

Tic Tac Toe

For our final project, we'll implement a game of tic tac toe using LED indicators and push button controls.

Required Materials:

- 10 RGB LEDs (need 9)
- 30 220-Ohm resistors (need many, can get from CEID)
- 9 push down buttons (need 7)
- 5 shift registers (need 3)
- 1 large breadboard (need 1)

Concept:

The basic idea is to create a two-player tic tac toe game where players take turns pressing buttons to toggle the LEDs (which will change color/illumination when toggled) within the tic tac toe grid.

Time permitting, we also hope to implement the following:

- some logic that will detect when a player has won the game, lighting up a separate LED with the winning player's color and blinking all LEDs on the board to indicate that the game has ended
- AI that will allow for a single-player experience (using either primitive if-condition heuristics or an algorithm like minimax), potentially with multiple difficulty levels