#### chess.md

### **Mailbox Chess Engine**

Requirements: Windows or Linux Environment

#### **Quick Install:**

- 1. Download the latest chess.zip release for Windows or Linux
- 2. Extract the files
- 3. Run chess.exe
  - o If permissions denied, run chmod 700 <path to chess.exe> and try running again

#### **Build Yourself:**

- 1. Clone the repo or download the source code in a Linux environment
- 2. Install the requirements: sudo apt-get install libsfml-dev and sudo apt-get install build-essential
- 3. Run the makefile in command shell or IDE terminal
  - Note: Neccesary changes to install location of SFML might be required in the makefile

### **Features**

- Al opponent
  - Different opening playbooks
  - Built on minimax algorithm, optimized with alpha-beta pruning

• Display legal moves



• Alert when king is in check

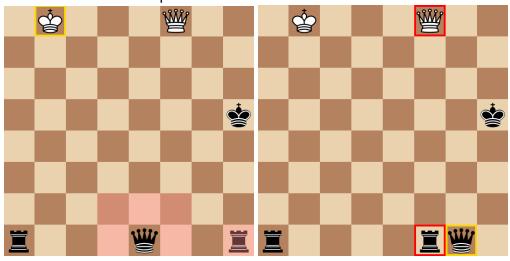


# **Special Moves**

### Castling

- Moving the king two squares toward a rook and then moving the rook to the square that the king passed over
- $\circ\hspace{0.1cm}$  Cannot castle into or through check or checkmate

• Before and after example:



### • En Passant

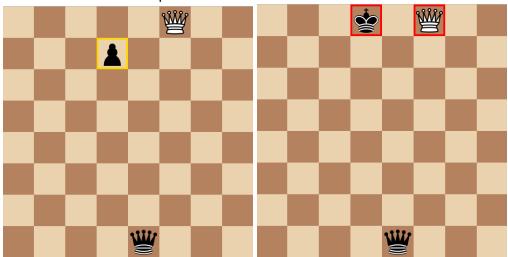
- The capture by a pawn of an enemy pawn on the same row and adjacent column that has just made a two-square advance
- Before and after example:



### • Pawn Promotion

• The replacement of a pawn with a new piece when the pawn is moved to its farthest possible square

o Before and after example:



## Video

