The Fruit of Chess (Version 1.0 Alpha): User Manual
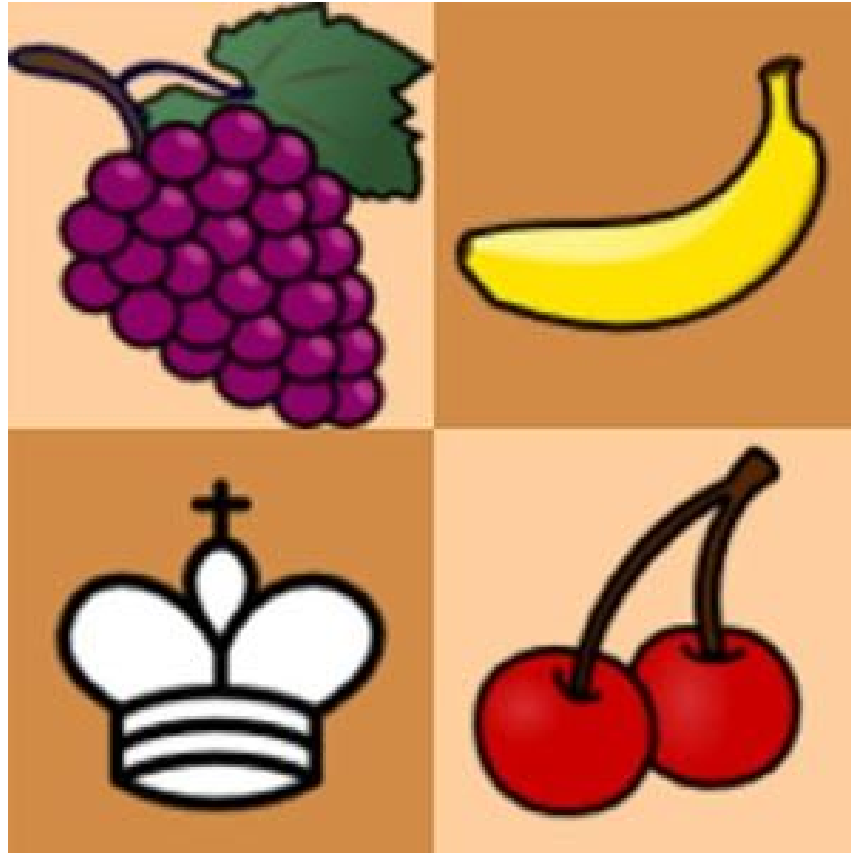
Authors/Producers: Tristan Guinto
                   Andrew Huynh
                   Joel Darryl Ingal
                   Justin Le
                   Eliza Ordonez
                   Kenny Tat

The Fruit of Chess (Version 1.0 Alpha): User Manual

Tristan Guinto

Andrew Huynh

Joel Darryl Ingal

Justin Le

Eliza Ordonez

Kenny Tat

Affiliation: University of California, Irvine

Irvine, CA 92617, USA

Table of Contents

I.   Glossary

Bishop   a chess piece that can move diagonally across the board.

Castling   a special move in the game of chess involving the king and either of the original rooks of the same color. It is the only move in chess (except promotion) in which a player moves two pieces at the same time. Castling consists of moving the king two squares towards a rook on the player's first rank (row), then moving the rook onto the square over which the king crossed. Castling can only be done if the king has never moved, the rook involved has never moved, the squares between the king and the rook involved are not occupied, the king is not in check, and the king does not cross over or end on a square in which it would be in check

Check   A check is made when a player's king is under threat of capture on their opponent's next turn.

Checkmate   a game position in chess in which a player's king is in check (see Check) and there is no way to remove the threat. Checkmating the opponent wins the game.

Chess Pieces   see Bishop, King, Knight, Pawn, Queen, and Rook.

King	Queen	Bishop	Knight	Rook	Pawn
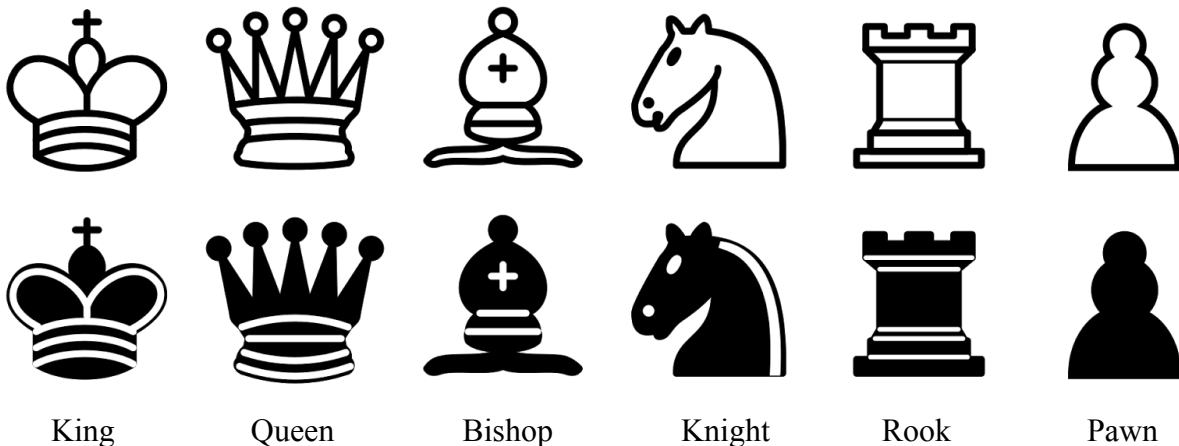
En Passant   a special pawn capture which can occur immediately after a player moves a pawn two squares forward from its starting position, and an enemy pawn

could have captured it had the same pawn moved only one square forward. The opponent captures the just-moved pawn as if taking it "as it passes" through the first square. The resulting position is the same as if the pawn had moved only one square forward and the enemy pawn had captured normally. The en passant capture must be done on the very next turn, or the right to do so is lost. Such a move is the only occasion in chess in which a piece captures but does not move to the square of the captured piece. If an en passant capture is the only legal move available, it must be made.

King a chess piece that can move in any direction, but only one step at a time. Also, the king must never move into check. There is also a special "castling" move for the king.

Knight a chess piece that can jump to eight different squares which are two steps forward plus one step sideways from its current position.

Pawn a chess piece that can move only forward towards the end of the board, but captures sideways. From its initial position, a pawn may make two steps, otherwise only a single step at a time. If the pawn reaches the end of the board, it is automatically promoted to another piece (usually a queen). There is also a special "en passant" move for the pawn.

Queen a chess piece that can move horizontally, vertically, and diagonally across the board.

Rook a chess piece that can move horizontally and vertically across the board.

Special Moves see Castling and En Passant

II. <u>Computer Chess</u>

A. Usage Scenario

This program is designed for the user to engage in the adventure that is the game of Chess between him or herself versus another player or the built-in computer artificial intelligence.
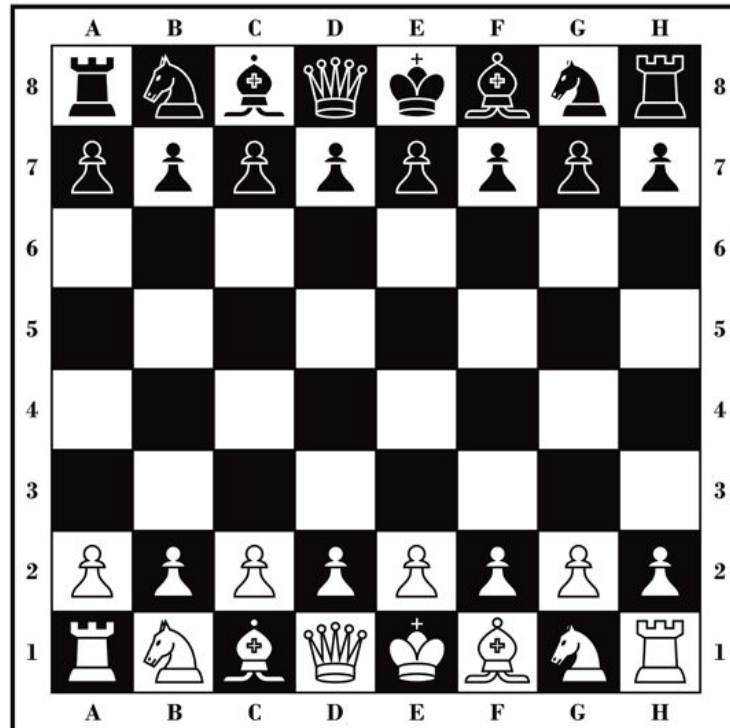
When you first start the program, the user interface will have 3 options to choose from:

Human Player vs. Human Player
Human Player vs. Computer
Computer vs. Computer

With these 3 game types, the user can play a legitimate game of chess solo or with another.

B. Goals

The goals of this program is to simulate a game of chess virtually for the user along with all the rules in order to create an experience to that of real chess. The A.I. has multiple difficulties in order to accommodate beginners and experts alike. This program also understands the advanced techniques such as castling and en passant. By incorporating all the standard rules of chess with either a computer or human opponent, the user can play proper chess through their own device.

C. Features

Along with being able to play the game of chess, this program also features:

- A visual representation of the current board
- Turn by turn timer for each player

- 3 difficulties for the A.I. - Easy, Medium, and Hard
- Log of moves made during the game
- An undo command to take back the last move

III. Installation

A. System Requirements

- Linux OS or emulator
- X86 - Compatible processor
- Minimum 4 MB of free disk space*
- Minimum 256 MB of RAM*
- Monitor
- Keyboard

B. Setup and Configuration

1. Open terminal window
2. Create a new directory to hold the game files
3. Copy the game files to that directory with the command
   cp ~ *
4. Extract the files using the command
   tar -xzvf Chess_Alpha.tar.gz *
5. Build the executable program with the command
   make all
6. Start the game with the command
   ./Chess_V1.0

C. Uninstalling

1. Open terminal window
2. Navigate to the directory that holds the extracted files
3. Delete all game files with the command
   rm -r Chess_V1.0 *

IV. Chess Program Functions and Features

A. Board details

The board will be a standard 8x8 grid with one axis labeled A - H and the other labeled 1 - 8. Each piece will be represented by a picture* to show their current position. The black and white pieces will be colored appropriately.
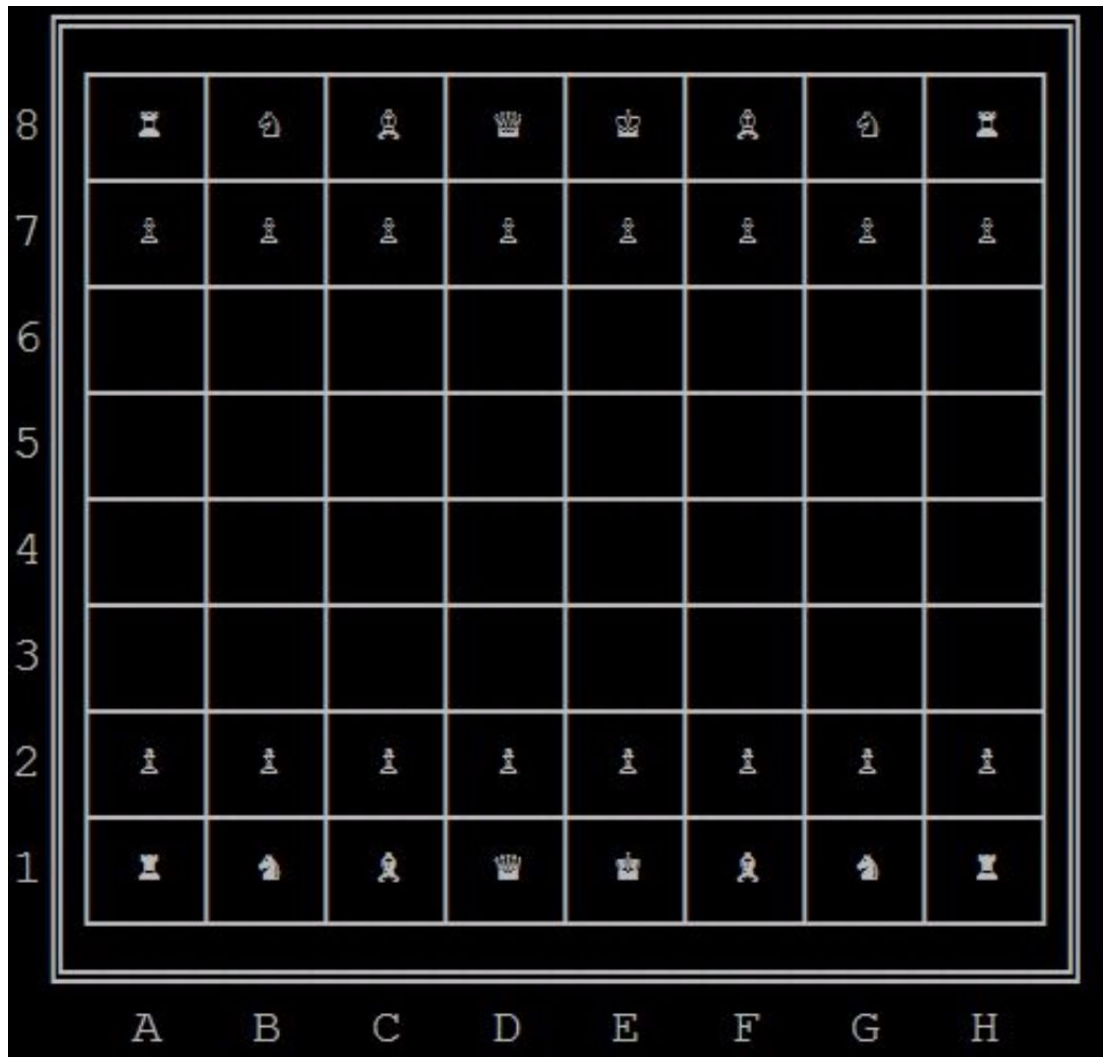
B. Movement of Pieces

The player(s) will be able to move the chess pieces using Algebraic Notation (AN) (e.g a4, g5, etc).

C. Undo Command

The program features an "Undo" command that allows the user to revert the board back to it's original state before a wrong move was made.

D. Log of Moves

The program features a log that will contain a record of a player(s) moves throughout the game.

E. Turn Timer

The program will include an in-game timer for both players (whether it be computer or human). Whichever side expends the time the quickest will lose the match of chess.

F. Checkmate notification

Once a checkmate has been achieved the match will end, and the winner will be shown.

V. Copyright

This program was designed and created by Team FBGM and is the property of its team members. All rights are reserved. Copyright © 2017 by Team FBGM.

VI. Error Messages

(a) If an invalid or illegal move has been requested, "Invalid Move!" will be shown and the user may continue to request another move until a valid one has been chosen.

VII.   Index