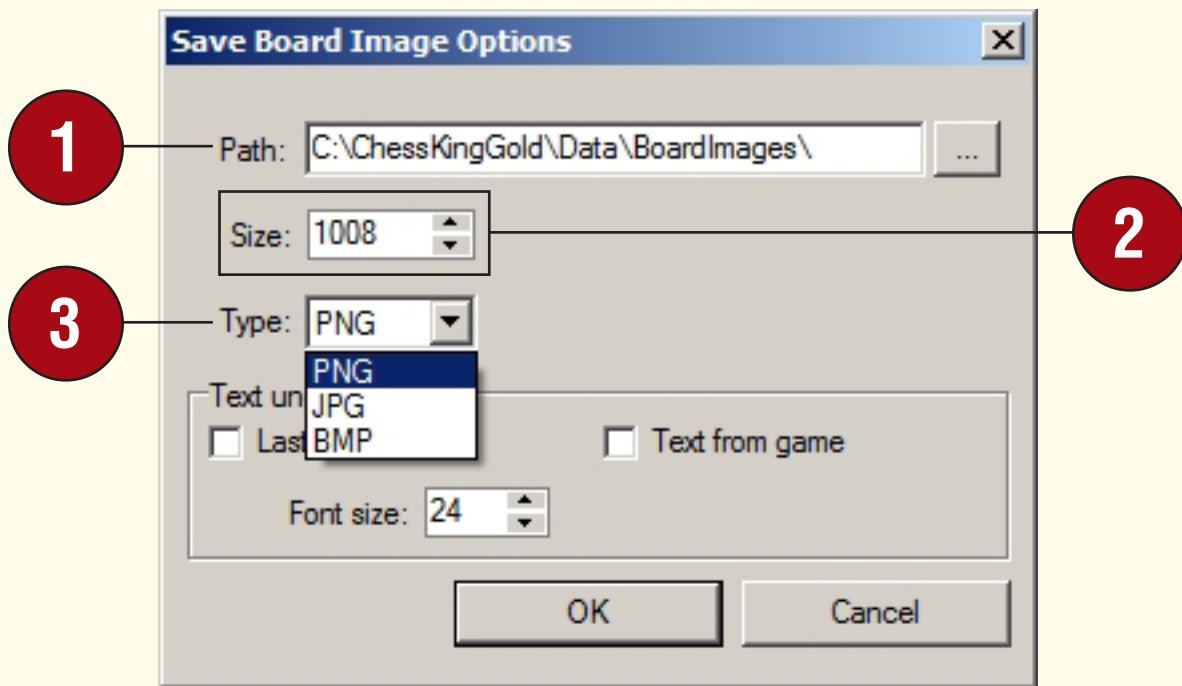
- The HTML code in the upper part of the dialogue will need to be added to your blog's overall template just one time to ensure that chess games are displayed properly on your blog. Clicking the blue “Copy links” line will copy the HTML code to your Windows clipboard so that you can easily paste it into your blog's template (by hitting CTRL-V to paste it into place). If you're unsure how to add the code to your template, please contact technical services for your blog's provider for instructions.
- After you've added the code to your blog's template, you're ready to add games to your blog posts. You can highlight the HTML code in the large white box and hit CTRL-C to copy the code to your Windows clipboard. Two buttons are provided to make this easier for you to do. The first button copies just the game code (without any special formatting, such as underscores or italics for variations), while the other button lets you copy the gamescore with all special formatting (if any) included. Once you've copied the code to your Windows clipboard, you can paste the game into your blog text by clicking CTRL-V.

Finally we come to the options for exporting single positions using Chess King, which can be found under “Export position” (after clicking the yellow Menu button):



- If you select EPD, Chess King will display the Windows file select dialogue so you can select the drive and folder into which you'd like to save the .epd file which will be generated. The file will contain just the current board position in Extended Position Description format).

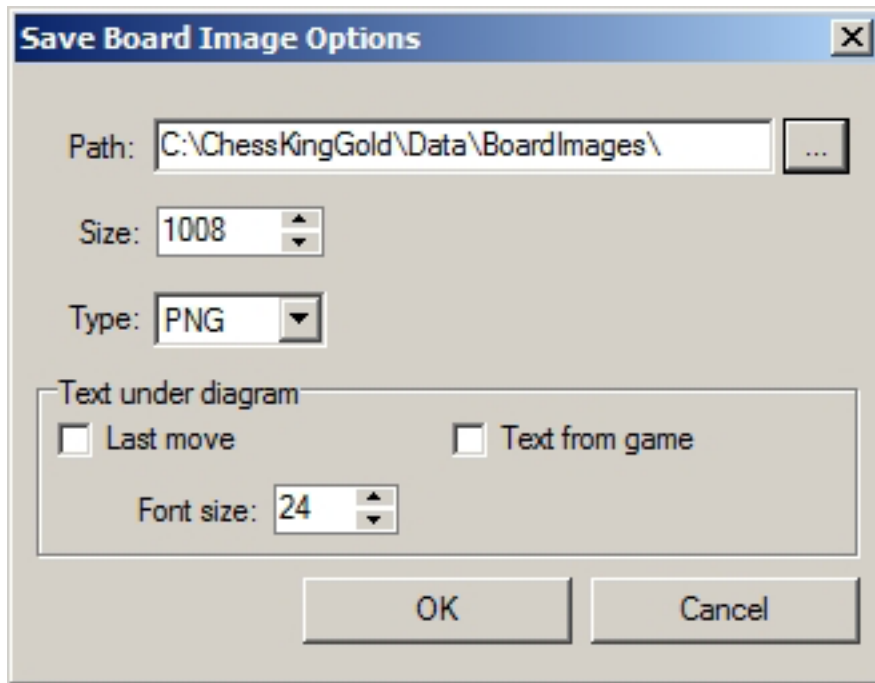
Chess King can also create a graphics file of the current board position, which can easily be imported into a document file or uploaded to the Internet. You'll first want to select Options so that you can choose a file format and the folder into which you'd like the image to be saved:



**1** The **“Path”** parameter lets you select the drive and folder into which you'd like the chessboard image file to be saved. Clicking the rectangular box displaying an ellipsis (“...”) to the right of the white box will display a dialogue which lets you browse to the folder into which you want to save the file.

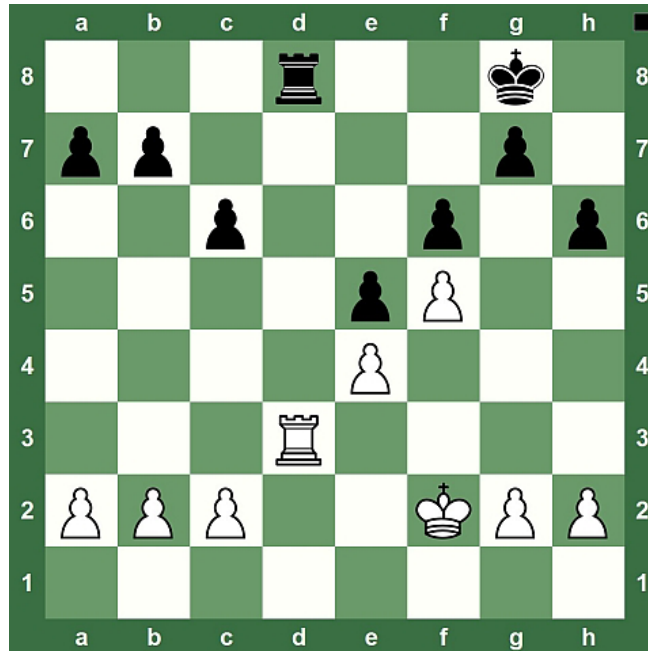
**2** **“Size”** lets you set the size of the chessboard image in pixels. There's only one value provided (since a chessboard is a square, it will be the same size on all four sides). For example, setting a value of “640” will produce a chessboard image which is 640 pixels by 640 pixels.

**3** The **“Type”** pulldown menu (displayed in the image above) lets you choose from among three available file formats” .png, .bmp, and .jpg.



- There are some text options available as well, which you can see in the image immediately above. If you select “Last move”, the last move played will be displayed as part of the image (for example, if the board displays the position after White's 25th move, the text will show that move: “25.Kxf2”). If you've annotated a game in Chess King and want the annotation associated with the move to be part of the image, you can select the “Text from game” check box to have that annotation included as part of the image. Finally, you can set the “Font size” using the box provided.

After you've set your desired parameters, click the “OK” button to generate the image, which you'll find in the folder you've specified:



- The above diagram was generated by Chess King using the same procedure we've just described.
- As you can see, there's a plethora of ways you can share games using Chess King! You can e-mail games and positions, create game files in various formats, generate chessboard diagrams, and even share games on a web page or blog online. It's never been easier to publish chess games, and Chess King provides you with the tools you need to share games in the manner you choose.

# CHAPTER 17

## Upgrading to a new Chess King version

- Conclusion and Support

# UPGRADING TO A NEW CHESS KING VERSION

Chess King is constantly evolving, and new versions of the program are periodically released. If you choose to purchase a new Chess King version, you'll need to know where to copy your existing data so that you can use it in the new program.

This chapter assumes that you know how to copy files using Windows. If you don't, you can find that information in your Windows Help files, as well as online, and in many Windows tutorial books.

When you install a new version of Chess King, the installation program creates a new folder for the software which is separate from the old Chess King program. So you'll need to move your player profiles, databases, and trees from one Chess King version to the other.

We're going to use a bit of shorthand in which “[Drive:]” indicates the letter of the drive to which you've installed Chess King, and “[Chess King X]” refers to the Chess King folder. (Typically the folder is named “Chess King” followed by the version number or name; for example, “Chess King 2”, “Chess King 4”, “Chess King Gold”, etc.)

Player profiles for Chess King are found in the folder [Drive:]\[Chess King X]\Data\Config\Profiles. When you open that folder, you'll find two files for each player who has set up a profile in Chess King, which end in the extensions .bak and .xml (for example, Chuck's files would appear as “Chuck.bak” and “Chuck.xml”). You'll need to copy both files to the \Data\Config\Profiles folder of your new Chess King program. After you've copied both files for each player, you'll see them as available profiles the next time you launch your new version of Chess King.



*[Note that the structure/location of the files and folders within the main Chess King folder don't change from version to version, which makes it easy for you to know where to copy a file so that it will appear in your new Chess King version. Also please note that you don't want to have either the old or new version of Chess King running when you copy the files, as you may get an error message from Windows when you try to copy them.]*



Databases in PGN format can be found in the folder [Drive:]\[Chess King X]\Data\ABases\PGN, while databases in ChessBase format are located in [Drive:]\[Chess King X]\Data\ABases\CBH. You'll want to copy all of the files in these folders to the corresponding folders in your new Chess King folder (or, to save time, you can just copy the whole \PGN and \CBH folders from old program to the new one). Note that you won't need to copy the \CDP (Chess Assistant format) folder from the old program to the new one; your new Chess King folder already contains new, larger, updated versions of these databases.

The last thing you may wish to copy are the trees you've created based on the games of specific opponents. You should copy the [Drive:]\[Chess King X]\Data\ATrees\Opponents folder from the old Chess King version to the new one. After you've copied the database and tree files, you'll see them available the next time you launch your new Chess King program.



# CONCLUSION AND SUPPORT

We hope you liked this book by Steve Lopez and found it both entertaining and informative.

If you find any errors or omissions in this book, don't hesitate to let us know at [support@chessking.com](mailto:support@chessking.com) and we will review it in detail. It will allow us to improve the book for future editions. We are grateful also for any bug reports or suggestions for improvement of the program, we will carefully look over every single one.

We also can provide fresh download links for current users with valid serial numbers, and give information about possible upgrades and upgrade discounts for current users.

Most recent news can be found on [www.chessking.com](http://www.chessking.com) and [blog.chessking.com](http://blog.chessking.com).

We hope you improve at chess thanks to Chess King!

**Diego F. Garcés, CEO, Chess King, [diego@chessking.com](mailto:diego@chessking.com), Social: @chessking**  
**Alexandra Kosteniuk, 12th Women's World Chess Champion, [chessqueen.com](http://chessqueen.com)**  
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