# **Chess Olympian**

Created by

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# 1. Computer chess

# 1.1. Usage Scenario

Here is what the game might look like after the first move

+	<b></b>	<b></b>	+	<b>+</b> -	+	+	++
8   bR							bR   ++
7   bP	bP	bP	bP	bP	bP	bP	
6   +					l		i i
	l				I	I	1 1
					l		i i
	l			wP	l	l	1 1
2   wP	wP	wP	wP		wP	wP	wP
1   wR	wN	wB	wQ	wK	wB	wN	wR
a	b		d			g	h '

#### 1.2. Goals

The goal of any chess game is to force the other opponent's king into a position where any move would result in the opponent losing the king to one of your pieces. This is known as a checkmate.

#### 1.3 Features

- This game features the ability to perform moves of all chess pieces according to the rules of chess.
- Choose to play the game between two human players or human vs.
  Computer.

- Withdraw previous moves
- 3 Different computer difficulty levels
- Hints on good possible moves to assist human plays
- A graphical X window user interface
- Game timer
- Interactive custom board configurations

### 2 Installation

- 2.1 System Requirements
  - PC x86 with Linux OS
  - Monitor, Keyboard, Mouse
  - Data input methods: Floppy 3.5 / CD-ROM/ USB / Internet
- 2.2 Setup and Configuration
  - Unpack using command line:

```
o tar -xvzf Chess_V1.0.tar.gz /directory/
```

- Launch program with:
  - o chess
    - For certain linux distributions, use
      - ./chess
- 2.3 Uninstalling
  - Go to installed directory, use command:
    - o cd ..
    - o rmdir --ignore-fail-on-non-empty <directory>

# **3 Chess Program Functions and Features**

#### • 3.1 Main Menu

• The user will be able to select between player vs player or player vs computer options. NOTE: (GUI may be incorporated at later stages. Therefore means of user input may change completely.)

## • 3.2 Selecting a Color

 Before the user may begin playing chess against another human player or the computer, the user must select whether to play as white or black. Simply select the correct option and press enter.

## • 3.3 Gameplay

• The user will see a textual (GUI at later date) game board representation as shown previously. The user will then be able to input the location of the piece that they want to move, and then the location that they want to move it to, then press enter. (EX: f2f4) The next player may make his turn by doing the same. The board will be updated to represent the move made.

## • 3.4 Illegal Moves

o In the event that a player attempts to make an illegal move, the user will be notified that the move they tried to make was not legal, and will be asked to make a different move. If the move requested is legal, then the board will be updated to represent the move made. Please refer to another for the rules of Chess.

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## • 3.5 Computer Player

 The computer player has been programmed with "Artificial Intelligence" in order to give the player a challenging game when no other human player is available.

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# **Error Messages**

- Invalid move: a piece has been moved to a position that it cannot be moved to
- Invalid selection: a piece that has been selected cannot be moved
- Cannot move piece, you are in check: piece that has been selected cannot be moved due to being in check
- Check: the king has been threatened, the next move must be a move to keep the king away from threats
- Checkmate: the king has no where left to moved, the game is over
- Segmentation fault: somewhere in the program an array has accessed a restricted area. Program will terminate.
- End of program: the user has clicked the end game button.
- Stalemate: the king is neither in check nor are there any more places for the player to move a piece on their turn. The game is a draw
- Player resign: one player has resigned from the game. Victory is awarded to the other player.

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