

Demo

Our program supports two display version. To display both text board and the graphical board, enter:

```
./chess -seed 123
```

Please note that when graphics display is enabled, it takes time to update. When you input new commands, please wait until you see the graphics display and text display is updated and outputted. To display only the text board, enter:

```
./chess -text -seed 123
```

Please note that 123 is just an example of all the number you can enter. You could enter other integers, too. If you enter the same integer, the computer will generate the same random moves every time.

Once the program starts, you could enter the following three commands:

```
game white-player black-player
```

This command takes you to the game mode. White-player and black-player could be either of human or computer[1-3], but they cannot both be computer[1-3]. Our computer AI supports three levels. Level 1 computer only makes random moves. Level 2 supports capturing pieces and making check moves. Level 3 supports avoiding being captured, capturing pieces and making check moves.

```
setup
```

This command takes you to the setup mode.

```
quit
```

This command ends the game. The program ends, too.

The Game Mode:

If you don't set up the chessboard in setup mode first, the chessboard will be initialized as a normal chessboard opening. After you enter the game mode, the white player goes first. You could make move using the commands like the following:

move a2 a4

This commands will move the piece on a2 block to a4 block. You could do pawn promotion by (this promotes white pawn to white queen):

move a7 a8 Q

The following move commands are invalid:

1. If there is nothing on the a2 block;
2. If either of the blocks you enter is not on the chessboard;
3. If the move you enter is an invalid move for the piece;
4. If the name of the piece you promote to is invalid (only K, Q, R, B, k, q, r, b are valid).

If you want to resign, just type the following when it's your turn:

resign

When either side wins, or resigns, or a stalemate is reached, the game ends and the program quits the game mode. The winning side will win 1 point. If a statement is reached, both sides will gain 0.5 point.

If you enter something other than the commands described above, an error message will displayed.

The Setup Mode:

The first time you enter the setup mode, an empty board is displayed. You could use the setup mode to set up the initial board for a game. The default piece colour is white. You could add whatever piece you want on the board. Notice that the constraints of the pieces you could add is specified in the outline given by the instructors. You could add a white rook to c5 block by the command:

+R c5

You could remove the piece from the board by the command:

`- b1`

You could change the colour of the piece by the command:

`= white`

or

`= black`

Enter anything else other than these will be invalid and an error message will display.

To check for checks and checkmate, you could first setup an initial board in the setup mode and play it in the game mode. To test our checkmate function, set up the initial board as showed below. This checkmate pattern is called Anastasia's mate. Enter the setup mode and type:

`setup`

`+ N e7`

`+ R e3`

`+ K g1`

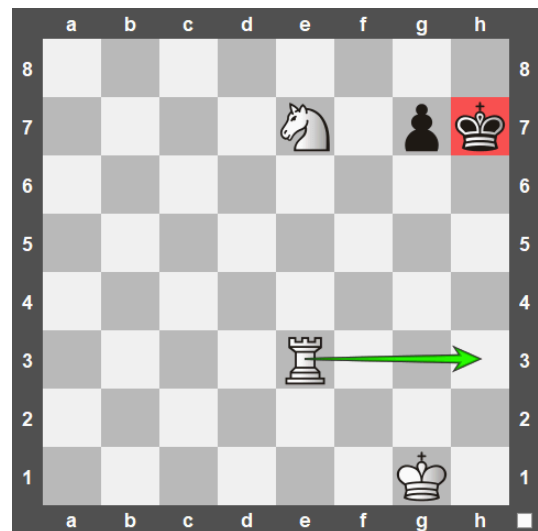
`+ p g7`

`+ k h7`

`done`

`game human human`

`Move e3 h3`



Because the `checkmate()` function depends on the `check()` function, a correct `checkmate()` function indicates a correct `check()` function.

To test for pawn promotion, you could follow the same way to setup the board first and then play the promotion.