Mastermind

*A code-breaking game*

*Game Instructions*

# Game Play

1. On start, a 4 color (out of 8) combination is randomly generated by a 12-bit counter.
2. The goal of the game is for the player to figure out the combination in 10 tries.
3. After a player locks in a row, the player will receive hints letting the player know if:
   1. They have a color in the correct position (denoted by red).
   2. They have a correct color in the sequence (denoted by white).
4. If a player matches the combination before reaching 10-tries the player wins, the random colors are revealed, and green LED’s are illuminated.
5. Otherwise, if a player fails to match the combination before reaching 10-tries they lose, the random colors are revealed, and red LED’s are illuminated.

# Rules for Peg Hint Combinations

1. If a player color is in the right position a red peg is awarded.
2. If a player color is found in the sequence a white peg is awarded.
3. If there are duplicate colors, they are not all awarded a peg unless they correspond to the same number of duplicate colors in the sequence.
4. If no colors are in the right position and no colors are found in the sequence no pegs are awarded



# Controls

1. Reset
   1. Return to main screen and to start game over
2. Start
   1. Begin game
3. Set Color
   1. Change color of currently selected box based on color toggle
4. Color Toggle
   1. Select a color (refer to Possible Color Combinations)
5. Box Toggle
   1. Select a box to work on from left to right

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