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CS 246 - Final Project Demo

Building
To compile our program, simply run

```
make
```

This will generate an executable called `chess`. Running this executable will lead you to the main menu, where you may enter one of several commands.
Note that this executable has to be run in the same directory as the `assets/` directory.

Basic Use
In order to start a new game, run

```
game [white-player] [black-player]
```

In place of [white-player] and [black-player], you can choose to either be a human, or one of three AI levels:

      human – Human player
      computer1 – AI Level 1 (random legal moves)
      computer2 – AI Level 2 (prefers capturing moves and checks over other moves)
      computer3 – AI Level 3 (prefers avoiding capture, capturing moves, and checks)

When you're in game, you may use the following commands:
As Human:

      `move {from} {to} [optional: promotion]`
      {from} and {to} should be spots on the board that have your piece.
      For example, a good starting move as WHITE would be
          `move e2 e4`
      If you wish to promote your pawn by reaching the opposite side of the board, you may enter
          `move e7 e8 n`
      to promote your piece to a Knight. If you do not specify a piece to promote to, the game will default to promoting your pawn to a Queen.

      `resign`
      This will forfeit the game to your opponent.

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As Computer:

> `move`
>
> This will trigger the AI to generate the next move.

> `resign`
>
> This will forfeit the game to your opponent.

If you wish to create a custom board setup, simply enter

> `setup`

You can then play the board that you set up by running the same game command as above.
If you wish to quit, simply run

> `quit`

Tests

We have several testable cases in the folder `tests` that can be run with the following commands:
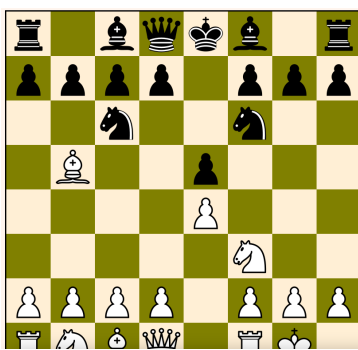
> `./chess < tests/`testname`.in`

where `testname` is the name of a test in `tests`. However, due to the nature of the .in file, the program will exit when there are no more lines so the graphical output will not display. If you want to see the graphical output, you must run
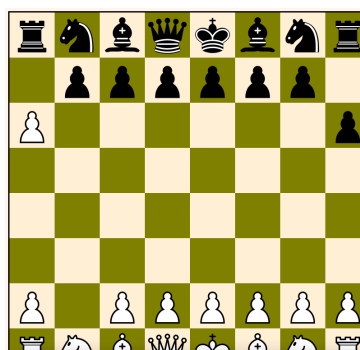
> `./chess`

and paste the contents of `testname` into the running program manually.
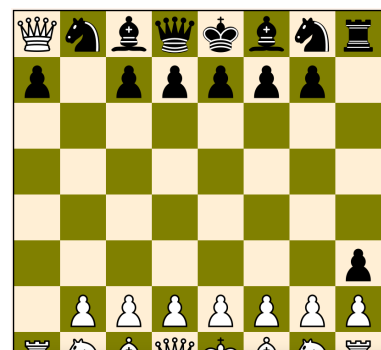Some sample tests are shown below:

castle_kingside_white

en_passant

promotion_default

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Starting Games

Note that you can generate random computer matches. For example:

```
./chess
game computer1 computer3
```

The above command starts a game between a level 1 computer and a level 3 computer. Continuously typing `move` from this point allows you to progress through the game, step by step. Games can also be started between `human` and computers:

```
./chess
game human computer2
```

or

```
./chess
game computer3 human
```

Typically, running games against computers leads to stalemate. However, continuously attempting these computer games will eventually show some valid check-mate cases.

Setup Mode

Setup mode can be accessed prior to starting a game if one desires a custom layout. Upon exiting setup mode using `done`, continue with the `game` command as usual. If the conditions specified in the document for valid setup modes are not satisfied, then the program will prompt the user to reenter a valid setup.