JAVASCRIPT

==JAVASCRIPT QUESTIONS LAB-6==

1)Swapping number

```
<!DOCTYPE html>

<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Swap Variables</title>
</head>
<body>
<h2>Swapping a variable without a third variable</h2>
<button onclick="swap()">Swap Variables</button>
<p id="result"></p>
<script>
function swap() {
let a = parseInt(prompt("Enter the value of a:"));
let b = parseInt(prompt("Enter the value of b:"));
a = a + b;
b = a - b;
a = a - b;
document.getElementById("result").innerHTML = After swap: a={a}, b={b};
}
</script>
</body>
</html>
```

2)Largest

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

```
<input id="num1" type="number">
<input id="num2" type="number">
<input id="num3" type="number">
<button onclick="findlargestnum()">Find Largest</button>
<p id="result"></p>
<script>
function findlargestnum(){
const num1=parseInt(document.getElementById("num1").value);
const num2=parseInt(document.getElementById("num2").value);
const num3=parseInt(document.getElementById("num3").value);
const largest=Math.max(num1,num2,num3);
document.getElementById("result").innerHTML=Largest: ${largest};
}
</script>
</body>
</html>

3)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</title>
</head>
<body>
<h1>Even or Odd</h1>
<input type="number" id="num">
<button onclick="evenodd()">check</button>
<p id="result"></p>
<script>
function evenodd(){
const num1=parseInt(document.getElementById('num').value);
const ans=(num1%2==0)?'Even':'odd';
document.getElementById('result').innerHTML=ans;
}
</script>
</body>
</html>
```

4)reverse

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Reverse of a Number</title>
</head>
<body>
<h1>Reverse of a Number</h1>
<input type="number" id="num">
<button onclick="fun()">Get Reverse</button>
<p id="result"></p>
```

```
    ````<script>````
        ````function fun() {````
            ````const num = document.getElementById('num').value;````
            ````const reverse = num.split('').reverse().join('');````
            ````document.getElementById('result').innerHTML = reverse;````
        ````}````
    ````</script>````
```

```
</body>
</html>
```

5)count digit

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Count digits in a number</title>

</head>

<body>

  <h1>Count the number of digits in a number</h1>
```
```

```
  <input type="number" id="number" placeholder="Enter a number">
  <button onclick="digit()"> COunt</button>
  <p id="result"></p>
  <script>
    function digit(){
      const num=document.getElementById("number").value;
      const count=num.length;
      document.getElementById("result").innerHTML=count;
    }
  </script>
</body>
</html>
```

6)

```
<!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</title>
</head>
<body>
<h1>Celsius to Fahrenheit Converter</h1>
<input type="number" id="cel">
<button onclick="func()">Convert</button>
<p id="result"></p>
<script>
function func(){
const C=document.getElementById('cel').value;
const f=(C*9/5)+32;
document.getElementById('result').innerHTML=f;
}
</script>
</body>
```

</html>
7)
recursive
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Fibonacci</title>
</head>
<body>
<h1>Fibonacci</h1>
<input type="number" id="fib" min="1" placeholder="Enter a positive integer">
<button onclick="func()">Fibonacci convert</button>

```
``<script>``
    ``// Recursive function to calculate Fibonacci numbers``
    ``function fibonacci(n) {``
        ``if (n <= 0) return 0;  // Base case for n = 0``
        ``if (n === 1) return 1;  // Base case for n = 1``
        ``return fibonacci(n - 1) + fibonacci(n - 2); // Recursive call``
    ``}``

    ``function func() {``
        ``const n = parseInt(document.getElementById('fib').value);``
        ``let arr = [];``

        ``// Handle input validation``
        ``if (n <= 0) {``
            ``document.getElementById('result').innerHTML = 'Please enter a
positive integer.';``
            ``return;``
        ``}``

        ``// Generate Fibonacci sequence``
        ``for (let i = 0; i < n; i++) {``
            ``arr.push(fibonacci(i)); // Call the recursive function for each
Fibonacci number``
        ``}``
```

```
        ``// Display the result``
        ``document.getElementById('result').innerHTML = arr.join(', ');``
    ``}``
 ``</script>``
```

```
</body>
</html>
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Fibonacci</title>

</head>

<body>

  <h1>Fibonacci</h1>

  <input type="number" id="fib">

  <button onclick="func()">Fibonacci convert</button>

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

  <script>

    function func(){

      const n=document.getElementById('fib').value;

      let arr=[];

      let a=0,b=1;

      arr.push(a);

      if (n >= 1) {

        arr.push(a); // Add the first Fibonacci number
```

```
      }
      // Handle n = 2
      if (n >= 2) {
        arr.push(b);
      }
      for (let i = 2; i < n; i++) {
        let temp = b;
        b = a + b;
        a = temp;  // Update for the next iteration
        arr.push(b); // Push the new Fibonacci number to the array
      }
      document.getElementById('result').innerHTML=arr.join(',');
    }
  </script>
</body>
</html>
8)<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>GCD Calculator</title>
</head>
<body>
<h1>Find the GCD (Greatest Common Divisor)</h1>
```

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

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

  ``<button onclick="findGCD()">Calculate GCD</button>``
  ``<p id="result"></p>``

  ``<script>``
      ``// Function to calculate GCD using the Euclidean algorithm``
      ``function gcd(a, b) {``
          ``if (b === 0) {``
              ``return a; // Base case: GCD(a, 0) = a``
          ``}``
          ``return gcd(b, a % b); // Recursive case``
      ``}``

      ``// Function to retrieve user input and display the GCD result``
      ``function findGCD() {``
          ``const num1 = parseInt(document.getElementById('num1').value);``
          ``const num2 = parseInt(document.getElementById('num2').value);``

          ``// Input validation``
          ``if (isNaN(num1) || isNaN(num2)) {``
              ``document.getElementById('result').innerHTML = 'Please enter
  valid numbers.';``
              ``return;``
          ``}``

          ``// Calculate GCD``
          ``const result = gcd(num1, num2);``
          ``document.getElementById('result').innerHTML = 'The GCD of ' + num1 +
  ' and ' + num2 + ' is ' + result + '.';``
      ``}``
  ``</script>``
```

```
</body>
</html>
9)<!DOCTYPE html>

<html lang="en">
```

```
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>LCM</title>
</head>
<body>
  <h1>Finding LCM of two numbers</h1>
  <input type="number" id="num1">
  <input type="number" id="num2">
  <button onclick="func()">calculate</button>
  <p id="result"></p>
  <script>
    function gcd(a,b){
      while (b !== 0) {
        let temp = b;
        b = a % b;
        a = temp;
      }
      return Math.abs(a);
    }
    function lcm(a,b){
      if (a === 0 || b === 0) return 0;
      return Math.abs(a * b) / gcd(a, b);
    }
```

```
    function func(){
      const a=parseInt(document.getElementById('num1').value);
      const b=parseInt(document.getElementById('num2').value);
      const ans=lcm(a,b);
      document.getElementById('result').innerHTML=ans;
    }
  </script>
</body>
</html>
10)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Armstrong Number Checker</title>
</head>
<body>
  <h1>Check if a Number is an Armstrong Number</h1>
  <input type="number" id="num" placeholder="Enter a number" required>
  <button onclick="checkArmstrong()">Check Armstrong Number</button>
  <p id="result"></p>
  <script>
    function checkArmstrong() {
      const dig = parseInt(document.getElementById('num').value);
      if (isNaN(dig) || dig < 0) {
```

```
        document.getElementById('result').innerText = "Please enter a valid positive integer.";
        return;
      }
      const digits = dig.toString().split('').map(Number);
      const n = digits.length;
      const sumOfPowers = digits.reduce((sum, digit) => sum + Math.pow(digit, n), 0);
      if (sumOfPowers === dig) {
        document.getElementById('result').innerText = `${dig} is an Armstrong number.`;
      } else {
        document.getElementById('result').innerText = `${dig} is NOT an Armstrong number.`;
      }
    }
  </script>
</body>
</html>
```

11)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Counts number of vowels and consinants</title>
</head>
```

```
<body>
  <h1>Counts number of vowels and consinants</h1>
  <input type="text" id="string">
  <button onclick="func()" >count</button>
  <p id="result"></p>
  <script>
    function func(){
      let str=document.getElementById('string').value;
      let str2=str.split('');
      let n=str.length;
      let countc=0;
      let countv=0;
      for(let i=0;i<n;i++){
        if(str2[i]=='a'||str2[i]=='e'||str2[i]=='i'||str2[i]=='o'||str2[i]=='u')
{
          countv++;
        }
        else{
        countc++;
        }
      }
      document.getElementById('result').innerHTML=`${countc},${countv}`;
    }
  </script>
</body>
```

```
</html>
12)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Remove Duplicates</title>
  <style>
    body { font-family: Arial, sans-serif; }
    input, button { margin: 10px; padding: 5px; }
  </style>
</head>
<body>
  <h3>Remove Duplicates from an Array</h3>
  <input type="text" id="array" placeholder="Enter numbers separated by commas">
  <button onclick="removeDuplicates()">Remove</button>
  <p id="result"></p>
  <script>
    function removeDuplicates() {
      const input = document.getElementById('array').value; // Get input value
      if (!input) {
        document.getElementById('result').innerText = "Please enter some
numbers."; // Handle empty input
        return;
      }
      const arr = input.split(',').map(Number); // Split input string into an
array
```

```
      const unique = arr.filter((value, index) => arr.indexOf(value) === index);
// Remove duplicates

      document.getElementById('result').innerText = `Array Without Duplicates:
${unique}`; // Correct interpolation

    }

  </script>

</body>

</html>
13)<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>arr</title>

</head>

<body>

  <h1>Finding Smallest and the largest number in an array</h1>

  <input type="number" id="arr">

  <button onclick="func()"> Find</button>

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

  <script>

    function func(){

      const arr=document.getElementById('arr').value.split('').map(Number);

      const n=arr.length;

      const sortedUnique = arr.sort((a, b) => a - b);

      document.getElementById('result').innerHTML=`${arr[1]},${arr[n-2]}`;
```

```
    }
  </script>
</body>
</html>
14)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Pangram</title>
</head>
<body>
  <h1>pangram</h1>
  <input type="text" id="pan">
  <button onclick="func()">check</button>
  <p id="result"></p>
  <script>
    function func(){
      const alpha=document.getElementById('pan').value.split('');
      const alphabet='abcdefghijklmnopqrstuvwxyz';
      const isp=alphabet.split('').every(char=>alpha.includes(char));
      document.getElementById('result').innerHTML=`${isp}`;
    }
  </script>
</body>
```

```
</html>
15)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Missing number</title>
</head>
<body>
  <h1>Find the missing number</h1>
  <input type="number" id="num">
  <button onclick='func()'>find</button>
  <p id="result"></p>
  <script>
    function func(){
      const arr=document.getElementById('num').value.split('').map(Number);
      for(let i=0;i<arr.length;i++)
      {
        if(arr[i]!==i){
          document.getElementById('result').innerHTML=`${i-1}`;
        }
      }
    }
  </script>
</body>
```

```
</html>
16)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Sorting</title>
</head>
<body>
  <h1>Sorting</h1>
  <input type="text" id="sort">
  <button onclick="func()">sort</button>
  <p id="result"></p>
  <script>
    function func()
    {
      const arr=document.getElementById('sort').value.split('').map(Number);
      for(let i=0;i<arr.length;i++){
        for(let j=0;j<arr.length-i-1;j++){
          if(arr[j]>arr[j+1]){
            [arr[j],arr[j+1]]=[arr[j+1],arr[j]]
          }
        }
      }
      document.getElementById('result').innerText=`${arr.join(',')}`;
```

```
    }
  </script>
</body>
</html>
17)
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Decimal to Binary</title>
  <style>
    body { font-family: Arial, sans-serif; }
    input, button { margin: 10px; padding: 5px; }
  </style>
</head>
<body>
  <h3>Convert Decimal to Binary</h3>
  <input type="number" id="decimal" placeholder="Enter decimal number" min="0">
  <button onclick="convertToBinary()">Convert</button>
  <p id="result"></p>
  <script>
    function convertToBinary() {
      const decimal = document.getElementById('decimal').value; // Get decimal
input
      if (decimal === "") {
        // Check if input is empty
```

```
        document.getElementById('result').innerText = "Please enter a decimal number.";
        return;
      }
      const binary = parseInt(decimal).toString(2); // Convert to binary
      document.getElementById('result').innerText = `Binary: ${binary}`; // Use backticks for string interpolation
    }
  </script>
</body>
</html>
18)<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Non repeating</title>
</head>
<body>
  <h1>non repeating string</h1>
  <input type="text" id="rep">
  <button onclick="func()"></button>
  <p id="result"></p>
  <script>
    function func(){
      const f=document.getElementById('rep').value.split('');
```

```
      n=f.length;
      let charCount={};
      for (let i = 0; i < n; i++) {
        charCount[f[i]] = (charCount[f[i]] || 0) + 1;
      }
      // Find the first non-repeating character
      for (let i = 0; i < n; i++) {
        if (charCount[f[i]] === 1) {
          document.getElementById('result').innerText = `The first non-repeating character is: ${f[i]}`;
          return;
        }
      }
      // If no non-repeating character is found
      document.getElementById('result').innerText = 'No non-repeating character found.';}
  </script>
</body>
</html>
19)
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Longest Word Finder</title>
```

```
</head>

<body>

  <h1>Longest Word Finder</h1>

  <input type="text" id="word" placeholder="Enter a sentence">

  <button onclick="findLongestWord()">Find</button>

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

  <script>

    function findLongestWord() {

      const lword = document.getElementById('word').value; // Get the input from
the text box

      const longest = lword.split(' ').reduce((longest, word) =>

        word.length > longest.length ? word : longest,

        ""

      ); // Corrected 'legnth' to 'length'

      document.getElementById('result').innerText = `Longest word: ${longest}`;
// Corrected string interpolation syntax

    }

  </script>

</body>

</html>
20)
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Occurrence Finder</title>
</head>
<body>
  <h1>Find the Occurrences</h1>
  <input type="text" id="string" placeholder="Enter a string"> <!-- Updated to use 'string' ID -->
  <button onclick="countCharacters()">Find</button> <!-- Updated function name -->
  <p id="result"></p>
  <script>
    function countCharacters() {
      const str = document.getElementById('string').value; // Get input from the text box
      const count = {}; // Object to store character counts
      // Iterate through each character in the string
      for (let char of str) {
        count[char] = (count[char] || 0) + 1; // Count occurrences
      }
      // Create a formatted string to display counts
      const formattedCounts = Object.entries(count)
        .map(([char, freq]) => `${char}: ${freq}`)
        .join(', '); // Format the output
      document.getElementById('result').innerText = `Counts: ${formattedCounts}`; // Display results
    }
  </script>
```

```
</body>

</html>
```

==JAVASCRIPT LAB-7==

1)Guess the number

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Guess the Number</title>

</head>

<body>

  <h1>Guess the Number</h1>

  <input type="number" id="num" min="1" max="100" placeholder="Enter a number between 1 and 100">

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

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

  <script>

    const randomnumber = Math.floor(Math.random() * 100) + 1; // Random number between 1 and 100

    let attempts = 0; // Initialize attempts

    const maxattempts = 10; // Set a maximum number of attempts

    function func() {

      const guess = parseInt(document.getElementById('num').value);

      const messageElement = document.getElementById('result');
```

```
      attempts++;

      if (guess === randomnumber) {

        messageElement.textContent = `Congratulations! You have guessed the correct number in ${attempts} attempts.`;

        messageElement.style.color = "green";

      } else if (attempts >= maxattempts) {

        messageElement.textContent = `You have reached the maximum number of attempts. The number was ${randomnumber}.`;

        messageElement.style.color = "red";

      } else if (guess > randomnumber) {

        messageElement.textContent = "Too high. Try again!";

        messageElement.style.color = "red";

      } else if (guess < randomnumber) {

        messageElement.textContent = "Too low. Try again!";

        messageElement.style.color = "red";

      }

    }

  </script>

</body>

</html>
```

2)Write a JavaScript program that prints numbers from 1 to 50: • If a number is divisible by 3, print "Fizz". • If a number is divisible by 5, print "Buzz". • If a number is divisible by both 3 and 5, print "FizzBuzz".

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Guess the number</title>
```

```
<style>
body {
font-family: Arial, Helvetica, sans-serif;
text-align: center;
padding: 50px;
}
input, button {
padding: 10px;
margin: 5px;
font-size: 16px;
}
</style>
</head>
<body>
<h1>PRINT NUMBERS FROM 1 TO 50</h1>
<p id="message">Enter a number:</p>
<input type="number" id="userInput" min="1" max="50">
<button onclick="printNumber()">Submit</button>
```

```
`<p id="output"></p>`

`<script>`
    `function printNumber() {`
        `const userInput = document.getElementById('userInput').value;`
        `let output = '';`
        `for (let i = 1; i <= userInput; i++) {`
            `if (i % 3 == 0 && i % 5 == 0) {`
                `output += 'FizzBuzz<br>';`
            `} else if (i % 3 == 0) {`
                `output += 'Fizz<br>';`
            `} else if (i % 5 == 0) {`
                `output += 'Buzz<br>';`
            `} else {`
                `output += i + '<br>';`
            `}`
        `}`
        `document.getElementById('output').innerHTML = output;`
    `}`
`</script>`
```

```
</body>
</html>
```

3)Simple Calculator Create a web-based calculator with JavaScript that: • Accepts two numbers from the user. • Performs addition, subtraction, multiplication, and division based on user selection.

```
<!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>
<style>
body{
font-family: Arial, Helvetica, sans-serif;
text-align: center;
padding: 50px;
background-color: aqua;
color: aquamarine;
}
input,button,select{
padding: 10px;
margin: 10px;
width: 100px;
border: 1px solid #ccc;
border-radius: 5px;
counter-reset: 1;
}
.container{
display: inline-block;
text-align: left;
}
</style>
</head>
<body>
<h1>Simple Calculator</h1>
<div class="container">
<label for="">Enter the first Number</label> <br>
<input type="number" id="num1" placeholder="1stnum"><br>
```

```
    `<label for="">Enter the 2nd number</label>`
    `<input type="number" id="num2" placeholder="2ndnum"><br>`

    `<label for="">Select an operation</label>`
    `<select  id="operation">`
        `<option value="add">Addition</option>`
        `<option value="sub">Subtraction</option>`
        `<option value="multi">Multiplication</option>`
        `<option value="div">Division</option>`
    `</select> <br><br>`
    `<button onclick="calculate()">Calculate</button>`
    `<p id="result"></p>`
`</div>`
`<script>`
    `function calculate(){`
        `const num1 = parseInt(document.getElementById('num1').value);`
        `const num2 = parseInt(document.getElementById('num2').value);`
        `const operation = document.getElementById('operation').value;`

        `let result;`

        `if(operation == "add"){`
            `result = num1 + num2;`
        `}`
        `else if(operation == "sub"){`
            `result = num1 - num2;`
        `}`
        `else if(operation == "multi"){`
            `result = num1 * num2;`
        `}`
        `else if(operation == "div"){`
            `result = num1 / num2;`
        `}`
        `document.getElementById('result').innerText = "The result is: " +
result;`
    `}`
`</script>`
```

```
</body>
</html>
```

4)Palindrome Checker Write a JavaScript function that checks if a given word or sentence is a palindrome (ignoring spaces, punctuation, and case).

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Palindrome Checker</title>
<style>
body {
font-family: Arial, Helvetica, sans-serif;
padding: 20px;
margin: 5px;
text-align: center;
}
input {
padding: 10px;
margin: 10px;
width: 50%;
border: 1px solid #ccc;
border-radius: 5px;
}
</style>
</head>
<body>
<h1>Palindrome Checker</h1>
<p>Enter the string</p>
<input type="text" id="string" placeholder="Enter the string"
oninput="checkPalindrome()">
<p id="result"></p>
```

```
`<script>`
    `function checkPalindrome() {`
        `const str = document.getElementById('string').value;`
        `const resultElement = document.getElementById('result');`

        `if (isPalindrome(str)) {`
            `resultElement.textContent = `"${str}" is a palindrome!`;`
        `} else {`
            `resultElement.textContent = `"${str}" is not a palindrome.`;`
```

```
        `}`
    `}`

    `function isPalindrome(str) {`
        `const reversedStr = str.split('').reverse().join('');`
        `return str === reversedStr;`
    `}`
 `</script>`
```

```
</body>
</html>
```

5)Character Counter Create a JavaScript program that: • Takes input from the user. • Counts and displays the number of characters (including spaces). • Displays the number of words.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Character counter</title>
<style>
body{
font-family: Arial, sans-serif;
text-align: center;
}
input{
padding: 10px;
margin: 10px;
width: 50%;
border: 1px solid #ccc;
border-radius: 5px;
}
p{
font-size: 20px;
}
</style>
</head>
<body>
<h1>Character Counter</h1>
<p>Enter the string you want to enter here </p>
```

```
<input type="text" id="input" oninput="count()">
<p id="output">0</p>

  `<script>`
      `function count(){`
          `var input = document.getElementById('input').value;`
          `var output = document.getElementById('output');`
          `output.innerHTML = input.length;`
      `}`
  `</script>`

</body>
</html>
```

6)Find Duplicates in an Array Write a JavaScript function that finds and prints duplicate values in an array.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Find Duplicates and Remove Them</title>
<style>
body {
font-family: Arial, sans-serif;
text-align: center;
padding: 50px;
}
input, button {
padding: 10px;
margin: 10px;
font-size: 16px;
}
</style>
</head>
<body>

  `<h1>Find and Remove Duplicates in an Array</h1>`
  `<p>Enter values separated by commas:</p>`
  `<input type="text" id="arrayInput" placeholder="e.g., 1,2,3,2,4,1,5">`
```

```
`<button onclick="processArray()">Submit</button>`

`<p id="duplicatesResult"></p>`
`<p id="uniqueResult"></p>`

`<script>`
    `function processArray() {`

        `const input = document.getElementById('arrayInput').value;`
        `let array = input.split(',').map(item => item.trim());`

        `const findDuplicates = (arr) => {`
            `const duplicates = [];`
            `const seen = new Set();`

            `arr.forEach(item => {`
                `if (seen.has(item)) {`
                    `duplicates.push(item);`
                `} else {`
                    `seen.add(item);`
                `}`
            `});`
            `return duplicates;`
        `};`

        `const removeDuplicates = (arr) => {`
            `return [...new Set(arr)];`
        `};`

        `const duplicates = findDuplicates(array);`
        `const uniqueArray = removeDuplicates(array);`

        `document.getElementById('duplicatesResult').textContent =
duplicates.length > 0 ?`
            `"Duplicates: " + duplicates.join(', ') : "No duplicates found.";`
        `document.getElementById('uniqueResult').textContent = "Unique array:
" + uniqueArray.join(', ');`
    `}`
`</script>`
```

</body>
</html>

7)Find the Second Largest Number Write a JavaScript function to find the second largest number in an array.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Find Second & Third Largest</title>
</head>
<body>

`<h2>Find Second & Third Largest Number</h2>`

`<label>Enter numbers (comma-separated):</label>`
`<input type="text" id="arrInput" placeholder="e.g., 10,5,8,20,15">`
`<button onclick="findLargest()">Find</button>`

`<p>Second Largest: <span id="secondLargest"></span></p>`
`<p>Third Largest: <span id="thirdLargest"></span></p>`

`<script>`
    `function findLargest() {`
        `let arr = document.getElementById("arrInput").value`
            `.split(',')`
            `.map(num => parseFloat(num.trim()))`
            `.filter(num => !isNaN(num));`

        `let uniqueArr = [...new Set(arr)].sort((a, b) => b - a);`

        `let second = uniqueArr.length > 1 ? uniqueArr[1] : "Not enough
numbers";`
        `let third = uniqueArr.length > 2 ? uniqueArr[2] : "Not enough
numbers";`

        `document.getElementById("secondLargest").innerText = second;`
        `document.getElementById("thirdLargest").innerText = third;`
```

```
    `}`
  `</script>`
```

```
</body>
</html>
```

8)Sort an Array Without Using the sort() Method Write a JavaScript function to sort an array of numbers without using Array.sort().

```
<!DOCTYPE html>
<html lang="en">

<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Sort Array Without Using Sort()</title>
<style>
body {
font-family: Arial, sans-serif;
max-width: 600px;
margin: 20px auto;
padding: 20px;
text-align: center;
}
```

```
    `.container {`
        `border: 1px solid #ccc;`
        `padding: 20px;`
        `border-radius: 8px;`
    `}`

    `input {`
        `padding: 8px;`
        `margin: 10px;`
        `width: 300px;`
    `}`

    `button {`
        `padding: 10px 20px;`
        `margin: 10px;`
        `cursor: pointer;`
    `}`
```

```
    `#result {`
        `margin-top: 20px;`
        `font-size: 18px;`
    `}`
`</style>`
```

```
</head>
```

```
<body>
<div class="container">
<h1>Sort Array Without Using Sort()</h1>
<input type="text" id="arrayInput" placeholder="Enter numbers separated by commas (e.g., 5,3,8,1,2)">
<br>
<button onclick="sortArray(true)">Sort Ascending</button>
<button onclick="sortArray(false)">Sort Descending</button>
<div id="result"></div>
</div>
```

```
`<script>`
    `function sortArray(ascending) {`
        `const input = document.getElementById('arrayInput').value;`
        `const array = input.split(',').map(num => parseFloat(num.trim()));`
        `if (array.some(isNaN)) {`
            `document.getElementById('result').textContent = 'Please enter valid numbers.';`
            `return;`
        `}`

        `for (let i = 0; i < array.length; i++) {`
            `for (let j = 0; j < array.length - i - 1; j++) {`
                `if ((ascending && array[j] > array[j + 1]) || (!ascending && array[j] < array[j + 1])) {`
                    `[array[j], array[j + 1]] = [array[j + 1], array[j]];`
                `}`
            `}`
        `}`

        `const order = ascending ? 'ascending' : 'descending';`
```

```
        `document.getElementById('result').textContent = `Array sorted in ${order} order: ${array.join(', ')}`;`
    `}`
`</script>`
```

```
</body>

</html>
```

9)Event-Driven Background Color Changer Create a webpage with three buttons: "Red", "Green", and "Blue". When a user clicks on a button, change the background color of the page to the respective color.

```
<!DOCTYPE html>
<html lang="en">

<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Background Color Changer</title>
<style>
body {
font-family: Arial, sans-serif;
text-align: center;
padding: 20px;
}
```

```
    `.container {`
        `border: 1px solid #ccc;`
        `padding: 20px;`
        `border-radius: 8px;`
        `display: inline-block;`
    `}`

    `button {`
        `padding: 15px 30px;`
        `margin: 10px;`
        `font-size: 18px;`
        `cursor: pointer;`
    `}`
`</style>`
```

```
</head>

<body>
<div class="container">
<h1>Background Color Changer</h1>
<button onclick="changeColor('red')">Red</button>
<button onclick="changeColor('green')">Green</button>
<button onclick="changeColor('blue')">Blue</button>
<button onclick="changeColor('random')">Random</button>
</div>

 `<script>`
     `function changeColor(color) {`
         `if (color === 'random') {`
             `const randomColor = '#' + Math.floor(Math.random() *
 16777215).toString(16);`
             `document.body.style.backgroundColor = randomColor;`
         `} else {`
             `document.body.style.backgroundColor = color;`
         `}`
     `}`
 `</script>`

</body>

</html>

10)Dynamic Table Generator Create a function that takes user input for the number
of rows and columns and generates a table dynamically.
<!DOCTYPE html>
<html lang="en">

<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Dynamic Table Generator</title>
<style>
body {
font-family: Arial, sans-serif;
max-width: 600px;
margin: 20px auto;
```

```
padding: 20px;
text-align: center;
}
```

```
    `.container {`
        `border: 1px solid #ccc;`
        `padding: 20px;`
        `border-radius: 8px;`
    `}`

    `input {`
        `padding: 8px;`
        `margin: 10px;`
        `width: 150px;`
    `}`

    `button {`
        `padding: 10px 20px;`
        `margin: 10px;`
        `cursor: pointer;`
    `}`

    `table {`
        `margin: 20px auto;`
        `border-collapse: collapse;`
    `}`

    `td,`
    `th {`
        `border: 1px solid #ccc;`
        `padding: 10px;`
    `}`
 `</style>`
```

```
</head>

<body>
<div class="container">
<h1>Dynamic Table Generator</h1>
<input type="number" id="rows" placeholder="Number of rows">
```

```
<input type="number" id="cols" placeholder="Number of columns">
<br>
<button onclick="generateTable()">Generate Table</button>
<div id="tableContainer"></div>
</div>
```

```
`<script>`
    `function generateTable() {`
        `const rows = parseInt(document.getElementById('rows').value);`
        `const cols = parseInt(document.getElementById('cols').value);`
        `const tableContainer = document.getElementById('tableContainer');`

        `if (isNaN(rows) || isNaN(cols) || rows <= 0 || cols <= 0) {`
            `tableContainer.innerHTML = 'Please enter valid numbers for rows
and columns.';`
            `return;`
        `}`

        `let table = '<table>';`
        `for (let r = 0; r < rows; r++) {`
            `table += '<tr>';`
            `for (let c = 0; c < cols; c++) {`
                `table += `<td>Row ${r + 1}, Col ${c + 1}</td>`;`
            `}`
            `table += '</tr>';`
        `}`
        `table += '</table>';`

        `tableContainer.innerHTML = table;`
    `}`
`</script>`
```

```
</body>

</html>
```

==JAVASCRIPT LAB-8==

```
1)Dynamic Table Creator
<!DOCTYPE html>
<html>
```

```
<head>
<title>Dynamic Table Generator</title>
<style>
table, th, td {
border: 1px solid black;
border-collapse: collapse;
padding: 10px;
}
</style>
</head>
<body>
<h2>Dynamic Table Generator</h2>
<label for="rows">Rows:</label>
<input type="number" id="rows" min="1" required>
<label for="columns">Columns:</label>
<input type="number" id="columns" min="1" required>
<button onclick="generateTable()">Generate Table</button>
<div id="tableContainer"></div>
```

```
``<script>``
    ``function generateTable() {``
        ``const rows = document.getElementById('rows').value;``
        ``const columns = document.getElementById('columns').value;``
        ``const tableContainer = document.getElementById('tableContainer');``
        ``tableContainer.innerHTML = ''; // Clear previous table``

        ``const table = document.createElement('table');``

        ``for (let i = 0; i < rows; i++) {``
            ``const tr = document.createElement('tr');``
            ``for (let j = 0; j < columns; j++) {``
                ``const td = document.createElement('td');``
                ``td.textContent = `Row ${i + 1} Col ${j + 1}`;``
                ``tr.appendChild(td);``
            ``}``
            ``const deleteRowBtn = document.createElement('button');``
            ``deleteRowBtn.textContent = 'Delete Row';``
            ``deleteRowBtn.onclick = () => tr.remove();``
            ``tr.appendChild(deleteRowBtn);``
            ``table.appendChild(tr);``
```

```
        ``}``

        ``const deleteColumnBtn = document.createElement('button');``
        ``deleteColumnBtn.textContent = 'Delete Last Column';``
        ``deleteColumnBtn.onclick = () => {``
            ``const rows = table.rows;``
            ``for (let i = 0; i < rows.length; i++) {``
                ``if (rows[i].cells.length > 0) {``
                    ``rows[i].deleteCell(-2); // Delete second last cell (last
 cell is delete button)``
                ``}``
            ``}``
        ``};``
        ``tableContainer.appendChild(table);``
        ``tableContainer.appendChild(deleteColumnBtn);``
    ``}``
 ``</script>``
```

```
</body>
</html>
```

2)Form Validation with Live Feedback

```
<!DOCTYPE html>
<html>
<head>
<title>Sign-Up Form with Validation</title>
<style>
.valid {
border: 2px solid green;
}
.invalid {
border: 2px solid red;
}
.error-message {
color: red;
font-size: 12px;
}
</style>
</head>
<body>
<h2>Sign-Up Form</h2>
```

```
<form id="signupForm">
<label for="name">Name:</label>
<input type="text" id="name" required>
<span id="nameError" class="error-message"></span>
<br>
<label for="email">Email:</label>
<input type="email" id="email" required>
<span id="emailError" class="error-message"></span>
<br>
<label for="password">Password:</label>
<input type="password" id="password" required>
<span id="passwordError" class="error-message"></span>
<br>
<button type="submit">Sign Up</button>
</form>
```

```
``<script>``
    ``document.getElementById('name').addEventListener('input', function ()
{``
        ``const name = this.value;``
        ``const nameError = document.getElementById('nameError');``
        ``if (name.trim() === '') {``
            ``nameError.textContent = 'Name must not be empty.';``
            ``this.classList.add('invalid');``
            ``this.classList.remove('valid');``
        ``} else {``
            ``nameError.textContent = '';``
            ``this.classList.add('valid');``
            ``this.classList.remove('invalid');``
        ``}``
    ``});``

    ``document.getElementById('email').addEventListener('input', function ()
{``
        ``const email = this.value;``
        ``const emailError = document.getElementById('emailError');``
        ``const emailPattern = /^[a-zA-Z0-9._-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]
{2,6}$/;``
        ``if (!emailPattern.test(email)) {``
            ``emailError.textContent = 'Email must be a valid format.';``
```

```
            ``this.classList.add('invalid');``
            ``this.classList.remove('valid');``
        ``} else {``
            ``emailError.textContent = '';``
            ``this.classList.add('valid');``
            ``this.classList.remove('invalid');``
        ``}``
    ``});``

    ``document.getElementById('password').addEventListener('input', function
() {``
        ``const password = this.value;``
        ``const passwordError = document.getElementById('passwordError');``
        ``const passwordPattern = /^(?=.*[A-Z])(?=.*\d).{8,}$/;``
        ``if (!passwordPattern.test(password)) {``
            ``passwordError.textContent = 'Password must be at least 8
characters with 1 uppercase & 1 number.';``
            ``this.classList.add('invalid');``
            ``this.classList.remove('valid');``
        ``} else {``
            ``passwordError.textContent = '';``
            ``this.classList.add('valid');``
            ``this.classList.remove('invalid');``
        ``}``
    ``});``

    ``document.getElementById('signupForm').addEventListener('submit',
function (event) {``
        ``event.preventDefault();``
    ``});``
``</script>``
```

```
</body>
</html>
```

3)Image Carousel (Slider)

```
<html>
<head>
<title>Image Carousel (Slider)</title>
<style>
#carousel {
```

```
position: relative;
width: 800px;
height: 600px;
}
#carousel img {
position: absolute;
top: 0;
left: 0;
width: 100%;
height: 100%;
display: none;
}
#carousel img.active {
display: block;
}
#next, #prev {
position: absolute;
top: 50%;
transform: translateY(-50%);
font-size: 24px;
cursor: pointer;
}
#next {
right: 0;
}
#prev {
left: 0;
}
</style>
</head>
<body>
<div id="carousel">
<img src="image1.jpg" class="active">
<img src="image2.jpg">
<img src="image3.jpg">
<span id="next">&#10095;</span>
<span id="prev">&#10094;</span>
</div>
```

```
 ``<script>``
    ``let currentImage = 0;``
    ``const images = document.querySelectorAll('#carousel img');``
    ``const nextButton = document.getElementById('next');``
    ``const prevButton = document.getElementById('prev');``

    ``nextButton.addEventListener('click', () => {``
        ``images[currentImage].classList.remove('active');``
        ``currentImage = (currentImage + 1) % images.length;``
        ``images[currentImage].classList.add('active');``
    ``});``

    ``prevButton.addEventListener('click', () => {``
        ``images[currentImage].classList.remove('active');``
        ``currentImage = (currentImage - 1 + images.length) % images.length;``
        ``images[currentImage].classList.add('active');``
    ``});``

    ``setInterval(() => {``
        ``images[currentImage].classList.remove('active');``
        ``currentImage = (currentImage + 1) % images.length;``
        ``images[currentImage].classList.add('active');``
    ``}, 3000);``
 ``</script>``
```

```
</body>
</html>
```

4)Show/Hide Password Toggle

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>show/hide password</title>
</head>
<body>
<h1>show/hide password</h1>
<label for="password">password:</label>
<input type="password" id="password" name="password">
```

```
<label for="showPassword">show password</label>
<input type="checkbox" id="showPassword">
<script>
const passwordField = document.getElementById('password');
const showPasswordCheckbox = document.getElementById('showPassword');
showPasswordCheckbox.addEventListener('change', function() {
if (showPasswordCheckbox.checked) {
passwordField.type = 'text';
} else {
passwordField.type = 'password';
}
});
</script>
</body>
</html>

5)Word Counter in a Textarea
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Word Counter</title>

  <style>

    .highlight {

      background-color: yellow;

    }

  </style>

</head>

<body>

  <h1>Word Counter</h1>
```

```
  <textarea id="textArea" rows="10" cols="50" placeholder="Start typing...">
</textarea>

  <p>Word Count: <span id="wordCount">0</span></p>

  <script>

    const textArea = document.getElementById('textArea');

    const wordCountDisplay = document.getElementById('wordCount');

    textArea.addEventListener('input', () => {

      const text = textArea.value;

      const words = text.trim().split(/\s+/);

      const wordCount = text.trim() === '' ? 0 : words.length;

      wordCountDisplay.textContent = wordCount;

      // Highlight repeated words

      const wordOccurrences = {};

      let highlightedText = text.replace(/\w+/g, (word) => {

        const lowerCaseWord = word.toLowerCase();

        if (wordOccurrences[lowerCaseWord]) {

          wordOccurrences[lowerCaseWord]++;

          return `<span class="highlight">${word}</span>`;

        } else {

          wordOccurrences[lowerCaseWord] = 1;

          return word;

        }

      });

      textArea.innerHTML = highlightedText;

    });
```

```
  </script>

</body>

</html>
6)Digital Clock using JavaScript
<!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 style="font-family: Arial, sans-serif; text-align: center; padding: 50px;">

  `<h1 id="clock"></h1>`
  `<button onclick="toggleFormat()">Toggle 12/24 Hour</button>`

  `<script>`
      `let is24HourFormat = true;`

      `function updateClock() {`
          `let now = new Date();`
          `let hours = now.getHours();`
          `let minutes = now.getMinutes();`
          `let seconds = now.getSeconds();`

          `if (!is24HourFormat) {`
              `hours = hours % 12 || 12;`
          `}`

          `minutes = minutes < 10 ? '0' + minutes : minutes;`
          `seconds = seconds < 10 ? '0' + seconds : seconds;`

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

      `function toggleFormat() {`
          `is24HourFormat = !is24HourFormat;`
      `}`
```

```
    `setInterval(updateClock, 1000);`
    `updateClock();`
 `</script>`
```

```
</body>
</html>
```

7)Detect Key Pressed

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Detect Key Pressed</title>
</head>
<body>
<span id="key-pressed"></span>
```

```
 `<script>`
    `const keyPressedSpan = document.getElementById('key-pressed');`

    `document.addEventListener('keydown', (event) => {`
        `keyPressedSpan.textContent = `You pressed: ${event.key}`;`
    `});`
 `</script>`
```

```
</body>
</html>
```

8)Rock, Paper, Scissors Game

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Rock, Paper, Scissors Game</title>
</head>
<body>
<button id="rock-button">Rock</button>
<button id="paper-button">Paper</button>
```

```
<button id="scissors-button">Scissors</button>
<span id="result"></span>
```

```
`<script>`
    `const rockButton = document.getElementById('rock-button');`
    `const paperButton = document.getElementById('paper-button');`
    `const scissorsButton = document.getElementById('scissors-button');`
    `const resultSpan = document.getElementById('result');`

    `const choices = ['rock', 'paper', 'scissors'];`

    `rockButton.addEventListener('click', () => {`
        `playGame('rock');`
    `});`

    `paperButton.addEventListener('click', () => {`
        `playGame('paper');`
    `});`

    `scissorsButton.addEventListener('click', () => {`
        `playGame('scissors');`
    `});`

    `function playGame(userChoice) {`
        `const computerChoice = choices[Math.floor(Math.random() *
choices.length)];`
        `let result;`

        `if (userChoice === computerChoice) {`
            `result = 'It\'s a tie!';`
        `} else if ((userChoice === 'rock' && computerChoice === 'scissors')
||`
                  `(userChoice === 'paper' && computerChoice === 'rock') ||`
                  `(userChoice === 'scissors' && computerChoice === 'paper'))
{`
            `result = `You win! ${userChoice} beats ${computerChoice}`;`
        `} else {`
            `result = `You lose! ${computerChoice} beats ${userChoice}`;`
        `}`
```

```
        `resultSpan.textContent = result;`
    `}`
`</script>`
```

```
</body>
</html>
```

9)Countdown Timer

```
<!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>
<input type="number" id="seconds" name="seconds">
<button id="start-button">Start</button>
<span id="countdown"></span>
```

```
`<script>`
    `const secondsInput = document.getElementById('seconds');`
    `const startButton = document.getElementById('start-button');`
    `const countdownSpan = document.getElementById('countdown');`

    `startButton.addEventListener('click', () => {`
        `const seconds = parseInt(secondsInput.value);`
        `let intervalId;`

        `function updateCountdown() {`
            `if (seconds > 0) {`
                `countdownSpan.textContent = `Countdown: ${seconds}`;`
                `secondsInput.value = seconds - 1;`
            `} else {`
                `countdownSpan.textContent = 'Countdown finished!';`
                `clearInterval(intervalId);`
            `}`
        `}`

        `intervalId = setInterval(updateCountdown, 1000);`
```

```
    `});`
`</script>`
```

```
</body>
</html>
10 )Dynamic Font Size Adjuster
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Dynamic Font Size Adjuster</title>
</head>
<body>
<p id="paragraph">Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</p>
<button id="increase-font-size">Increase Font Size</button>
<button id="decrease-font-size">Decrease Font Size</button>
```

```
`<script>`
    `const paragraph = document.getElementById('paragraph');`
    `const increaseFontSizeButton = document.getElementById('increase-font-size');`
    `const decreaseFontSizeButton = document.getElementById('decrease-font-size');`

    `let fontSize = 16;`

    `increaseFontSizeButton.addEventListener('click', () => {`
        `fontSize += 2;`
        `paragraph.style.fontSize = `${fontSize}px`;`
    `});`

    `decreaseFontSizeButton.addEventListener('click', () => {`
        `fontSize -= 2;`
        `paragraph.style.fontSize = `${fontSize}px`;`
    `});`
`</script>`
```

```
</body>
</html>

# <!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Dynamic Font Size Adjuster</title>
</head>
<body>
<p id="paragraph">Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</p>
<button id="increase-font-size">Increase Font Size</button>
<button id="decrease-font-size">Decrease Font Size</button>

 `<script>`
     `const paragraph = document.getElementById('paragraph');`
     `const increaseFontSizeButton = document.getElementById('increase-font-
 size');`
     `const decreaseFontSizeButton = document.getElementById('decrease-font-
 size');`

     `let fontSize = 16;`

     `increaseFontSizeButton.addEventListener('click', () => {`
         `fontSize += 2;`
         `paragraph.style.fontSize = `${fontSize}px`;`
     `});`

     `decreaseFontSizeButton.addEventListener('click', () => {`
         `fontSize -= 2;`
         `paragraph.style.fontSize = `${fontSize}px`;`
     `});`
 `</script>`

</body>
</html>

# ==JAVASCRIPT LAB-10==
1)<!DOCTYPE html>
```

```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Number Guessing Game</title>
</head>
<body>
  <h1>Number Guessing Game</h1>
  <input type="number" id="num" placeholder="Enter your guess (1-100)">
  <button onclick="func()">Guess</button>
  <p id="result"></p>
  <script>
    // Generate a random number between 1 and 100
    const num = Math.floor(Math.random() * 100) + 1;
    function func() {
      const n = Number(document.getElementById('num').value); // Convert input to
a number
      let result = document.getElementById('result');
      // If the input is not a number or out of range, prompt user
      if (isNaN(n) || n < 1 || n > 100) {
        result.textContent = "Please enter a valid number between 1 and 100!";
      } else if (n < num) {
        result.textContent = "Too low! Try again.";
      } else if (n > num) {
        result.textContent = "Too high! Try again.";
```

```
      } else {
        result.textContent = "Congratulations! You've guessed the number!";
      }
    }
  </script>
</body>
</html>
```

2-- External JavaScript File ◆ ◆ Create a webpage that has two buttons: "Red" and "Blue".

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Color Change with External JS</title>
</head>
<body>
<h1>Change Background Color</h1>
<button id="redButton">Red</button>
<button id="blueButton">Blue</button>

  `<!-- Link to external JavaScript file -->`
  `<script src="script.js"></script>`

</body>
</html>
```

js-

```
document.getElementById('redButton').addEventListener('click', function() {
document.body.style.backgroundColor = 'red';
});

document.getElementById('blueButton').addEventListener('click', function() {
document.body.style.backgroundColor = 'blue';
});
```

3)Radio Buttons & Checkboxes ◆ ◆ Build a pizza order form with Radio Buttons and Checkboxes.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q3</title>
</head>
<body>
<h1>Order your pizza</h1>
<h3>Select size</h3>
<label><input type="radio" name="size" value="Small"> Small</label><br>
<label><input type="radio" name="size" value="Medium"> Medium</label><br>
<label><input type="radio" name="size" value="Large"> Large</label><br>

`<h3>Select Toppings:</h3>`
`<label><input type="checkbox" name="topping" value="Cheese"> Cheese</label>
<br>`
`<label><input type="checkbox" name="topping" value="Pepperoni">
Pepperoni</label><br>`
`<label><input type="checkbox" name="topping" value="Mushrooms">
Mushrooms</label><br>`
`<label><input type="checkbox" name="topping" value="Olives"> Olives</label>
<br>`

`<button onclick="submitOrder()">Submit Order</button>`
`<h3>Order Summary:</h3>`
`<p id="orderSummary"></p>`
`<script>`
    `function submitOrder() {`
        `let size = document.querySelector('input[name="size"]:checked');`
        `let toppings =
document.querySelectorAll('input[name="topping"]:checked');`
        `let toppingsList = Array.from(toppings).map(topping =>
topping.value);`
        `if (!size) {`
            `document.getElementById("orderSummary").textContent = "Please
select a pizza size.";`
            `return;`
```

```
        `}`
        `let summary = `You ordered a ${size.value} pizza with `;`
        `summary += toppingsList.length > 0 ? toppingsList.join(", ") : "no
 toppings.";`
        `document.getElementById("orderSummary").textContent = summary;`
    `}`

 `</script>`
```

```
</body>
</html>
```

4)for Loop & fieldset/legend Elements ◆ ◆ Create a dynamic multiplication table generator.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q4</title>
</head>
<body>
<fieldset>
<legend>Multiplication Table</legend>
<label for="numberInput">Enter a number:</label>
<input type="number" id="numberInput">
<button onclick="generateTable()">Generate</button>
</fieldset>
```

```
 `<h3>Result:</h3>`
 `<table id="resultTable" border="1"></table>`

 `<script>`
    `function generateTable() {`
        `let num = document.getElementById("numberInput").value;`
        `let table = document.getElementById("resultTable");`
        `table.innerHTML = "";`
        `for (let i = 1; i <= 10; i++) {`
            `let row = table.insertRow();`
            `row.insertCell(0).textContent = `${num} × ${i}`;`
```

```
            `row.insertCell(1).textContent = num * i;`
        `}`
    `}`
 `</script>`
```

```
</body>
</html>
```

5)Manipulating CSS with JavaScript ◆ ◆ Create an interactive theme switcher

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q5</title>
</head>
<body style="transition: 0.3s;">
<h2>Theme Switcher</h2>
<button onclick="setDarkMode()">Dark Mode</button>
<button onclick="setLightMode()">Light Mode</button>
```

```
 `<script>`
    `function setDarkMode() {`
        `document.body.style.backgroundColor = "#222";`
        `document.body.style.color = "white";`
    `}`

    `function setLightMode() {`
        `document.body.style.backgroundColor = "white";`
        `document.body.style.color = "black";`
    `}`
 `</script>`
```

```
</body>
</html>
```

6)Using z-index to Stack Elements ◆ ◆ Create a layered image gallery using z-index.

```
<!DOCTYPE html>

<html lang="en">
```

```
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>q6</title>
  <style>
    #gallery {
      position: relative;
      width: 300px;
      height: 200px;
    }
    #gallery img {
      position: absolute;
      width: 100%;
      height: 100%;
      cursor: pointer;
      transition: transform 0.3s, z-index 0.3s;
    }
    #img1 { top: 0; left: 0; z-index: 1; }
    #img2 { top: 40px; left: 40px; z-index: 2; }
    #img3 { top: 80px; left: 80px; z-index: 3; }
  </style>
</head>
<body>
  <h2>Layered Image Gallery</h2>
```

```
  <div id="gallery">

    <img
src="https://images.ctfassets.net/hrltx12pl8hq/28ECAQiPJZ78hxatLTa7Ts/2f695d869736
ae3b0de3e56ceaca3958/free-nature-images.jpg?fit=fill&w=1200&h=630" id="img1"
style="z-index: 1;" onclick="bringToFront(this)">

    <img
src="https://static.vecteezy.com/system/resources/thumbnails/036/324/708/small/ai-
generated-picture-of-a-tiger-walking-in-the-forest-photo.jpg" id="img2" style="z-
index: 2;" onclick="bringToFront(this)">

    <img src="https://static.vecteezy.com/vite/assets/photo-masthead-375-
BoK_p8LG.webp" id="img3" style="z-index: 3;" onclick="bringToFront(this)">

  </div>

  <script>

    function bringToFront(img) {

      let maxZ = Math.max(...Array.from(document.querySelectorAll("#gallery
img")).map(i => parseInt(i.style.zIndex || 0)));

      img.style.zIndex = maxZ + 1;

    }

  </script>

</body>

</html>
```

7)Textarea Controls • • Create a live word and character counter for a textarea input

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q7</title>
</head>
<body>
<h2>Live Word & Character Counter</h2>
```

<textarea id="textInput" rows="6" cols="50" oninput="updateCount()"></textarea>
Characters: 0 | Words: 0

```
`<script>`
    `function updateCount() {`
        `let text = document.getElementById("textInput").value;`
        `let charCount = text.length;`
        `let wordCount = text.trim() === "" ? 0 :
text.trim().split(/\s+/).length;`

        `document.getElementById("charCount").textContent = charCount;`
        `document.getElementById("wordCount").textContent = wordCount;`

        `if (charCount > 200) {`
            `alert("Character limit exceeded! (200 max)");`
        `}`
    `}`
`</script>`
```

</body>
</html>
8)Pull-Down Menus & List Boxes • • Create a country-state selection dropdown.
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q8</title>
</head>
<body>
<h2>Country & State Selection</h2>

```
`<label for="country">Select Country:</label>`
`<select id="country" onchange="updateStates()">`
    `<option value="">-- Select Country --</option>`
    `<option value="USA">USA</option>`
    `<option value="India">India</option>`
    `<option value="UK">UK</option>`
`</select>`
```

```
  `<label for="state">Select State:</label>`
  `<select id="state">`
      `<option value="">-- Select State --</option>`
  `</select>`

  `<script>`
      `const states = {`
          `USA: ["California", "Texas", "New York"],`
          `India: ["Maharashtra", "Karnataka", "Delhi"],`
          `UK: ["England", "Scotland", "Wales"]`
      `};`

      `function updateStates() {`
          `let country = document.getElementById("country").value;`
          `let stateDropdown = document.getElementById("state");`
          `stateDropdown.innerHTML = '<option value="">-- Select State --
  </option>';`

          `if (country && states[country]) {`
              `states[country].forEach(state => {`
                  `let option = document.createElement("option");`
                  `option.value = state;`
                  `option.textContent = state;`
                  `stateDropdown.appendChild(option);`
              `});`
          `}`
      `}`
  `</script>`
```

```
</body>
</html>
```

9)Canvas and Drawing ◆ ◆ Create a simple drawing app using HTML5 Canvas.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q9</title>
<style>
```

```
canvas { border: 2px solid black; cursor: crosshair; }
.controls { margin: 10px; }
</style>
</head>
<body>
<h2>Simple Drawing App</h2>
<div class="controls">
<label for="color">Color:</label>
<input type="color" id="color" value="#000000">
<label for="size">Brush Size:</label>
<input type="number" id="size" value="5" min="1" max="50">
<button onclick="clearCanvas()">Clear Canvas</button>
</div>
<canvas id="drawingCanvas" width="600" height="400"></canvas>
```

```
`<script>`
    `let canvas = document.getElementById("drawingCanvas");`
    `let ctx = canvas.getContext("2d");`
    `let drawing = false;`

    `function startDraw(event) {`
        `drawing = true;`
        `draw(event);`
    `}`

    `function endDraw() {`
        `drawing = false;`
        `ctx.beginPath();`
    `}`

    `function draw(event) {`
        `if (!drawing) return;`
        `ctx.lineWidth = document.getElementById("size").value;`
        `ctx.lineCap = "round";`
        `ctx.strokeStyle = document.getElementById("color").value;`

        `let rect = canvas.getBoundingClientRect();`
        `let x = event.clientX - rect.left;`
        `let y = event.clientY - rect.top;`
```

```
        `ctx.lineTo(x, y);`
        `ctx.stroke();`
        `ctx.beginPath();`
        `ctx.moveTo(x, y);`
    `}`

    `function clearCanvas() {`
        `ctx.clearRect(0, 0, canvas.width, canvas.height);`
    `}`

    `canvas.addEventListener("mousedown", startDraw);`
    `canvas.addEventListener("mouseup", endDraw);`
    `canvas.addEventListener("mousemove", draw);`
 `</script>`
```

```
</body>
</html>
```

10)Event Handlers & Listeners ✅ ✅ Create an interactive "To-Do List" with event listeners.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>q10</title>
</head>
<body>
<h2>To-Do List</h2>
<input type="text" id="todoInput" placeholder="Enter a task">
<button id="addBtn">Add</button>
<ul id="todoList"></ul>
<script>
document.getElementById("addBtn").addEventListener("click", function() {
let input = document.getElementById("todoInput");
let task = input.value.trim();
if (task === "") return;
```

```
        `let li = document.createElement("li");`
        `li.textContent = task;`
```

```
        `let removeBtn = document.createElement("button");`
        `removeBtn.textContent = "Remove";`
        `removeBtn.addEventListener("click", function() {`
            `li.remove();`
        `});`

        `li.appendChild(removeBtn);`
        `document.getElementById("todoList").appendChild(li);`
        `input.value = "";`
    `});`
 `</script>`
```

```
</body>
</html>
```