

**Tic Tac Toe with animations**  
**-Project 1-**

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## **Content:**

|                                 |          |
|---------------------------------|----------|
| <u>Introduction.</u>            | <u>3</u> |
| <u>Existing functionalities</u> | <u>3</u> |
| <u>Visual Examples.</u>         | <u>4</u> |
| <u>Used libraries</u>           | <u>6</u> |
| <u>Requirements</u>             | <u>6</u> |
| <u>Originality</u>              | <u>6</u> |
| <u>Disclaimer</u>               | <u>6</u> |
| <u>End word.</u>                | <u>7</u> |

## **Introduction:**

This is a plain opengl practice project. It suffices the requirements for the first project during the semester. It was fun to create and a good learning opportunity. The project consists of a tic tac toe with animations on marker placement and loading bar. Also it contains an AI and changeable themes. Keeping you here more than this would be wasteful for an introduction on a tic tac toe project, so head on and dive into the project description itself. I hope you enjoy it and find it helpful or pleasant.

## **Existing functionalities:**

First of all, it contains the game itself. This is a simple tic tac toe game with additional animations. First of all, the game rules: players take turns placing their marker on the 3x3 table, the first one to put 3 of his own markers in a row, column, or diagonal wins. A marker cannot be overplaced by the same or other player. Filling the table without winning results in a draw. Simple as that.

Second of all, it contains an AI. The player can choose between playing in 2 players sharing the same device or playing with the AI (replacing player 2 only). The AI has 2 simple tactics to be beaten, so the player would have a chance.

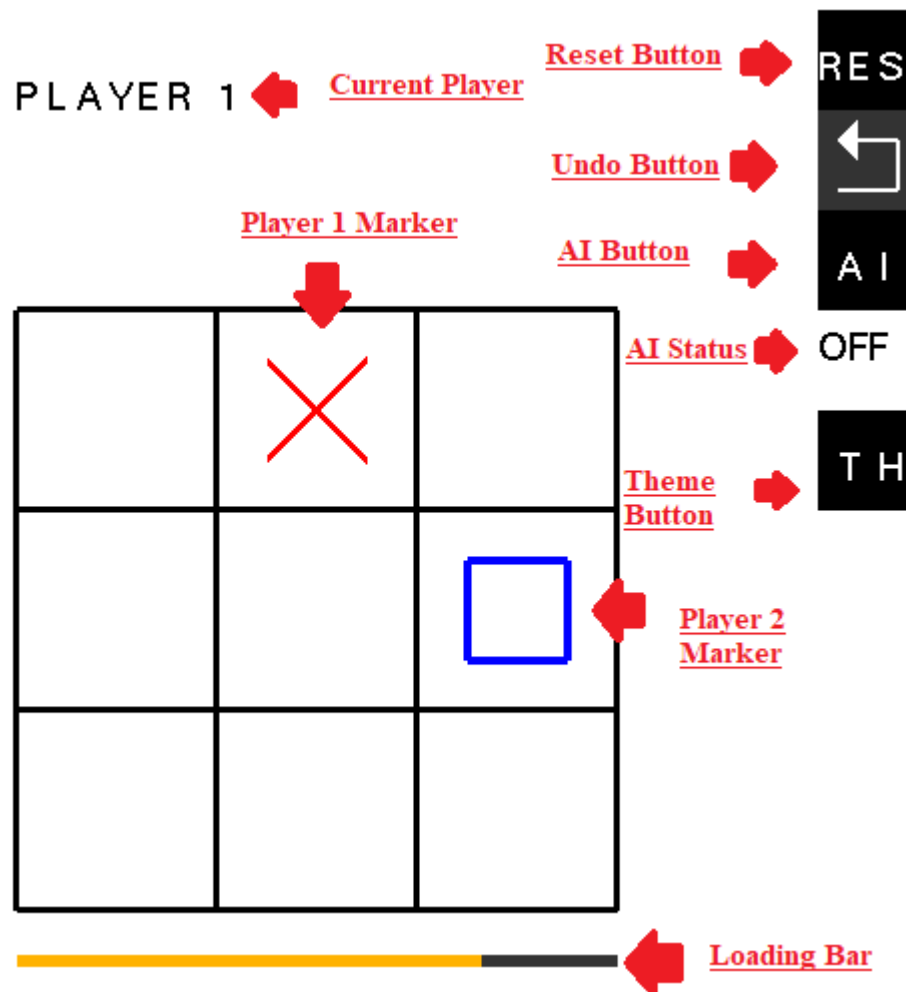
Third of all, other simple functionalities like: undo button (takes back the player 1 move or 2 moves, depending if AI is off or, respectively, on), reset button (resets the current game to the start keeping the other parameters the same, like AI, on or off, thematic, dark or light), thematic button (changes the theme of the game from light to dark and reverse).

Last of all, it contains animations. There are 2 types of animations in the game. First one is through simple incrementation of a parameter and redrawing a line (NO MATRIX) which represents the timer in player vs player game mode. If the bar reaches its end before the respective player makes a move, the AI will step in and "help" him. But the AI has been specially constructed to take player 2's place. So it might make him a favourite, although it won't leave the first one to lose without putting a fight.

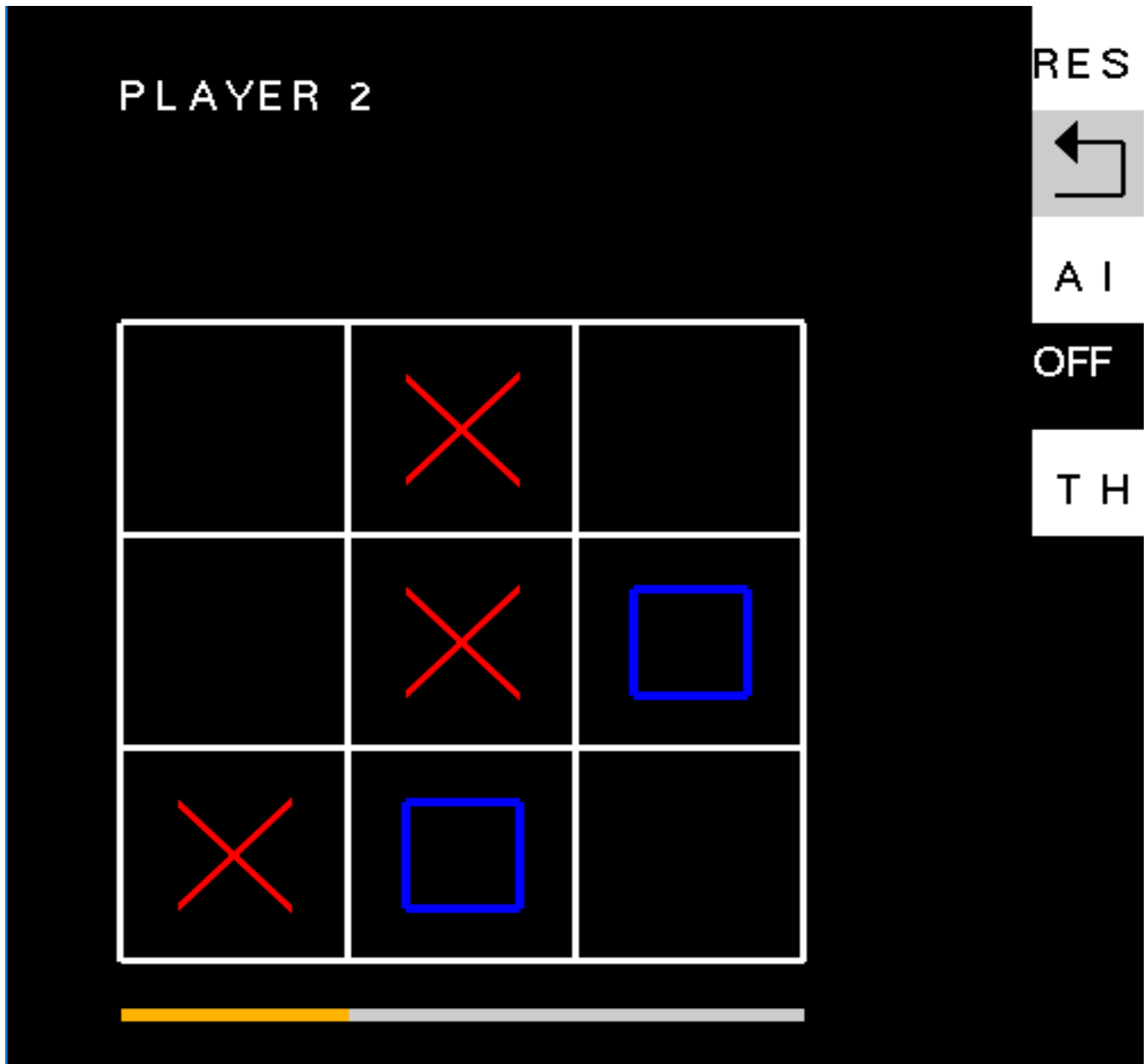
Second one is the marker placement throwing on the table. The markers are thrown from left down corner to the table through a scaling and rotational move to the right position (WITH MATRIX). The animation cannot be interrupted by the player. Even the AI is "polite enough" to wait for it to finish since v1.8 of the game.

### Visual Examples:

Light theme example:



Dark theme example:



### **Used libraries:**

iostream  
windows.h  
gl/freeglut.h  
cmath

### **Requirements:**

- The primitives used are quads and lines mostly, also helvetica characters.
- There are translations composed with rotation and scaling using matrix
- Interactive input has been satisfied from the first moment of the game since it requires players and it's only through the mouse

### **Originality:**

"Really?!"

Well it's a tic tac toe ... there goes the originality. This description is more original than the game itself as gameplay, although the combinations in the game are original. Didn't see a tic tac toe with changeable thematic during any moment of the game. Also animations to throw the player's markers on the board. Hmmm ... it's a bit original I guess. Let's go with it's original enough for a tic tac toe game, it's got an AI "polite" to the animation.

### **Disclaimer:**

I do not own the tic tac toe game idea, but i created an original copy of the game with animations and functionalities. The code is 100% owned by me (except for the libraries).

**End word:**

Hope you enjoyed this little project of opengl 2D practice through a graphic game of tic tac toe. Have fun playing it or learning from it, your choice. Good day and keep up the good work.