Arnav Mittal

Design Documents

TP0

11/14/22

**Project Description:**

Name – ChessHuh

This is the game chess that allows for pass and play chess with timed modes as well.

**Similar Projects:**

There have been several projects made where the game of chess can be played and some that even have AI bots to play against. A lot of them use pygame and some use pillow module, but I will just be using CMU graphics and classes. Many of them have a similar look to chess.com, but not many have timers. I will be creating the game of chess that works in the same way that most chess projects work, but using CMU graphics instead of external modules. The main difference in my project will be the timed modes that are possible. I may also include an AI bot to play against if time permits after MVP.

**Structural Plan:**

There will be many straightforward functions to do things like checking legal moves, drawing the board and all the main aspects of chess. There will be multiple files to keep in one project that I will have to import into the main file that also has the main method. Some files will contain important classes. The main difference between the files will be the type of content they have like what the functions in the file pertain to in the chess game. I will also need a class for the pieces and classes for each type of piece that is a sub class of the main pieces class.

**Algorithmic Plan:**

The trickiest part of the project (MVP) is probably actually making the move that the player wants to make and accounting for the consequences of that move. For example, if a bishop takes a pawn that is guarded by a Queen, I have to make sure the Queen is able to take the bishop now if the user decided to. I also have to account for checks and know when the game is over (checkmate, stalemate, draws, etc.). The way I will approach this is to have functions in the pieces class that check whether a certain piece is dead or not. I will also have a function that shows all possible moves that constantly changes after each move.

**Timeline Plan:**

I intend to draw the main features (board, pieces, etc.) by 11/17.  
I intend to be able to move every piece (checking if a move is legal) by 11/24.

I intend to be able to check whether a piece is taken, checks, checkmate, stalemate, etc. by 11/28

I intend to add timers, promotion, enpassant, etc. (fine tune and timers) by 11/30.

I intend to potentially add AI, refine timers and add timer modes by 12/5.

**Version Control Plan**

I plan to use github for version control. Here is my repository: