Software Design Specification (SDS)

For starters, this following diagram shows the sequence that we have gone through so that we finally be able to design the system of the Tic Tac Toe game.

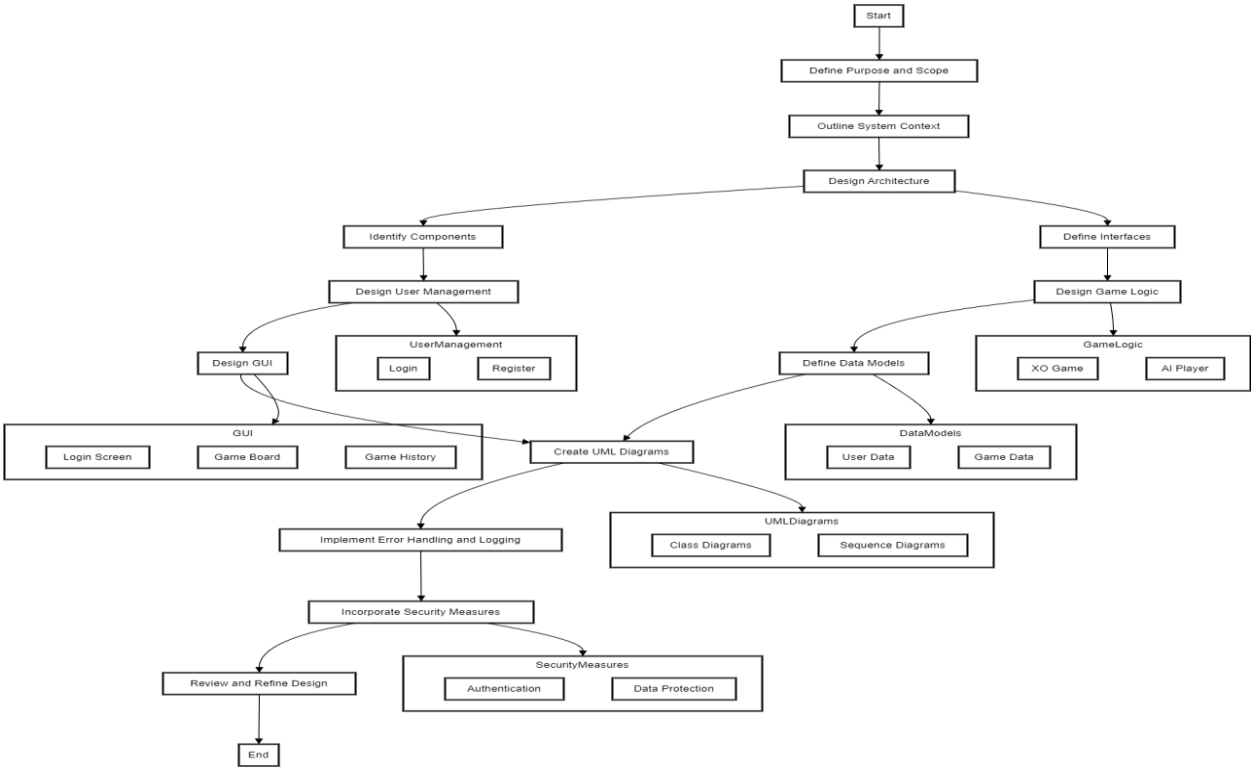

Figure [] UML of the roadmap of system design

The design of the system mainly consists of:

- Database.

Starting from the first screen that appears to the user, where he chooses whether to Log in or Register, creating for each user a file once they register.

That file remains as the source of the data for this user's username, password, games history and all the data that relates to him.

After the user enters the game, he will find the screen that has the button which tells them whether to play against an AI or a friend that uses the same computer, once the game ends , all the data about the moves, winner and loser, even the sequence of the plays will be automatically saved in the player's file to make it accessible for them all the time when they need to review the games again.

- ## Game play

For our project, tic tac toe, the Gameplay is almost known to everybody. A matrix of size 3x3 is displayed so that the player chooses which column and row to play his move in. Therefore, the other player can decide what which column and row to play his move in.

Gamestate function is for checking whether it is still going on or not. If not, it would display the state whether it is win, lose or draw.

Playermove function is for checking whether the spot is free to be played in or not

AiMove uses two functions, minimax to detect whether spot to play in and playerMove to play the move.

Winning mechanism is defined by achieving three consecutive Xs or Os whether it is diagonally, vertically or horizontally.

- ## GUI

The final stage of making the project come to life and appear to be friendly to the users and not as complicated as the console of the programming system

In this stage we decide how the screens would look, how the displays are going to be like and how everything would be smoothly connected so it becomes easy to deal with.

The game starts with a screen of log in or create an account.

After logging in, a new window that asks the player whether to play vs AI or another player.

If the latter is chosen, a new logging in windows appears so that the other player logs in to play the game and have their matches perceived.

After playing the game, the player can see their wins or losses in the profile or detailed in the game history to review all the moves recorded in that game

The following figure shows the UML of our game after finishing it:

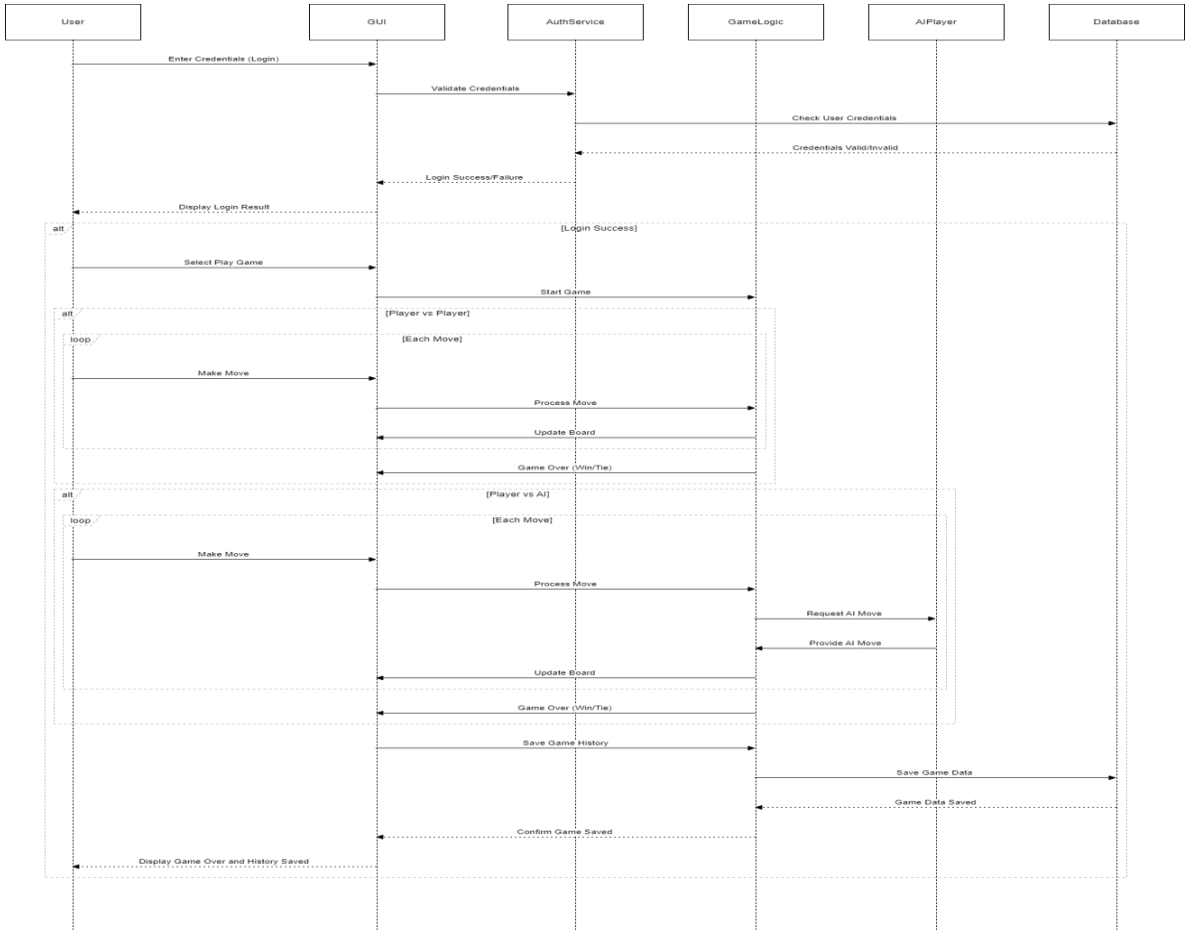

Figure [] activity diagram

And the following figure shows the main components of the system:

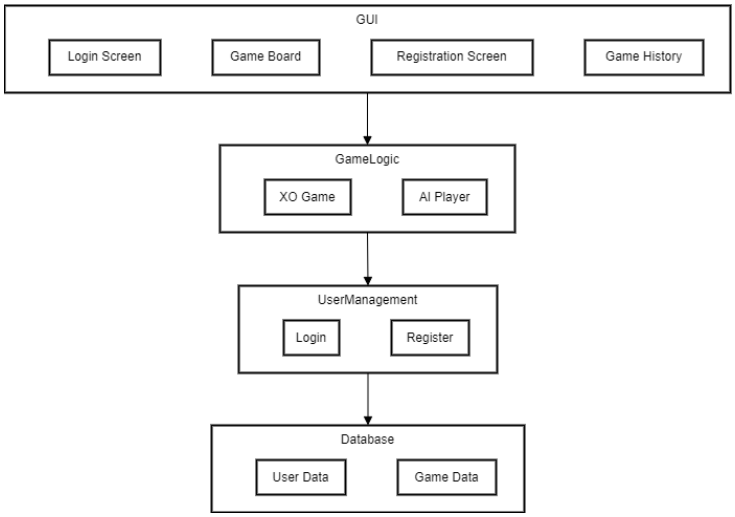

Figure [] components diagram