

AlphaGun Chess

v2.0

Designed by AlphaGun

Chaoran Nong

Yijian Wang

Yanjie Xu

Yifan Xu

Xiaoyan Yang

Yan Zhang

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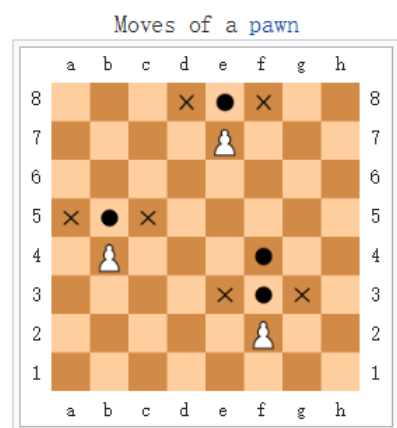
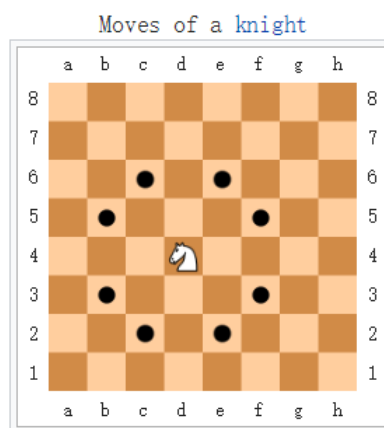
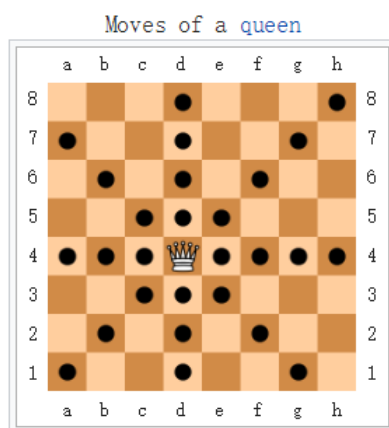
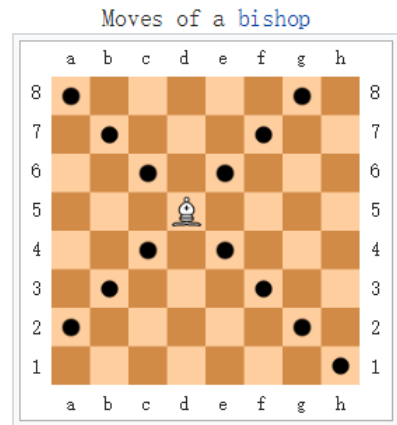
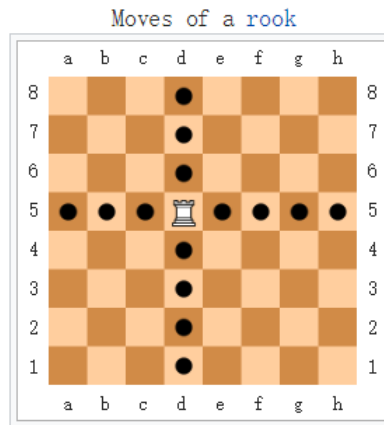
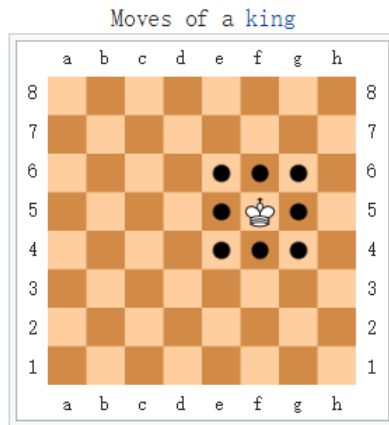
Glossary (of chess terms)

Chess Pieces:

Each chess piece has its own style of moving. In the diagrams below, the dots mark the squares where the piece can move if no other pieces (including one's own) are on the squares between the piece's initial position and its destination.

Pieces' rules:

- The **king** moves one square in any direction. The king has also a special move which is called castling and involves also moving a rook.
- The **rook** can move any number of squares along any rank or file, but may not leap over other pieces. Along with the king, the rook is involved during the king's castling move.
- The **bishop** can move any number of squares diagonally, but may not leap over other pieces.
- The **queen** combines the power of the rook and bishop and can move any number of squares along rank, file, or diagonal, but it may not leap over other pieces.
- The **knight** moves to any of the closest squares that are not on the same rank, file, or diagonal, thus the move forms an "L"-shape: two squares vertically and one square horizontally, or two squares horizontally and one square vertically. The knight is the only piece that can leap over other pieces.
- The **pawn** may move forward to the unoccupied square immediately in front of it on the same file, or on its first move it may advance two squares along the same file provided both squares are unoccupied (black "●"s in the diagram); or the pawn may capture an opponent's piece on a square diagonally in front of it on an adjacent file, by moving to that square (black "x"s). The pawn has two special moves: the en passant capture and pawn promotion.



Key Terms:

Capture

One chess piece move to another square with an opponent chess piece in it in a legal way, and the opponent piece should be moved out.

Check

When a king is under immediate attack by one or two of the opponent's pieces, it is said to be in check.

Checkmate

When the king cannot change the statement of check, it is said to be in checkmate and the opponent win the game.

Special Moves:

Promotion

Should a pawn manage to make it all the way to the other end of the board, that pawn must promote to any piece its player chooses other than a king.

Castling

Castling is a move that is normally used to improve the king's safety. When castling, you simultaneously move your king, and one of your rooks. The king moves two squares towards a rook, and that rook moves to the square at the other side of the king.

You can only castle if all of the following conditions are present:

Neither the king nor the rook being used has been moved yet during the game. If either piece has been moved, then castling is not allowed, even if the piece is moved back to its original square.

For More Information about Glossary of Chess:

https://en.wikipedia.org/wiki/Glossary_of_chess

1. Computer Chess

1.1 Usage scenario

Our games can be accessed anytime and anywhere. All the user need is just a Linux terminal. The program itself can be downloaded easily from our website and installed on any support devices.

1.2 Goals

Our goal is to make this program to function as not only a entertainment game software for ordinary people but also a practise platform for professionals. There will be three modes, easy, normal and hard, which are built to fit users with different chess knowledge level.

The user will be asked to choose from AI version or 2 human player version at the very beginning when the program is launched. If the AI version is selected, the user will then be asked to choose the mode of the AI. Player will also have the option to chose the color of the chess. White side always moves first.

Either computer player or human user needs to checkmate to win by moving pieces. However, any invalid movement will cause the failure immediately. Rules of the game follows the international popular version, which can be found here:

<https://eee.uci.edu/17w/18020/tas/letsplay.pdf>

1.3 Features

AI mode with three difficulty levels

Change skins during the game

Undo moves

Record of movements

Supportive hints

Timer for both players

Save and load games

...

2 Installation

2.1 System requirements

Operating System:

Linux OS, OS X, Windows 7 or later

Processor:

Intel Pentium (@ 1.5 GHz)

AMD ATHLON (@ 1.6GHz)

Or later versions

Graphic Requirements:

Nvidia GT 9800

AMD Radeon HD 2000

Intel HD graphics 500

Or later products

Disk Space:

At least 100M HDD space

RAM:

At least 10M

2.2 Setup and configuration

Run "InsAGChess.exe"

Choose the location for installation or use the default address

C:\Users\Public\Documents\AG Chess

Clicking "next step" and finish the installation

2.3 Uninstalling

Run program "Uninstall.exe"

Click "next step"

Uninstallation finished

3 Chess Program Functions and Features

3.1 Start page interface

```
Welcome to the chess game terminal!!

Present By Team Alpha Gun

      ii
     i i
    i A i
    i G i
     i i
      ii

1. Start as Player vs. Computer
2. Start as Player vs. Player
3. load previous saved game
4. Exit

Please input your mode choice: █
```

Player VS Computer AI

When the user type 1 to make this option, the program will then enter the AI mode.

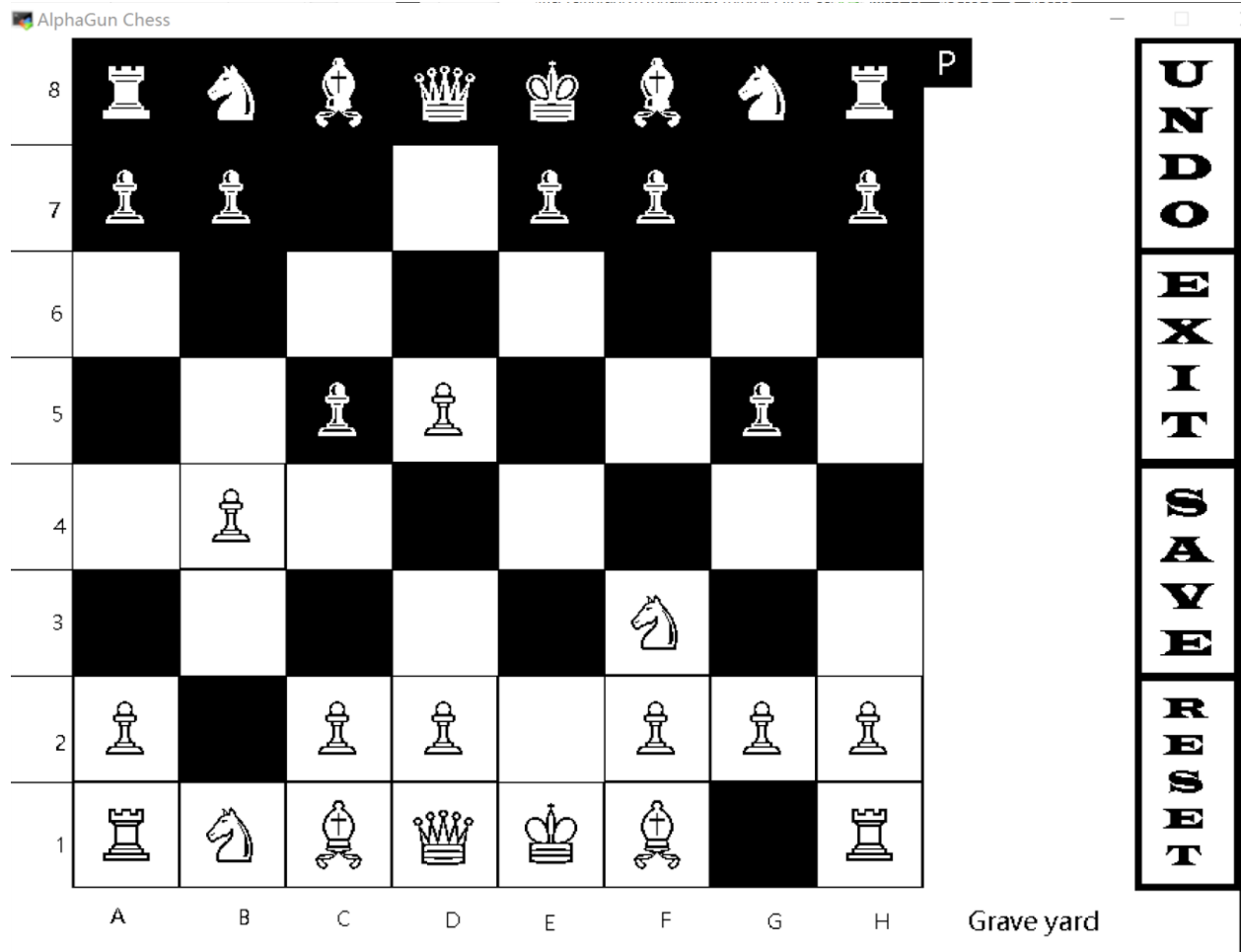
Player I VS Player II

When the user type 2 to choose this option, the program will open a window with board and pieces initialized. Then, the white side will move first.

Load Mode(beta)

When the user type 3 to choose this option, the program will find the Save.txt file and load the previous game automatically.

3.2 User setting interface



3.3 Interactive user interface

Initialization(Reset)

When the user click **RESET** button, all pieces will be set up to their initial positions.

Save

When the user click **Save**, save all of the information of the board and chess pieces.

Load

When the user click **Load**, read the information of the board and chess pieces from the file which has been saved, and then resume the game.

Undo

When the user click **Undo**, reset the last move of this user.

Graveyard

An area on the user interface that shows the icons of the captured pieces of both sides.

4. Appendix

4.1 Copyright

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4.2 Error message

[Invalid Movement] : When player make invalid movement such as a pawn moves backward, the message will display on the right side of the window. When the message show up, it will be considered as warning but if the player continue does the action 3 times later, the game will automatically end. Program exit.

[Save the King!!] : When the player's king has been check, the player should make sure that the king needs to be secured, that is when this message show up on the right side of the window, player has to either move other class to secure the king or move the king itself to a safe place. When player does not try to secure the king, the message will show up, and all the other movement will be considered as invalid.

[Move your own piece plz] : When the player trying to move the class from other side, this message will show up at the right of the window. When the message show up that means the player should never ever move other side's class, therefore the movement will be considered as invalid and the player should only move his class in his turn.