

Project 1

Title

Mastermind

Course

CSC-7

Section

40517

Date

April 19th, 2020

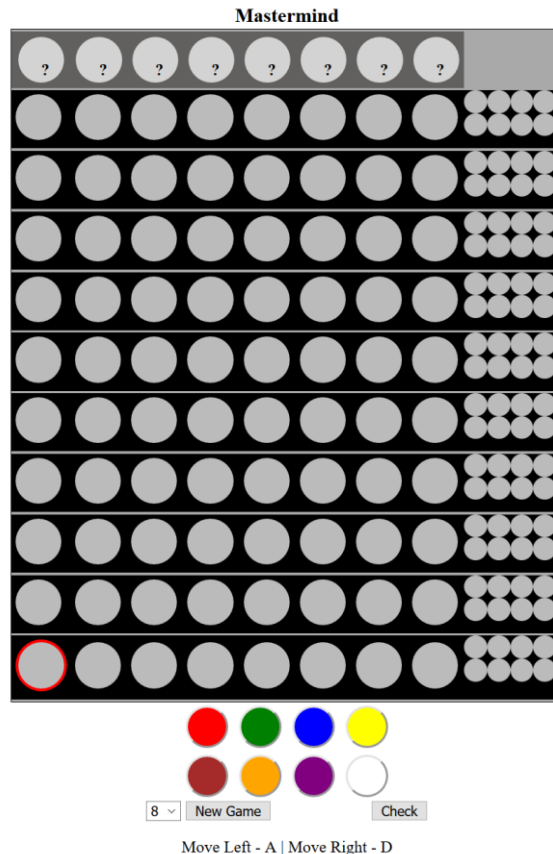
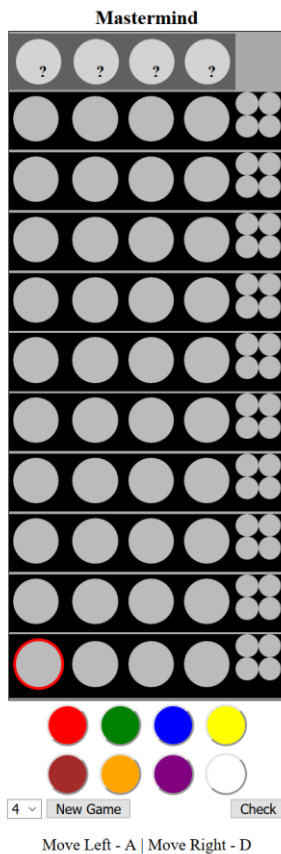
Author

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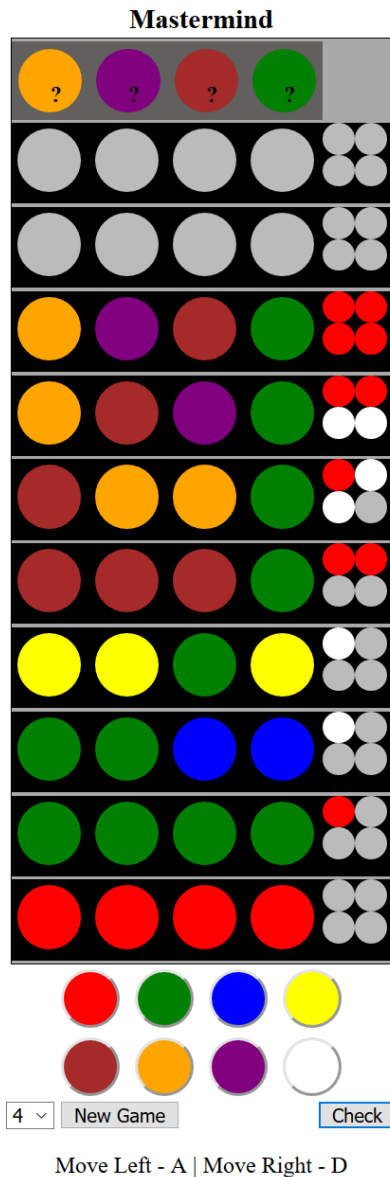
Introduction

Mastermind is a simple but fun board game that is played with only one person. A player must guess the correct color and order of a row of colored balls. The typical number of balls are either 4, 6, or 8. A player usually has 10 chances to correctly guess the order and colors of the balls or else they lose. The game provides feedback by stating how many colors are in the correct spot or correct color in general after every guess. The player wins when they make the correct guess.

Gameplay with Sample IO



The user is first greeted with the image on the left. The player can select the number of columns with the drop-down menu and press new game to refresh the past to achieve the image on the right. The red outline around the circle means it is selected and clicking any of the color buttons will change the selected color.



Once the player wins, they receive a congratulations alert and then it shows the top balls. The red on the side indicates a ball is in the right spot and white indicates right color wrong spot. To play again the player presses new game.

Development Summary

Lines of Code: 35 (HTML) / 91 (CSS) / 366 (JS) / 492 (Total)

I decided to make a website for the game like the example because it is much more enjoyable to play than in a terminal. The website is written in HTML/CSS/Javascript. Unlike the website, I didn't use PHP or any images, instead relying on CSS for the graphics.

This was my first true project using Javascript that I have made. Things could have obviously been written better, but I learned a lot along the way. The board was converted to a 2D array to make it easier to manage behind the scenes. The entire board is created as a table in Javascript and then added to the HTML document.

Every button at the bottom has a Javascript event listener attached to it to achieve its purpose. The column choice is stored as a cookie so when the new game button is pressed which refreshes the page the column choice updates.

Creating the board in Javascript and getting it to display properly with CSS was the most challenging part. I am looking forward to programming an AI to play the game.

Future Goals

- Be able to solely use the mouse like in the example website
- Implement an AI to play the game
- Responsive layout

Pseudocode (JS)

Assign row to 10.

If there is no cookie assign column to 4 else assign column to cookie value.

Create the board and push to HTML.

Convert board to 2D array.

Implement the hidden colors.

Add event listeners to all buttons.

If 'A' or 'D' is pressed move selector left/right.

If color button is pressed put color where selector is.

If check button is pressed and columns are used check the row.

Show the right color spots on the right.

Move selector to next row.

Repeat until player wins/loses.

If new game is pressed at any time the page refreshes.