JavaScript assignments

Assignment 1: Sum of Two Numbers

Problem: Write a JavaScript program that takes two numbers as input from the user and displays their sum.

```
<!-- Assignment 1: Sum of Two Numbers -->
<!-- <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Sum of Two Numbers</title>
</head>
<body>
    <h1>Sum of Two Numbers</h1>


    <label for="num1">Enter first number:</label>
    <input type="number" id="num1" placeholder="First number"><br><br>

    <label for="num2">Enter second number:</label>
    <input type="number" id="num2" placeholder="Second number"><br><br>


    <button onclick="calculateSum()">Calculate Sum</button>


    <p id="result"></p>

    <script>

        function calculateSum() {

            var num1 = parseFloat(document.getElementById('num1').value);
            var num2 = parseFloat(document.getElementById('num2').value);


            if (isNaN(num1) || isNaN(num2)) {
                document.getElementById('result').textContent = "Please
enter valid numbers.";
```

```
            } else {

                var sum = num1 + num2;


                document.getElementById('result').textContent = "The sum
is: " + sum;
            }
        }
    </script>
</body>  -->
```

Assignment 2: Check if a Number is Even or Odd

Problem: Create a JavaScript program that takes a number as input from the user and determines
whether the number is even or odd.

```
<!-- Assignment 2: Check if a Number is Even or Odd -->
<!-- <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Even or Odd Checker</title>
</head>
<body>
    <h1>Check if a Number is Even or Odd</h1>


    <label for="number">Enter a number:</label>
    <input type="number" id="number" placeholder="Enter a number"><br><br>


    <button onclick="checkEvenOrOdd()">Check</button>


    <p id="result"></p>

    <script>
```

```
        function checkEvenOrOdd() {

            var num = parseInt(document.getElementById('number').value);


            if (isNaN(num)) {
                document.getElementById('result').textContent = "Please
enter a valid number.";
            } else {

                if (num % 2 === 0) {
                    document.getElementById('result').textContent = num +
" is an even number.";
                } else {
                    document.getElementById('result').textContent = num +
" is an odd number.";
                }
            }
        }
    </script>
</body>
</html> -->
```

Assignment 3: Find the Largest Number

Problem: Write a JavaScript function that takes three numbers as input from the user and displays the largest number.

```
<!-- Assignment 3: Find the Largest Number
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Find the Largest Number</title>
</head>
<body>
    <h1>Find the Largest Number</h1>
```

```
    <label for="num1">Enter first number:</label>
    <input type="number" id="num1" placeholder="First number"><br><br>

    <label for="num2">Enter second number:</label>
    <input type="number" id="num2" placeholder="Second number"><br><br>

    <label for="num3">Enter third number:</label>
    <input type="number" id="num3" placeholder="Third number"><br><br>


    <button onclick="findLargest()">Find Largest</button>


    <p id="result"></p>

    <script>

        function findLargest() {

            var num1 = parseFloat(document.getElementById('num1').value);
            var num2 = parseFloat(document.getElementById('num2').value);
            var num3 = parseFloat(document.getElementById('num3').value);


            if (isNaN(num1) || isNaN(num2) || isNaN(num3)) {
                document.getElementById('result').textContent = "Please
enter valid numbers.";
            } else {

                var largest = Math.max(num1, num2, num3);


                document.getElementById('result').textContent = "The
largest number is: " + largest;
            }
        }
    </script>
</body>
</html>
```

```
-->
```

Assignment 4: Basic To-Do List

Problem: Create a basic to-do list using JavaScript. The user should be able to add tasks, and the
tasks should be displayed below the input.

```
<!-- Assignment 4: Basic To-Do List
 <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>To-Do List</title>
</head>
<body>
    <h1>To-Do List</h1>

    <input type="text" id="taskInput" placeholder="Enter a task">
    <button onclick="addTask()">Add Task</button>

    <ul id="taskList"></ul>

    <script>
        function addTask() {
            const taskInput = document.getElementById("taskInput");
            const task = taskInput.value;

            if (task === "") {
                alert("Please enter a task");
                return;
            }

            const taskList = document.getElementById("taskList");

            // Create a new list item
            const li = document.createElement("li");
            li.textContent = task;

            // Append the new task to the list
```

```
            taskList.appendChild(li);

            // Clear the input field after adding the task
            taskInput.value = "";
        }
    </script>
</body>
</html> -->
```

Assignment 5: Temperature Converter (Celsius to Fahrenheit)

Problem: Create a temperature converter that converts a given temperature from Celsius to Fahrenheit using JavaScript.

Formula: Fahrenheit = (Celsius * 9/5) + 32

```
Assignment 5: Temperature Converter (Celsius to Fahrenheit) -->
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Celsius to Fahrenheit Converter</title>
</head>
<body>
    <h1>Celsius to Fahrenheit Converter</h1>

    <input type="number" id="celsiusInput" placeholder="Enter temperature
in Celsius">
    <button onclick="convertTemperature()">Convert</button>

    <p id="result"></p>

    <script>
        function convertTemperature()
        {
            // Get the value from the input field
            const celsius = document.getElementById("celsiusInput").value;

            // Check if the input is empty
            if (celsius === "")
            {
```

```
                alert("Please enter a temperature in Celsius");
                return;
            }

            // Convert Celsius to Fahrenheit
            const fahrenheit = (celsius * 9/5) + 32;

            // Display the result
            const result = document.getElementById("result");
            result.textContent = `${celsius}°C is equal to
${fahrenheit.toFixed(2)}°F`;
        }
    </script>
</body>
</html>
```

Assignment 6: Countdown Timer

Problem: Write a simple countdown timer using JavaScript. The user should input the number of seconds, and the timer should count down and display the time remaining.

```
 <!-- <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Countdown Timer</title>
</head>
<body>
    <h1>Countdown Timer</h1>

    <input type="number" id="timeInput" placeholder="Enter seconds">
    <button onclick="startCountdown()">Start Countdown</button>

    <p id="countdownDisplay">Time Remaining: </p>

    <script>
        let countdownInterval;

        function startCountdown() {
```

```
            // Clear any existing countdown
            clearInterval(countdownInterval);

            // Get the input value (number of seconds)
            let timeRemaining =
parseInt(document.getElementById("timeInput").value);

            // Check if input is valid
            if (isNaN(timeRemaining) || timeRemaining <= 0) {
                alert("Please enter a valid number of seconds.");
                return;
            }

            // Display the initial time
            document.getElementById("countdownDisplay").textContent =
`Time Remaining: ${timeRemaining} seconds`;

            // Start the countdown
            countdownInterval = setInterval(() => {
                timeRemaining--;

                // Update the display
                document.getElementById("countdownDisplay").textContent =
`Time Remaining: ${timeRemaining} seconds`;

                // If time reaches 0, stop the countdown
                if (timeRemaining <= 0) {
                    clearInterval(countdownInterval);

document.getElementById("countdownDisplay").textContent = "Time's up!";
                }
            }, 1000);  // The interval is set to 1000 milliseconds (1
second)
        }
    </script>
</body>
</html> -->
```

Assignment 7: Dynamic Color Changer

Problem: Create a webpage where the user can change the background color of the page by selecting a color from an input field.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Dynamic Color Changer</title>
    <style>
        body {
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            transition: background-color 0.5s;
        }
        input {
            padding: 10px;
            font-size: 16px;
        }
    </style>
</head>
<body>
    <input type="color" id="colorPicker" value="#ffffff">
    <script>
        const colorPicker = document.getElementById('colorPicker');

        colorPicker.addEventListener('input', (event) => {
            document.body.style.backgroundColor = event.target.value;
        });
    </script>
</body>
</html>
```

Assignment 8: Simple Calculator

Problem: Build a simple calculator with HTML and JavaScript that can perform basic operations such as addition, subtraction, multiplication, and division.

```
<!-- <!DOCTYPE html>
```

```
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Simple Calculator</title>
    <link rel="stylesheet" href="17oct.css">
</head>
<body>
    <h1>Simple Calculator</h1>
    <div class="calculator">
        <input type="number" id="num1" placeholder="Enter first number">
        <input type="number" id="num2" placeholder="Enter second number">

        <select id="operation">
            <option value="add">+</option>
            <option value="subtract">-</option>
            <option value="multiply">*</option>
            <option value="divide">/</option>
        </select>

        <button onclick="calculate()">Calculate</button>

        <p id="result"></p>
    </div>

    <script src="17oct.js"></script>
</body>
</html> -->
```

Assignment 9: Digital Clock

Problem: Create a simple digital clock that displays the current time and updates every second.

```
<!-- Assignment 9: Digital Clock
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Digital Clock</title>
```

```
</head>
<body>
    <div class="clock" id="clock">00:00:00</div>

    <script>
        function updateClock() {
            const now = new Date();
            const hours = String(now.getHours()).padStart(2, '0');
            const minutes = String(now.getMinutes()).padStart(2, '0');
            const seconds = String(now.getSeconds()).padStart(2, '0');

            const timeString = `${hours}:${minutes}:${seconds}`;
            document.getElementById('clock').textContent = timeString;
        }

        // Update the clock immediately and then every second
        updateClock();
        setInterval(updateClock, 1000);
    </script>
</body>
</html> -->
```

Assignment 10: Tip Calculator

Objective: Create a tip calculator that allows users to input the bill amount and select a tip percentage. The app should calculate the total bill amount, including the tip.

```
<!-- Assignment 10: Tip Calculator
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tip Calculator</title>
</head>
<body>
    <h1>Tip Calculator</h1>

    <label for="billAmount">Bill Amount ($):</label>
```

```
    <input type="number" id="billAmount" placeholder="Enter bill amount"
required>

    <label for="tipPercentage">Tip Percentage:</label>
    <select id="tipPercentage">
        <option value="15">15%</option>
        <option value="18">18%</option>
        <option value="20">20%</option>
        <option value="custom">Custom...</option>
    </select>

    <div id="customTip" style="display: none;">
        <label for="customPercentage">Custom Tip Percentage:</label>
        <input type="number" id="customPercentage" placeholder="Enter
custom percentage">
    </div>

    <button onclick="calculateTip()">Calculate Total</button>

    <h2 id="result"></h2>

    <script>
        // Function to calculate the total bill amount including tip
        function calculateTip() {
            const billAmount =
parseFloat(document.getElementById("billAmount").value);
            const tipPercentageSelect =
document.getElementById("tipPercentage");
            let tipPercentage;

            // Determine the selected tip percentage
            if (tipPercentageSelect.value === "custom") {
                tipPercentage =
parseFloat(document.getElementById("customPercentage").value);
            } else {
                tipPercentage = parseFloat(tipPercentageSelect.value);
            }

            // Validate inputs
            if (isNaN(billAmount) || billAmount < 0) {
```

```
                document.getElementById("result").textContent = "Please
enter a valid bill amount.";
                return;
            }

            if (tipPercentage < 0) {
                document.getElementById("result").textContent = "Please
enter a valid tip percentage.";
                return;
            }

            // Calculate total
            const tipAmount = (billAmount * tipPercentage) / 100;
            const totalAmount = billAmount + tipAmount;

            // Display result
            document.getElementById("result").textContent = `Total Amount
(including tip): $${totalAmount.toFixed(2)}`;
        }

        // Show/hide custom tip input based on selection

document.getElementById("tipPercentage").addEventListener("change",
function() {
            const customTipInput = document.getElementById("customTip");
            if (this.value === "custom") {
                customTipInput.style.display = "block";
            } else {
                customTipInput.style.display = "none";
                document.getElementById("customPercentage").value = ''; //
Clear custom percentage
            }
        });
    </script>
</body>
</html> -->
```

Assignment 12: StopWatch

Objective: Build a simple stopwatch that starts counting from 00:00 when the user clicks the "Start" button and stops when they click the "Stop" button. The user can also reset the time back to 00:00 by clicking "Reset."

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Simple Stopwatch</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            display: flex;
            flex-direction: column;
            align-items: center;
            justify-content: center;
            height: 100vh;
            background-color: #f4f4f4;
        }
        #stopwatch {
            font-size: 48px;
            margin-bottom: 20px;
        }
        button {
            padding: 10px 20px;
            font-size: 16px;
            margin: 5px;
        }
    </style>
</head>
<body>

<div id="stopwatch">00:00</div>
<button id="startButton">Start</button>
<button id="stopButton">Stop</button>
<button id="resetButton">Reset</button>

<script>
    let timer;
```

```
    let seconds = 0;

    const stopwatchDisplay = document.getElementById('stopwatch');

    function updateDisplay() {
        const minutes = Math.floor(seconds / 60);
        const secs = seconds % 60;
        stopwatchDisplay.textContent =
            (minutes < 10 ? '0' : '') + minutes + ':' +
            (secs < 10 ? '0' : '') + secs;
    }

    document.getElementById('startButton').addEventListener('click', () =>
{
        clearInterval(timer);
        timer = setInterval(() => {
            seconds++;
            updateDisplay();
        }, 1000);
    });

    document.getElementById('stopButton').addEventListener('click', () =>
{
        clearInterval(timer);
    });

    document.getElementById('resetButton').addEventListener('click', () =>
{
        clearInterval(timer);
        seconds = 0;
        updateDisplay();
    });
</script>

</body>
</html>
```

Assignment 13: Light/Dark Mode Toggle

Objective: Build a simple web page that allows the user to toggle between light and dark modes. The page should switch between light and dark backgrounds and corresponding text colors when the user clicks a "Toggle Mode" button.

```
<!-- Assignment 13: Light/Dark Mode Toggle
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Light/Dark Mode Toggle</title>

</head>
<body class="light-mode">
    <div class="container">
        <h1>Light/Dark Mode Toggle</h1>
        <p>This is a simple example of toggling between light and dark
modes using only HTML and JavaScript.</p>
        <button id="toggle-btn">Switch to Dark Mode</button>
    </div>

    <script>
        const toggleButton = document.getElementById('toggle-btn');
        const body = document.body;

        toggleButton.addEventListener('click', () => {
            // Toggle between light and dark mode classes on the body
            body.classList.toggle('dark-mode');

            // If the body has dark mode class, change the button text to
Light Mode, otherwise Dark Mode
            if (body.classList.contains('dark-mode')) {
                toggleButton.textContent = 'Switch to Light Mode';
            } else {
                toggleButton.textContent = 'Switch to Dark Mode';
            }
        });
    </script>
</body>
</html>
```

Assignment 14: Random Quote Generator

Objective: Create a random quote generator that displays a random quote from an array of quotes each time a button is clicked.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Random Quote Generator</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            display: flex;
            flex-direction: column;
            align-items: center;
            justify-content: center;
            height: 100vh;
            background-color: #f4f4f4;
            margin: 0;
        }
        #quote {
            font-size: 24px;
            margin-bottom: 20px;
            text-align: center;
            max-width: 600px;
        }
        button {
            padding: 10px 20px;
            font-size: 16px;
        }
    </style>
</head>
<body>

<div id="quote">Click the button to generate a random quote!</div>
<button id="newQuoteButton">New Quote</button>

<script>
    const quotes = [
        "Be Happy!",
```

```
        "You only have a life. Live it!",
        "Your mistakes are your best teacher!",
        "You deserve better!",
        "Go with the flow!",
        "It's ok to be not okay!"
    ];

    document.getElementById('newQuoteButton').addEventListener('click', ()
=> {
        const randomIndex = Math.floor(Math.random() * quotes.length);
        document.getElementById('quote').textContent =
quotes[randomIndex];
    });
</script>

</body>
</html>
```

Assignment 15: Image Carousel

Objective: Create an image carousel that allows users to click "Next" and "Previous" buttons to navigate through a set of images.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Image Carousel</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            display: flex;
            flex-direction: column;
            align-items: center;
            justify-content: center;
            height: 100vh;
            background-color: #f4f4f4;
            margin: 0;
        }
        #carousel {
```

```
            position: relative;
            max-width: 600px;
            overflow: hidden;
        }
        #images {
            display: flex;
            transition: transform 0.5s ease;
        }
        .image {
            min-width: 100%;
            box-shadow: 0 2px 10px rgba(0,0,0,0.1);
        }
        button {
            margin: 10px;
            padding: 10px 20px;
            font-size: 16px;
        }
    </style>
</head>
<body>

<div id="carousel">
    <div id="images">
        <img class="image" src="C:\Users\HARIPRIYA\Documents\WhatsApp
Image 2024-08-19 at 01.17.10_8da10e9c.jpg" alt="Image 1">
        <img class="image" src="C:\Users\HARIPRIYA\Documents\Group
33864.png" alt="Image 2">
        <img class="image" src="C:\Users\HARIPRIYA\Documents\WhatsApp
Image 2024-08-18 at 13.49.39_6d55492a.jpg" alt="Image 3">
    </div>
</div>
<button id="prevButton">Previous</button>
<button id="nextButton">Next</button>

<script>
    const images = document.getElementById('images');
    const totalImages = document.querySelectorAll('.image').length;
    let currentIndex = 0;
```

```
    document.getElementById('nextButton').addEventListener('click', () =>
{
        currentIndex = (currentIndex + 1) % totalImages;
        updateCarousel();
    });

    document.getElementById('prevButton').addEventListener('click', () =>
{
        currentIndex = (currentIndex - 1 + totalImages) % totalImages;
        updateCarousel();
    });

    function updateCarousel() {
        const offset = -currentIndex * 100; // Move by 100% for each image
        images.style.transform = `translateX(${offset}%)`;
    }
</script>

</body>
</html>
```