

Chessbook

Chessence (v1.0): Manual

A fully comprehensive guide to the universe and chess.

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Table of Contents

Glossary	2
1. Computer Chess	4
1.1 Usage Scenario	4
1.2 Goals	4
1.3 Features	4
2. Installation	5
2.1 System Requirements	5
2.2 Setup and configuration	5
2.3 Uninstalling	5
3. Chess Program Functions and Features	6
3.1 Player vs Player	6
3.2 AI vs Player	6
3.3 AI vs AI	6
3.4 Move Log	6
3.5 Help Menu	6
4. Back Matter	7
Copyright:	7
Error Messages	7
Index	8

Glossary

Attack: When you move a piece into position to capture your opponent's piece on the next turn.

Bishop: The bishop can move any number of spaces diagonally advancing or retreating on the board as long as the path is not blocked.

Castling: You move the king two spaces towards the rook and move the rook to the other side of the king. (Neither piece can be moved prior to this)

Capture: To take your opponent's piece

Check: A move in which you attack your opponent's king

Checkmate: A move that attacks the opponent's king that they cannot escape from.

En Passante: A move available to a previously unmoved Pawn that moves it forward two spaces forward, so long it is not blocked.

File: The rows on the chessboard that run up and down that are lettered a-h (lowercase)

Illegal Move: A move that attempts to move a piece in an illegal manner or one that results in a piece arriving in an illegal position.

King: the king may move one space in any direction on the board except when castling. The king may never move itself into check.

Knight: The knight can move in an L shape in any direction. This consists of 2 spaces in the horizontal or vertical direction the turns left or right and moves one additional space. This piece is special because it can hop over other pieces on the board.

Pawn: The pawn can only move one space forward on the board unless capturing or performing an *en passante*. If capturing a piece, the pawn can move diagonally forward one space. If the pawn is able advance all the way to the other side of the board, then it is immediately promoted.

Promotion: When a pawn reaches the opposing home row, it is removed and replaced by a Rook, Bishop, Knight, or Queen.

Queen: The queen may move any number of spaces in any continuous direction (Cannot move in one direction and then change once moved)

Rank: The columns on the chessboard that run left and right and are numbered 1-8

Resign: When a player chooses to turn down their king on the board. The player must state "I Resign" and shake hands.

Rook: The rook may move any number of spaces either horizontally or vertically as long as it is not blocked by another piece.

Stalemate: If the player is not in check but they can no longer make any moves the game is a stalemate

1. Computer Chess

1.1 Usage Scenario

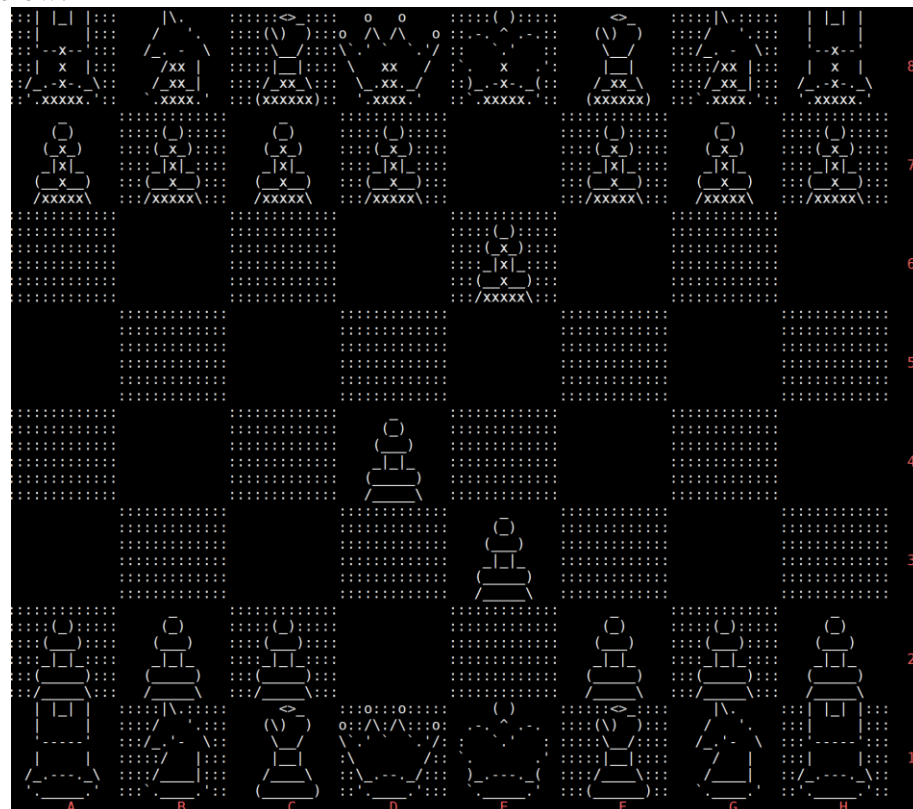
This chess program can be used to be included in a game application, either for just chess or multiple games. It can be used in an arcade console. Chess not only can be used for entertainment purposes, but it can also be used educationally. The program can be used in many situations along with teaching strategy and critical thinking.

1.2 Goals

Chess is a one vs. one, either player vs player, player vs computer, or computer vs computer strategy game. The game takes place on a 8x8 board with alternating colored squares. Typically there are two teams, white vs black. Each team has 16 pieces to move: 8 pawns, 2 rooks, 2 knights, 2 bishops, a queen and a king. Each figure has their own respective move. White team opens with a move then black moves then so on. The goal of chess is to capture the opposing team's king.

1.3 Features

The features of this chess software include game play of user vs. computer and also computer vs computer. Gameplay includes a help function that reminds the user how each piece is allowed to move. A history of moves is also recorded during gameplay that allows the user to review the match. This can be viewed by opening the log.txt file, which will display an easy readout of all of the moves that have been made. A picture of the board can be seen below.



2. Installation

2.1 System Requirements

Chessence has been only tested on Linux, but will run on other operating systems. The computer requires a shell and the ability to run executables. It requires a console so that the Chessence can communicate with the user. The computer requires a monitor.

2.2 Setup and configuration

1. Extra tar.gz.
2. Change into newly extracted directory.
3. Run build command: “make Chessence”.
4. Execute program: “./bin/Chessence”.

2.3 Uninstalling

Go into the unzipped file directory of Chessence and type make clean in order to clear out the executable program.

3. Chess Program Functions and Features

In this section the functions and features written for the chess program will be elaborated upon. This should be a comprehensive list.

3.1 Player vs Player

This allows two users to play chess against each other. The players will be prompted to choose a color at the beginning of the game and then the game will begin as normal.

3.2 AI vs Player

This allows the Player to test their skills against an AI that plays at a mid level.

3.3 AI vs AI

This runs a game of the AI vs the AI which is non random and will play the same game unless the search depth is increased or decreased.

3.4 Move Log

This keeps track of the player's and AI's moves in a simple file named log.txt. It keeps track of the color who moved, the piece that moved and whether it captured a piece.

3.5 Help Menu

The help menu displays a wall of text giving the user a general idea on how our program works. It specifies the way the input should be entered, gives insight on chess rules and their pieces.

4. Back Matter

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Error Messages

The program will display an error message if an incorrect input is received and the user will be prompted to try again. This applies to all menu options as well.

Index

Attack, 2
Back Matter, 7
Bishop, 2
Capture, 2
Castling
 Castle, 2
Check, 2
Checkmate, 2
Computer AI, 6
Computer Chess, 4
En Passante, 2
Error Messages, 1, 7
File, 2
Forfeit, 6
Functions and Features, 6
Help, 6
Illegal Move, 2
Installation, 5
King, 2
Knight, 2
 move list, 6
Pawn, 2
Promotion, 2
Queen, 2
Rank, 2
Resign, 3
Rook, 3
Setup, 5
Stalemate, 3
System Requirements, 5
Uninstalling, 5
Usage Scenario, 4