15-112 project proposal

\*Project description:

-Name: chess with AI

-In this project I will create a chess game that enables two players to play against each

Other and allows player to play against a bot using AI

\* Competitive analysis:

There are multiple chess projects that implement a chess game but without an AI, in my project, I will create a chess project that includes a proper chess engine and an AI, adding to this, the chess game will include auxiliary options like undoing a move.

\*Structural plan:

This project has three main features:

1. The chess engine
2. The chess GUI
3. The bot AI

The chess engine will be written as backend in a separate file and it will be used to create the GUI, the AI will be implemented in the GUI file.

\*Algorithmic Plan:

* The chess plate is going to be represented as a 2D list, pieces will be represented by two letters and will move on this 2D list
* A move action will be triggered by clicking on a square, the name and the location of the clicked piece will be stored into a list, the next click will represent the location that the player wants the piece to be in, which will also be stored into a list. These moves will be reflected on the 2D chess board list and hence shown on the GUI.
* The log of the moves will be used to implement features like undoing moves, maybe provide bad moves a player made or create a report on the game.
* The GUI will consist of images of chess pieces and a board created using pygames
* For the AI I will use the minimax and the alpha-beta algorithm, these will be implemented after the whole chess engine is done

\*Timeline plan:

* TP1: set the code basics and start the GUI and the Chess engine
* TP2: be done with the chess engine and the GUI, and started working on the AI
* TP3: be done with the project, add final features

\*Version control plan:

* The code is uploaded to github and updated after every session of work.

\*Module list:

* Pygames