

Practice 9

JavaScript Arrays and Loops

HTML Structure:

- A `<div id="colorGrid">` element serves as a container for the color buttons.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Color Grid</title>
  <link rel="stylesheet" href="cssloops.css">
</head>
<body>
  <h1>Random Color Grid</h1>
  <div id="colorGrid"></div>

  <script src="jsloops.js"></script>
</body>
</html>
```

CSS Styling:

- The grid is styled with a grid layout, and each button is sized and centered within the grid.

```
body {
  font-family: Arial, sans-serif;
  display: flex;
  flex-direction: column;
  align-items: center;
  justify-content: center;
  height: 100vh;
  margin: 0;
}

h1 {
  margin-bottom: 20px;
  color: #333;
}

#colorGrid {
  display: grid;
  grid-template-columns: repeat(5, 100px);
  gap: 10px;
}

.button {
  width: 100px;
  height: 100px;
  border: none;
  cursor: pointer;
  color: white;
  font-weight: bold;
  display: flex;
  align-items: center;
  justify-content: center;
  font-size: 14px;
}
```

JavaScript Logic:

- An array of objects named `colors` holds color names and hex codes.
- The `createColorGrid()` function uses a `for` loop to generate 10 buttons.
- Each button has a click event listener that:
 - Picks a random color from the `colors` array.
 - Changes the button's background to the random color.
 - Updates the button text to the color's name.

```
// Array of color names and corresponding color codes
const colors = [
  { name: "Red", code: "#FF5733" },
  { name: "Blue", code: "#3498DB" },
  { name: "Green", code: "#2ECC71" },
  { name: "Yellow", code: "#F1C40F" },
  { name: "Purple", code: "#9B59B6" },
  { name: "Orange", code: "#E67E22" },
  { name: "Pink", code: "#FFC0CB" },
  { name: "Brown", code: "#A52A2A" },
  { name: "Gray", code: "#808080" },
  { name: "Cyan", code: "#00FFFF" }
];

// Select the color grid container
const colorGrid = document.getElementById("colorGrid");

// Function to create and display a grid of buttons
function createColorGrid() {
  // Use a for loop to create 10 buttons
  for (let i = 0; i < 10; i++) {
    // Create a new button element
    const button = document.createElement("button");
    button.classList.add("button");

    // Set initial background color and text
    button.style.backgroundColor = "#333";
    button.innerText = "Click Me";

    // Add a click event listener to each button
    button.addEventListener("click", () => {
      // Get a random color from the array
      const randomColor = colors[Math.floor(Math.random() * colors.length)];

      // Change the button's background color and display the color name
      button.style.backgroundColor = randomColor.code;
      button.innerText = randomColor.name;
    });

    // Append the button to the grid container
    colorGrid.appendChild(button);
  }
}

// Call the function to create the color grid on page load
createColorGrid();
```