Whack-A-Mole Game

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Introduction:

In Whack-A-Mole, there are 3 LEDS (moles) and 3 corresponding buttons. The LEDS will flicker in various ways (randomized) and the player must click the correct button, thus whacking a mole. If they press it in time, a high pitch sound will be heard and the score will increment. The objective of the game is to whack as many moles as they appear as possible under a set time limit and additionally beat the high score which can be displayed. In other words when the player's current score surpasses the high score, it will become the new winning high score.

Complexities:

1. EEPROM: the game saves the player's highest score by reading and writing data from the EEPROM. This data is accessed using read and write functions. As of now, the score can only be viewed in the Serial monitor.
2. IR remote/receiver: the IR remote was supposed to allow the player to select menu options from the LCD screen. I could not implement this complexity.
3. TFT display: the TFT screen was supposed to display graphics and both the player and high scores. This was not implemented.

User Guide: The user interacts with Whac-A-Mole by viewing the blinking LEDS that serve as an indicator of which button they should press. The player presses the corresponding button within the time frame that it's on. If the player misses the button or presses the incorrect one, there is no change to score (the player is also unable to "cheese"/exploit their way by pressing all buttons at the same time. The screen or monitor provides the user with information regarding scores.

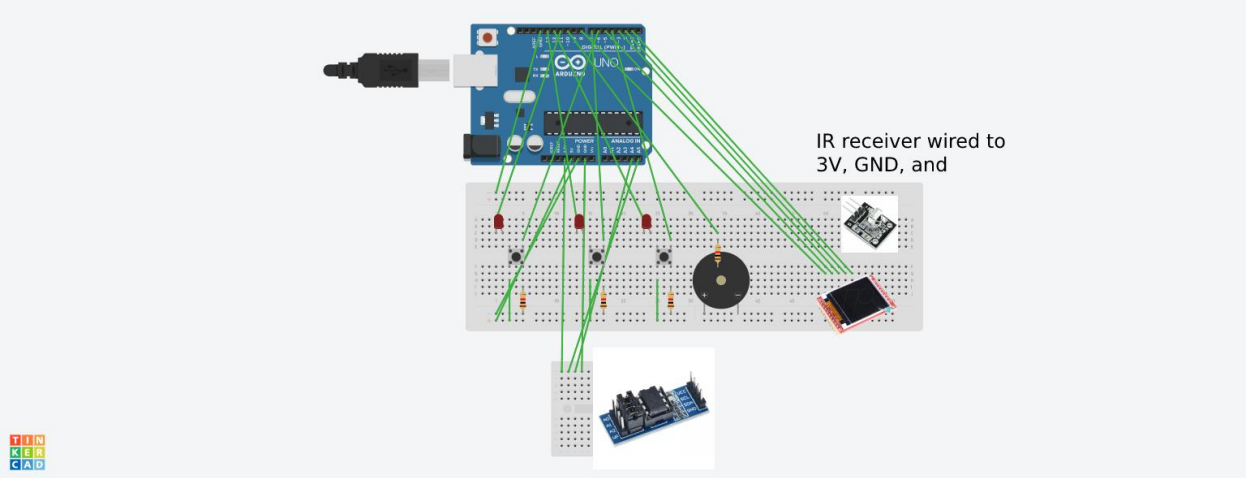
Hardware Components:

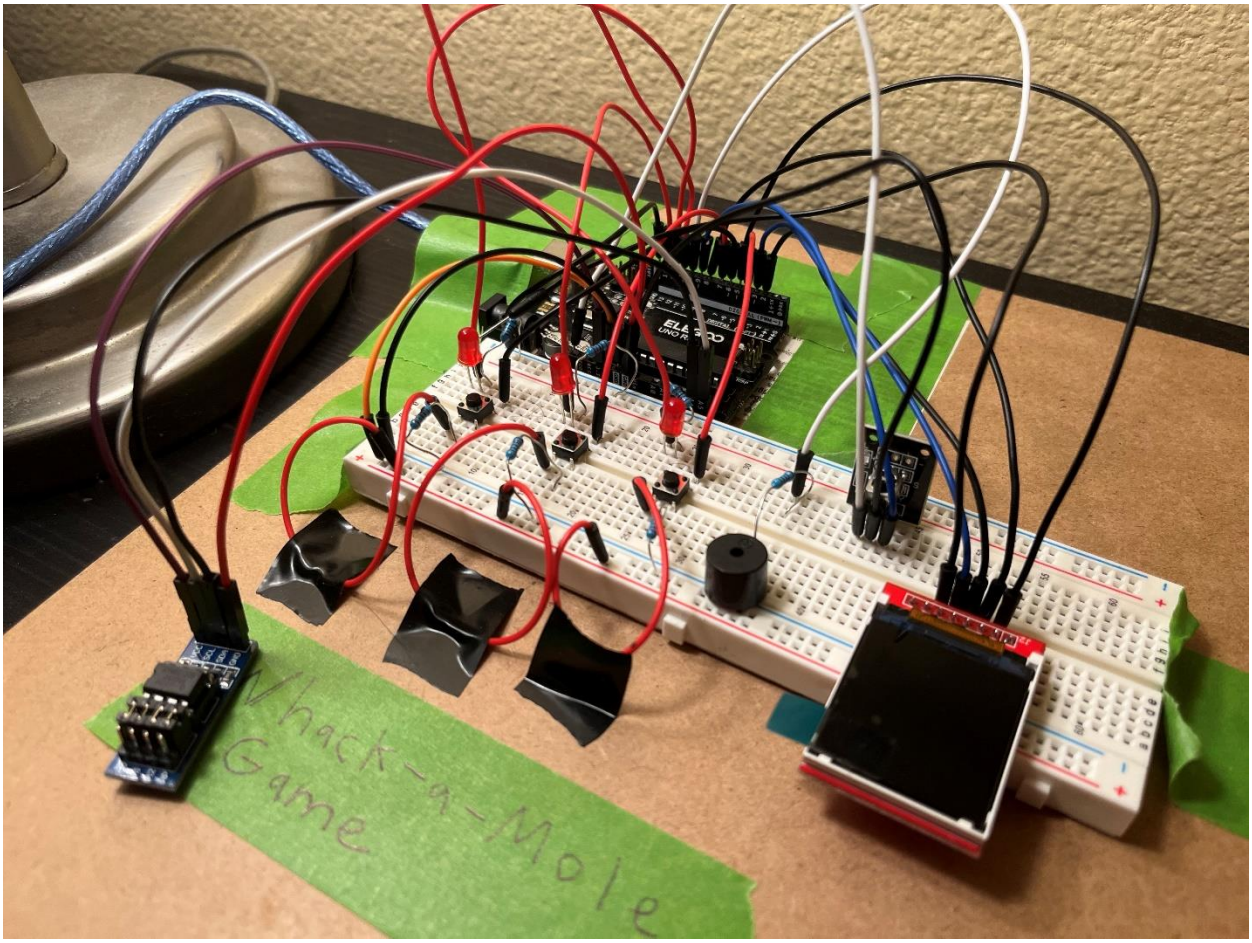
1. 3 Buttons (inputs)
2. EEPROM
3. IR Remote/Receiver
4. HiLetgo 1.44" Colorful SPI TFT LCD
5. Passive buzzer (1PC)

Software Libraries:

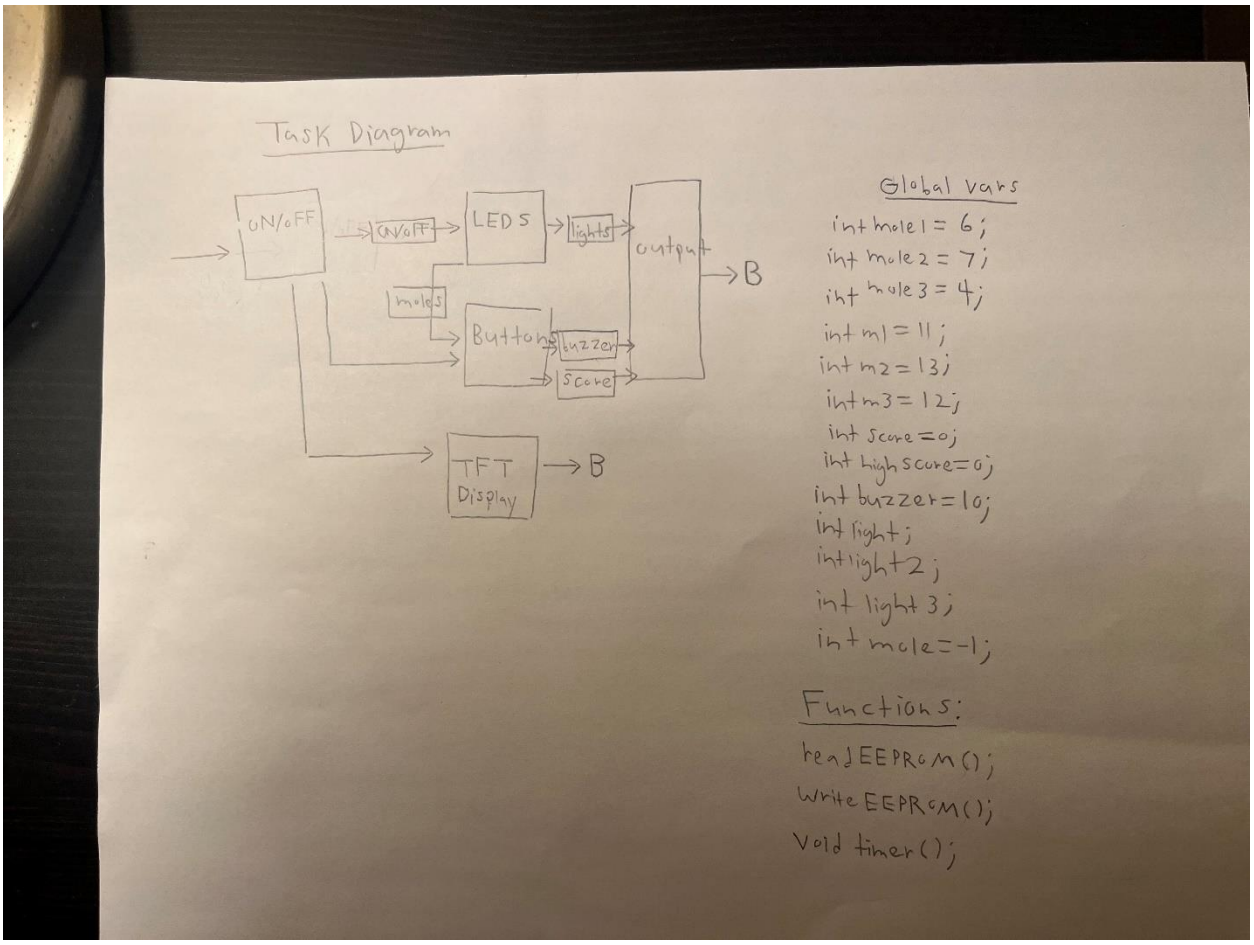
1. Wire library: this let me communicate with the EEPROM by transmitting data with read and write functions.

Wiring Diagram:





Task Diagram:



SynchSM Diagrams: