Exp no:1

/\*HTML CODE\*/

<!DOCTYPE html>

<html lang="en">

<head>

<title>Area Computation</title>

<script type="text/javascript" src="exp1.js"></script>

</head>

<body>

<h2>Area of rectangle</h2>

<label for="length">Enter Length</label>

<input type="number" name="length" id="rectLen">

<label for="breadth">Enter Breadth</label>

<input type="number" name="breadth" id="rectBre">

<button type="submit" onclick="areaOfRectangle()">calculateArea</button>

<h4 id="rectarea" style="color: red">Area of rectangle is: ?</h4>

<h2>Area of triangle</h2>

<label for="base">Enter Base</label>

<input type="number" name="base" id="triBase">

<label for="height">Enter Height</label>

<input type="number" name="height" id="triHei">

<button type="submit" onclick="areaOfTriangle()">computeArea</button>

<h4 id="triarea" style="color: red">Area of triangle is: ?</h4>

<h2>Area of Circle</h2>

<label>Enter radius</label>

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

<button type="submit" onclick="areaOfCircle()">computeArea</button>

<h4 id="circlearea" style="color: red">Area of circle is: ?</h4>

</body>

</html>

//JS CODE

function areaOfRectangle() {

var a = parseFloat(document.getElementById('rectLen').value); var b = parseFloat(document.getElementById('rectBre').value); var area = a \* b;

document.getElementById("rectarea").innerHTML = "Area of rectangle is: " + area;

}

function areaOfTriangle() {

var a = parseFloat(document.getElementById('triBase').value); var b = parseFloat(document.getElementById('triHei').value); var area = 0.5 \* a \* b;

document.getElementById("triarea").innerHTML = "Area of triangle is: " + area;

}

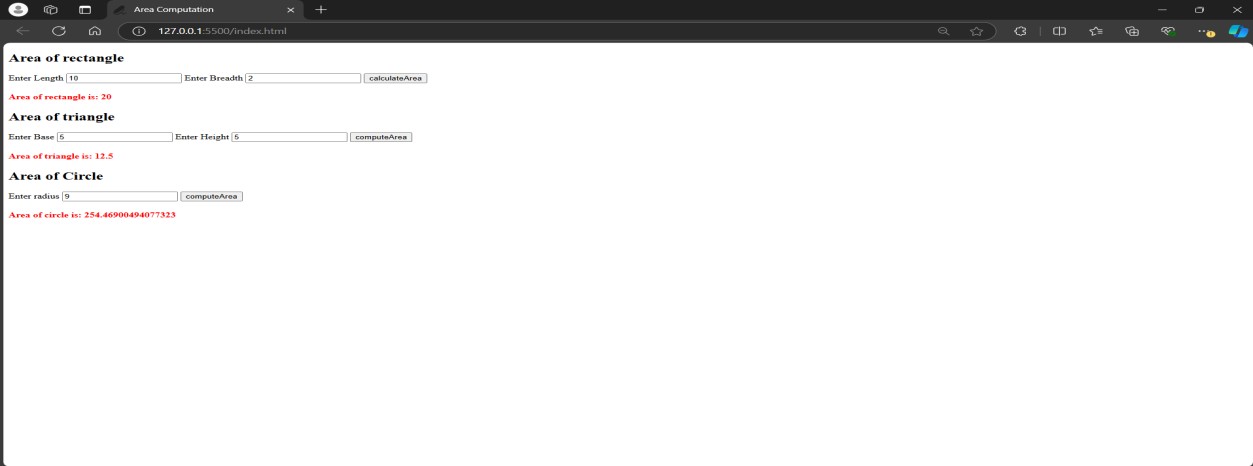
function areaOfCircle() {

var r = parseFloat(document.getElementById('radius').value); var area = Math.PI \* r \* r;

document.getElementById("circlearea").innerHTML = "Area of circle is: " + area;

}

Output



EXP NO 2:

//CODE

<!DOCTYPE html>

<html>

<head>

<title>First multiplication table</title>

<script type="text/javascript"> function mul(abc) {

for (var i = 1; i <= 10; i++) { var pqr = i \* abc;

console.log(i + " X " + abc + " = " + pqr); document.write("<br>");

document.write(i + " X " + abc + " = " + pqr);

}

}

</script>

</head>

<body>

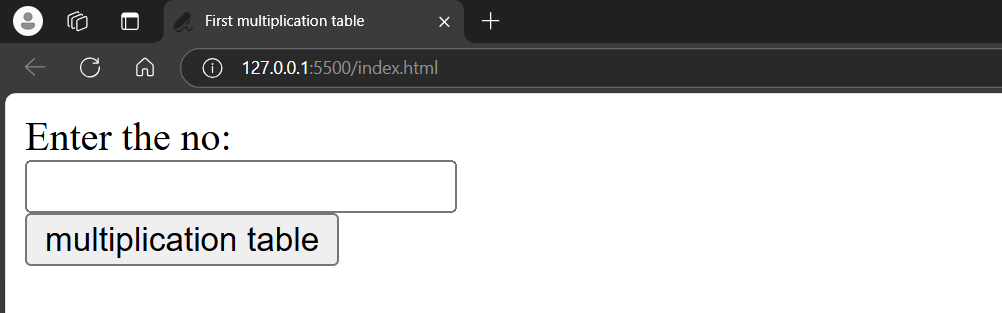
<label for="text">Enter the no:</label><br>

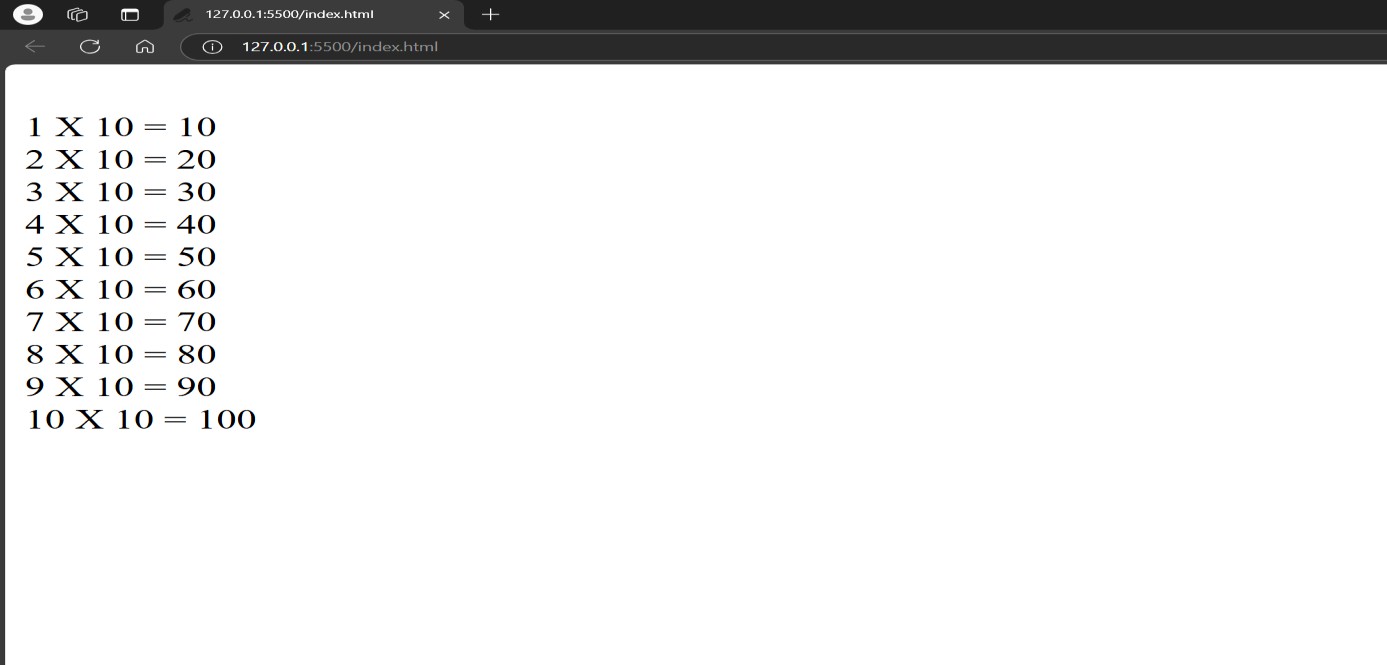
<input type="number" id="no1"><br>

<button onclick="mul(no1.value)">multiplication table</button>

</body>

</html> Output:





EXP NO: 3

//CODE :

<!DOCTYPE html>

<lang="en">

<head>

<title>String Operations</title>

</head>

<h1>String Operations</h1>

<br>

<label for="str">Enter the string </label>

<input type="text" name="str" id="str"/>

<h2>String Reversal using FOR Loop</h2>

<button type="submit" onclick="revStrUsingFor()">Reverse String</button>

<h4 style="color:red" id="revfor">Reverse string is? </h4>

<br>

<h2>String Reversal using recursive function</h2>

<button type="submit" onclick="var x = revStrRecursive();

document.getElementById('revrec').innerHTML = 'Reverse string is: ' + x;">Reverse String</button>

<h4 style="color:red" id="revrec">Reverse string is? </h4>

<br>

<h2>String Reversal using in-built functions</h2>

<button type="submit" onclick="revStrInbuiltFunc()">Reverse String</button>

<h4 style="color:red" id="revinbuilt">Reverse string is? </h4>

<br>

<h2>String Palindrome</h2>

<button type="submit" onclick="strPalindrome()">Check String</button>

<h4 style="color:red" id="strPalin">Given string is? </h4>

<br>

<h2>Replace characters of string</h2>

<label for="match">Enter match/characters to be replaced from string:</label>

<input type="text" name="match" id="match"/>

<br>

<br>

<label for="pattern">Enter pattern/characters to be added into string:</label>

<input type="text" name="pattern" id="pattern"/>

<input type="text" name="pattern" id="pattern"/>

<br>

<br>

<button type="submit" onclick="strReplace()">Replace</button>

<h4 style="color:red" id="strrep">String replacement using replace() method: ? </h4>

<h4 style="color:red" id="strrepall">String replacement using replaceall() method: ?

</h4>

<Script type="text/javascript"> function revStrUsingFor() {

var str = document.getElementById('str').value; var revStr = "";

for (var i = str.length - 1; i >= 0; i--) { revStr += str[i];

}

document.getElementById('revfor').innerHTML = "Reverse string is: " + revStr;

}

function strRevRecursive(str) { if (str === '') {

return null;

} else if (str.length === 1) { return str;

} else {

return strRevRecursive(str.substr(1)) + str.charAt(0);

}

}

function revStrRecursive() {

var str = document.getElementById('str').value; var revStr = strRevRecursive(str);

document.getElementById("revrec").innerHTML = "Reverse string is: " + revStr;

}

function revStrInbuiltFunc() {

var str = document.getElementById('str').value; var splitString = str.split("");

var reverseArray = splitString.reverse(); var joinArray = reverseArray.join("");

//str.split("").reverse().join(""); //all in single line

document.getElementById("revinbuilt").innerHTML = "Reverse string is: " + joinArray;

}

function strReplace() {

var str = document.getElementById('str').value;

var match = document.getElementById('match').value; var pattern = document.getElementById('pattern').value; var newStr1 = str.replace(match, pattern);

var newStr2 = str.replaceAll(match, pattern);

document.getElementById("strrep").innerHTML = "String replacement using replace() method: " + newStr1;

document.getElementById("strrepall").innerHTML = "String replacement using replaceAll() method: " + newStr2;

}

function strPalindrome() {

var str = document.getElementById('str').value; var revStr = str.split("").reverse().join("");

if (str === revStr) {

document.getElementById("strPalin").innerHTML = "Given string is Palindrome";

} else {

document.getElementById("strPalin").innerHTML = "Sorry! Given string is not palindrome";

}

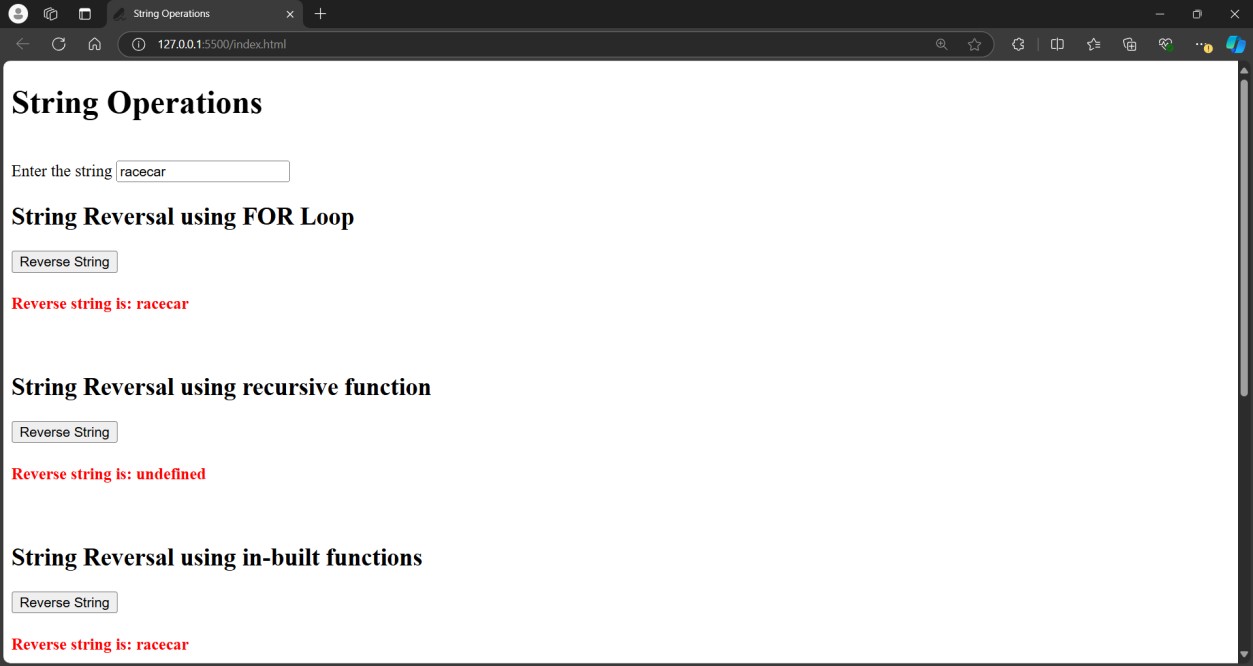
}

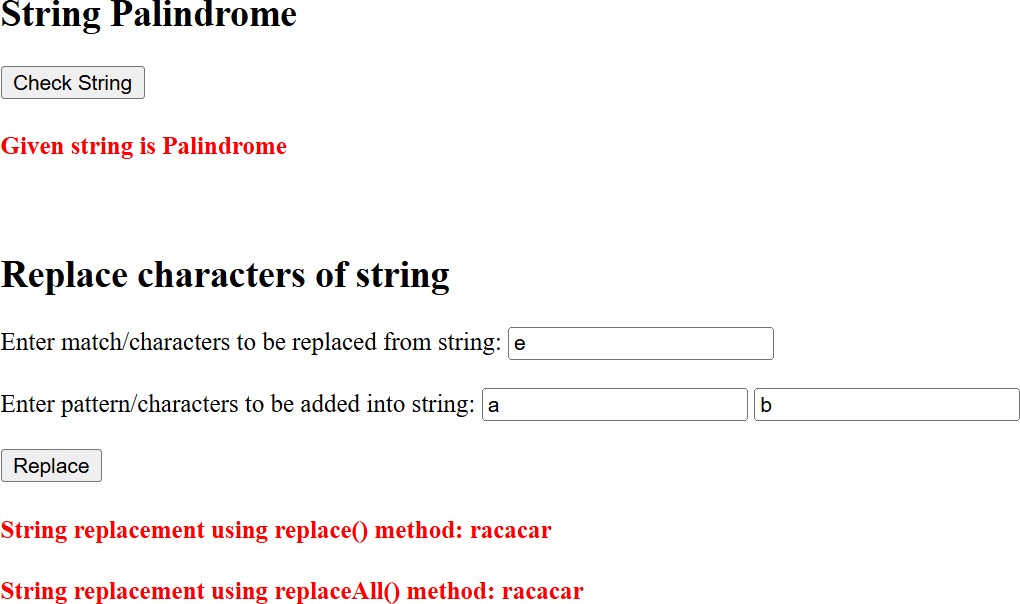
</Script>

</body>

</html>

//OUTPUT:





EXP NO:4

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>String Comparison</title>

</head>

<body>

<h1>String Comparison Using Various Methods</h1>

<p>Open the browser console to see the results of the string comparison.</p>

<script>

// Method 1: Using toUpperCase()

console.log("Method 1: Using toUpperCase()"); const string1a = 'JavaScript Program';

const string2a = 'javascript program';

const result1 = string1a.toUpperCase() === string2a.toUpperCase(); if(result1) {

console.log('The strings are similar.');

} else {

console.log('The strings are not similar.');

}

// Method 2: JS String Comparison Using RegEx console.log("\nMethod 2: Using RegEx");

const string1b = 'JavaScript Program'; const string2b = 'javascript program';

const pattern = new RegExp(string1b, "gi"); const result2 = pattern.test(string2b);

if(result2) {

console.log('The strings are similar.');

} else {

console.log('The strings are not similar.');

}

// Method 3: Using localeCompare() [Recommended Method] console.log("\nMethod 3: Using localeCompare()");

const string1c = 'JavaScript Program'; const string2c = 'javascript program';

const result3 = string1c.localeCompare(string2c, undefined, {sensitivity: 'base'}); if(result3 == 0) {

console.log('The strings are similar.');

} else {

console.log('The strings are not similar.');

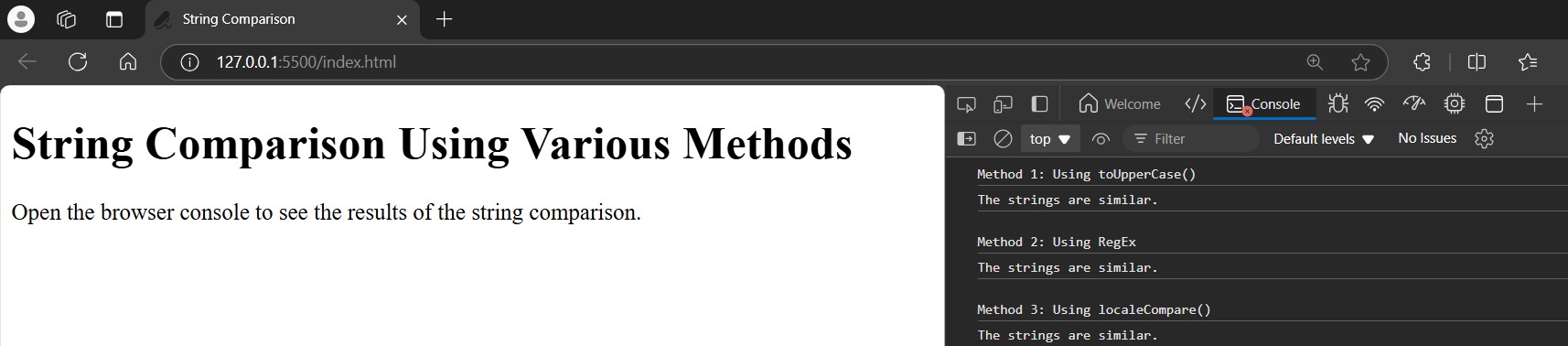
}

</script>

</body>

</html>

OUTPUT :



EXP NO: 5

<!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>

<p id="demo"></p>

<script>

// time to countdown from (in milliseconds)

let countDownDate = new Date().getTime() + 24 \* 60 \* 60 \* 1000;

// countdown timer

let x = setInterval(function() {

// get today's date and time in milliseconds let now = new Date().getTime();

// find the interval between now and the countdown time let timeLeft = countDownDate - now;

// time calculations for days, hours, minutes and seconds const days = Math.floor( timeLeft/(1000\*60\*60\*24) ); const hours = Math.floor( (timeLeft/(1000\*60\*60)) % 24 ); const minutes = Math.floor( (timeLeft/1000/60) % 60 ); const seconds = Math.floor( (timeLeft/1000) % 60 );

// display the result in the element with id="demo"

document.getElementById("demo").innerHTML = days + "d " + hours + "h "

+ minutes + "m " + seconds + "s ";

// clearing countdown when complete if (timeLeft < 0) {

clearInterval(x);

document.getElementById("demo").innerHTML = "Countdown Finished";

}

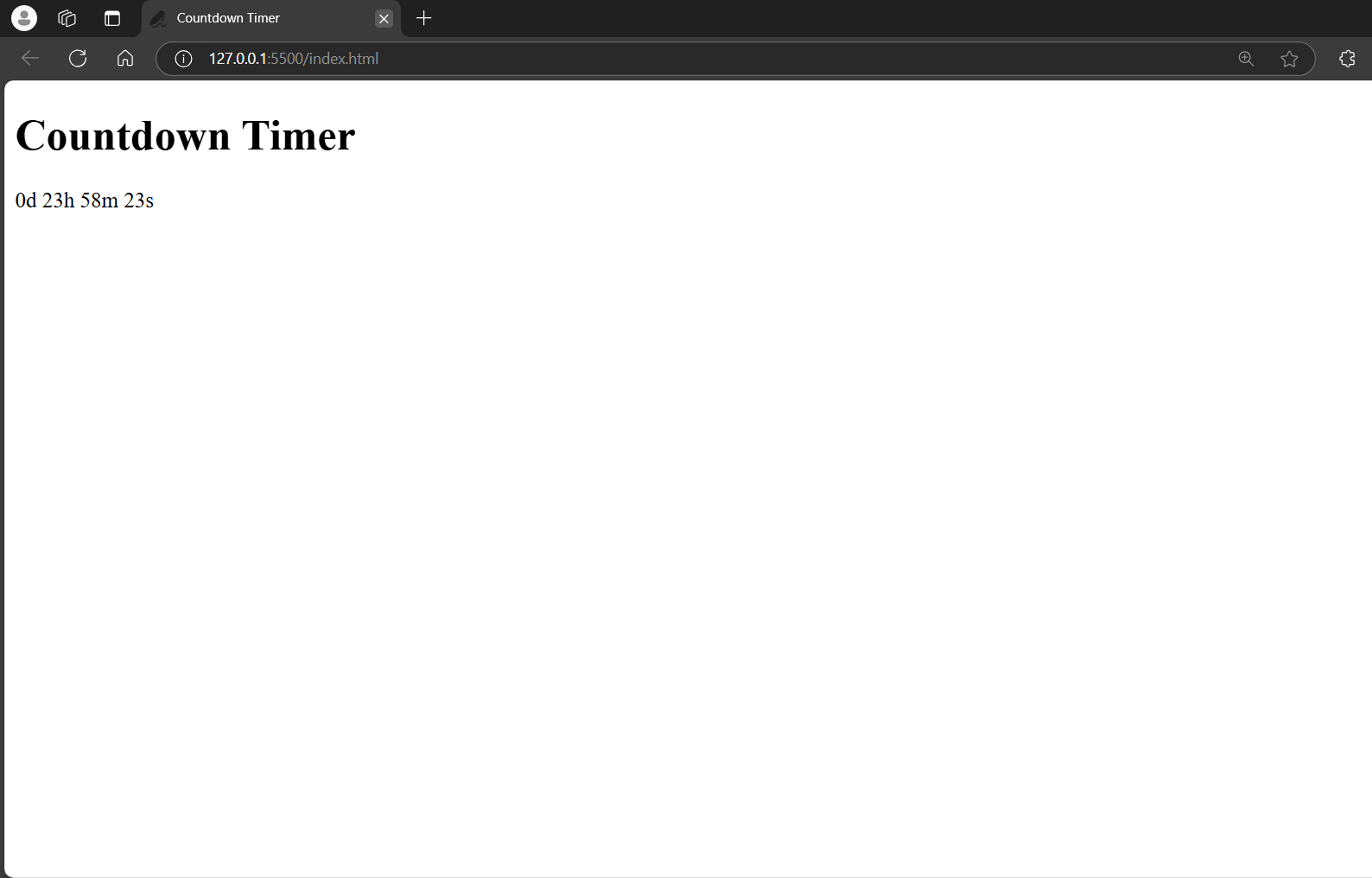
}, 1000); // update every second (1000 milliseconds)

</script>

</body>

</html>

//OUTPUT:



Exp No:8

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Set Operations</title>

</head>

<body>

<h1>Set Operations</h1>

<!-- Section for Union -->

<h3>Union of two sets</h3>

<p id="unionResult"></p>

<!-- Section for Intersection -->

<h3>Intersection of two sets</h3>

<p id="intersectionResult"></p>

<!-- Section for Difference -->

<h3> Difference of two sets</h3>

<p id="differenceResult"></p>

<script>

// Exp 8a: Perform union operation function union(a, b) {

let unionSet = new Set(a); for (let i of b) {

unionSet.add(i);

}

return unionSet;

}

// Exp 8b: Perform intersection operation function intersection(setA, setB) {

let intersectionSet = new Set();

for (let i of setB) { if (setA.has(i)) {

intersectionSet.add(i);

}

}

return intersectionSet;

}

// Exp 8c: Perform difference operation function difference(setA, setB) {

let differenceSet = new Set(setA); for (let i of setB) {

differenceSet.delete(i);

}

return differenceSet;

}

// Two sets of fruits

const setA = new Set(['apple', 'mango', 'orange']); const setB = new Set(['grapes', 'apple', 'banana']);

// Display union result

const unionResult = union(setA, setB);

document.getElementById('unionResult').innerText = `Union:

${Array.from(unionResult).join(', ')}`;

// Display intersection result

const intersectionResult = intersection(setA, setB);

document.getElementById('intersectionResult').innerText = `Intersection:

${Array.from(intersectionResult).join(', ')}`;

// Display difference result

const differenceResult = difference(setA, setB);

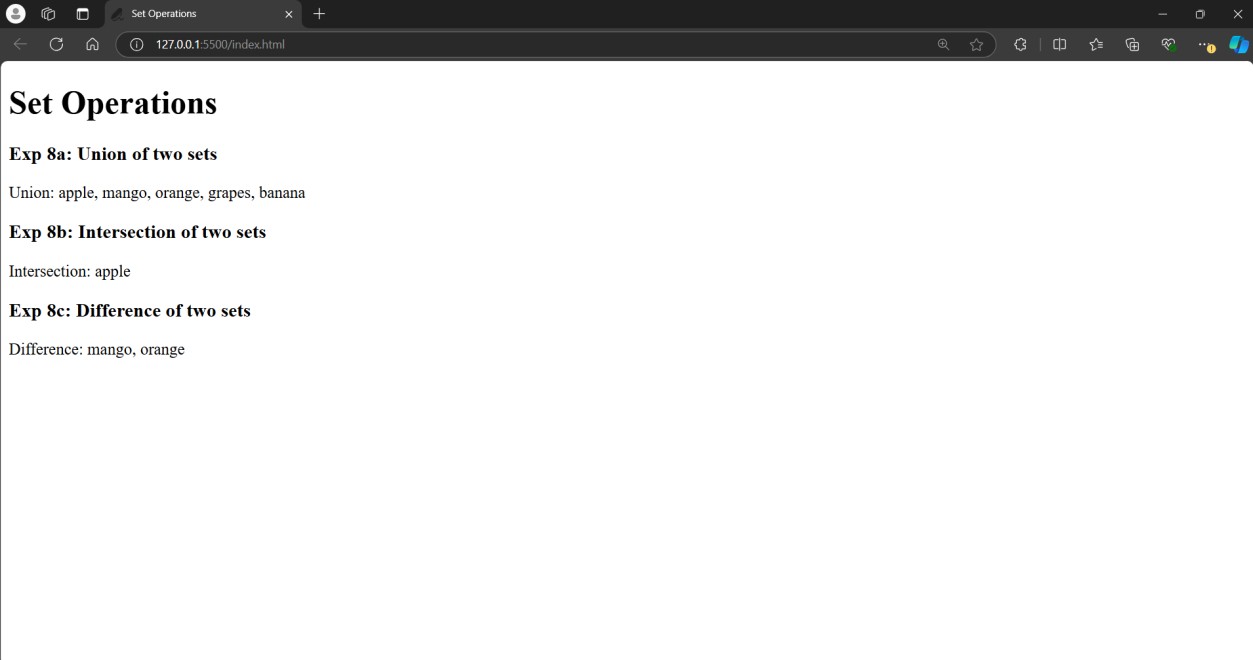
document.getElementById('differenceResult').innerText = `Difference:

${Array.from(differenceResult).join(', ')}`;

</script></body>

</html>

Output:



Exp no: 7b

Code:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Add Element to Array using Splice Method</title>

<style> body {

text-align: center;

font-family: Arial, sans-serif;

}

h1 {

color: green;

}

</style>

</head>

<body>

<h1>GeeksforGeeks</h1>

<p>Click the button to add new elements to the array.</p>

<!-- Button to trigger spliceFunction -->

<button onclick="spliceFunction()">Add Elements</button>

<!-- Display array here -->

<p id="geeks"></p>

<script>

// Initial array

var list = ["HTML", "CSS", "JavaScript"]

// Display the initial array

document.getElementById("geeks").innerHTML = list;

// Function to add new elements using splice function spliceFunction() {

list.splice(2, 0, "Angular", "SǪL"); // Add elements at index 2

document.getElementById("geeks").innerHTML = list; // Update display

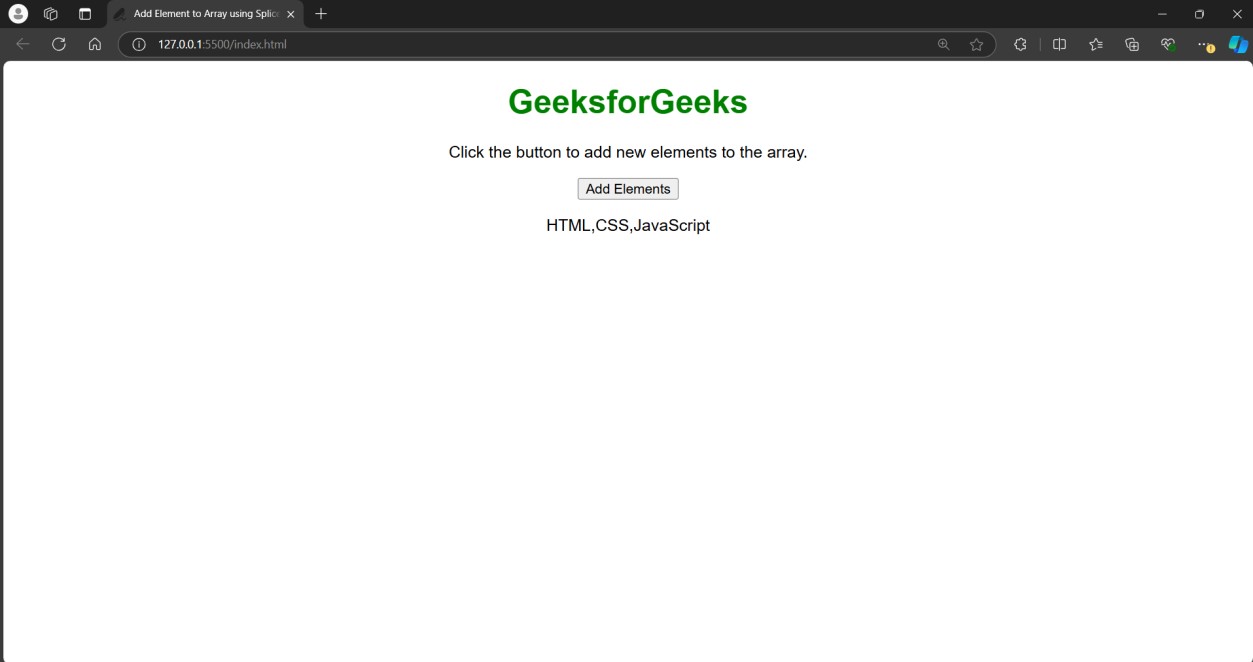
}

</script>

</body>

</html>

Output:



Exp No:7a

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Append Object to Array and Check if Object is an Array</title>

<style> body {

font-family: Arial, sans-serif; text-align: center;

}

h1 {

color: blue;

}

p {

font-size: 16px;

}

</style>

</head>

<body>

<h1>Append Object to Array and Check if Object is an Array</h1>

<!-- Sections to display results -->

<p><strong>Check if object is an array:</strong> <span id="checkObject"></span></p>

<p><strong>Array after inserting object:</strong> <span id="arrayResult"></span></p>

<script>

// Function to append an object to an array function insertObject(arr, obj) {

arr.push(obj); // Append object

document.getElementById('arrayResult').innerText = JSON.stringify(arr); // Display updated array

console.log(arr);

}

// Function to check if a variable is an array function checkObject(obj) {

const result = Array.isArray(obj); // Check if obj is an array if (result) {

document.getElementById('checkObject').innerText = `[${JSON.stringify(obj)}] is an array.`; // Display result

console.log(`[${obj}] is an array.`);

} else {

document.getElementById('checkObject').innerText = `${JSON.stringify(obj)} is not an array.`; // Display result

console.log(`${obj} is not an array.`);

}

}

// Original array let array = [1, 2, 3];

// Object to add

let object = {x: 12, y: 8};

// Check if object is an array checkObject(object);

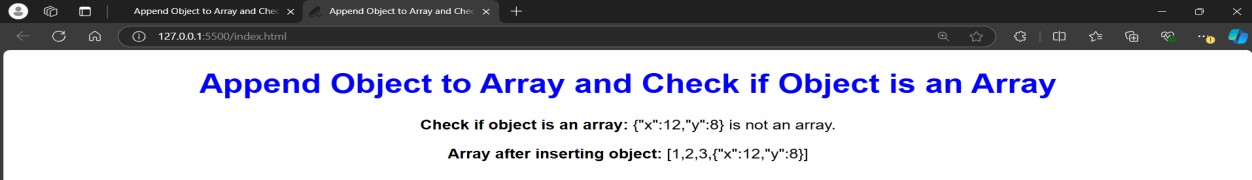
// Append object to array

insertObject(array, object);

</script>

</body>

</html>



Exp no: 6a

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Remove Array Element</title>

</head>

<body>

<h1>Remove Array Element Example</h1>

<p><strong>Original Array:</strong> [1, 2, 3, 4, 5]</p>

<p><strong>After removing 2:</strong> <span id="result1"></span></p>

<p><strong>Original Array:</strong> [2, 5, 9, 6]</p>

<p><strong>After removing 5:</strong> <span id="result2"></span></p>

<script>

// Function to remove an element by modifying the original array function remove\_array\_element(array, n) {

var index = array.indexOf(n); if (index > -1) {

array.splice(index, 1); // Remove element at index

}

return array;

}

// Function to remove an element and return a new array function removeItemFromArray(array, n) {

const newArray = [];

for (let i = 0; i < array.length; i++) { if (array[i] !== n) {

newArray.push(array[i]); // Push element if it's not equal to n

}

return newArray;

}

// Testing the functions and displaying the result

const result1 = removeItemFromArray([1, 2, 3, 4, 5], 2); // Using second method

const result2 = remove\_array\_element([2, 5, 9, 6], 5); // Using first method

// Display the results in the HTML

document.getElementById("result1").innerText = result1; document.getElementById("result2").innerText = result2;

</script>

</body>

</html>

Output :



Exp no: 6b

Code:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Array Manipulation</title>

</head>

<body>

<h1>Array Manipulation Experiments</h1>

<h2>Checking if an array contains a specified value</h2>

<p id="arrayCheckResult"></p>

<h2>Emptying an array using three methods</h2>

<p>Original array: [1, 2, 3]</p>

<p><strong>Method 1 (Substitution):</strong> <span id="method1Result"></span></p>

<p><strong>Method 2 (Splice):</strong> <span id="method2Result"></span></p>

<p><strong>Method 3 (Set length to 0):</strong> <span id="method3Result"></span></p>

<script>

// Exp 6b: Program to check if an array contains a specified value const array1 = ['you', 'will', 'learn', 'javascript'];

const hasValue = array1.includes('javascript');

const arrayCheckResult = document.getElementById('arrayCheckResult'); if (hasValue) {

arrayCheckResult.textContent = 'Array contains the value: "javascript".';

} else {

arrayCheckResult.textContent = 'Array does not contain the value.';

}

// Exp 6c: Program to empty an array using three methods

// Method 1: Substituting new array function emptyArrayBySubstitution(arr) {

arr = [];

return arr;

}

// Method 2: Using splice to remove all elements function emptyArrayBySplice(arr) {

arr.splice(0, arr.length); return arr;

}

// Method 3: Setting array length to 0 function emptyArrayByLength(arr) {

arr.length = 0; return arr;

}

const originalArray = [1, 2, 3];

// Method 1

const method1Array = [...originalArray]; // Clone the array to avoid modifying the original

const result1 = emptyArrayBySubstitution(method1Array);

document.getElementById('method1Result').textContent = `[${result1}]`;

// Method 2

const method2Array = [...originalArray];

const result2 = emptyArrayBySplice(method2Array);

document.getElementById('method2Result').textContent = `[${result2}]`;

// Method 3

const method3Array = [...originalArray];

const result3 = emptyArrayByLength(method3Array);

document.getElementById('method3Result').textContent = `[${result3}]`;

</script>

</body></html>

EXP No:9

Code :

//Experiment 9a: JavaScript program to change background color of Webpage On mouse over event

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Experiment-9</title>

<script src="Exp9.js">

</script>

</head>

<body>

<h1 id="head1" onmouseover="changeColor1()" onmouseout="changeColor2()"> Experiment-9</h1>

<h2> JavaScript program to change background color of Webpage On mouse over event</h2>

<p>We are using mousever Event to Change the Background Color</p>

</body>

</html>

Js Code:

function changeColor1() {

document.body.style.backgroundColor = "red";

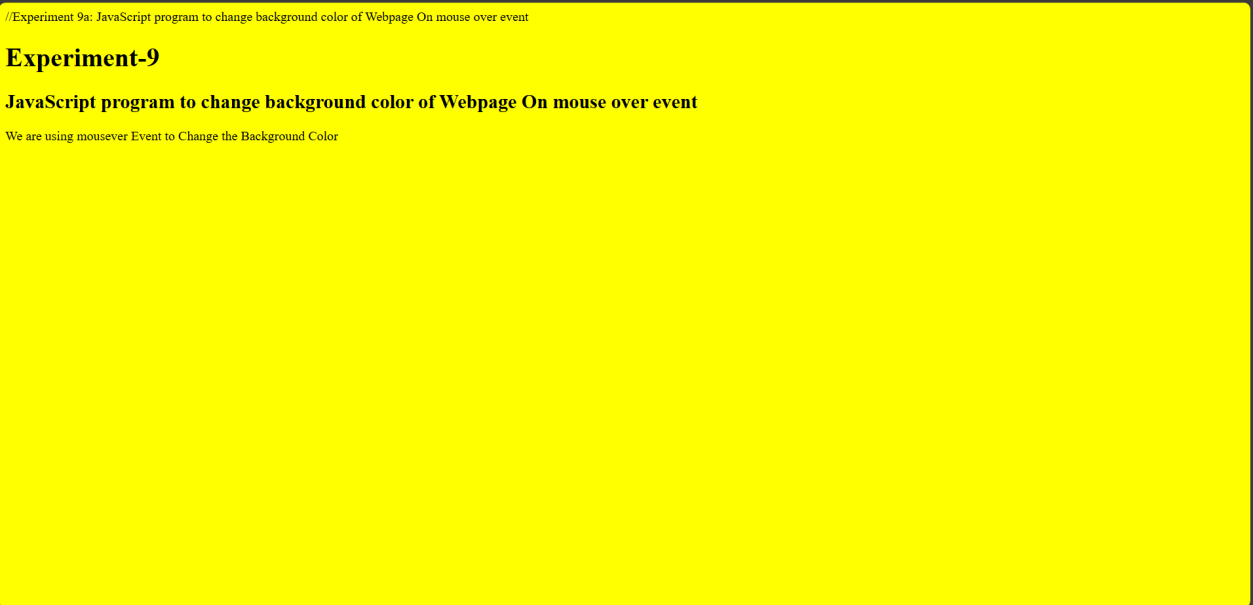
}

function changeColor2() {

document.body.style.backgroundColor = "yellow";

}

Output :



Exp no:9b

//Experimen-9b: Program to change Background color using onfocus event

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Experiment-9b</title>

</head>

<body>

<h1>Experimen-9b</h1>

<p> In this Program we are going to change the Background color of document when onfocus event is occured</p>

<h2>Student Information Form</h2>

<form id="myForm">

<label> Student Name: <input type="text" id="myInput"> </label>

</form>

</body>

<script src="Exp9b.js"></script>

</html> JS code:

var x = document.getElementById("myForm"); x.addEventListener("focus", myFocusFunction, true); x.addEventListener("blur", myBlurFunction, true); function myFocusFunction() {

document.getElementById("myInput").style.backgroundColor = "yellow";

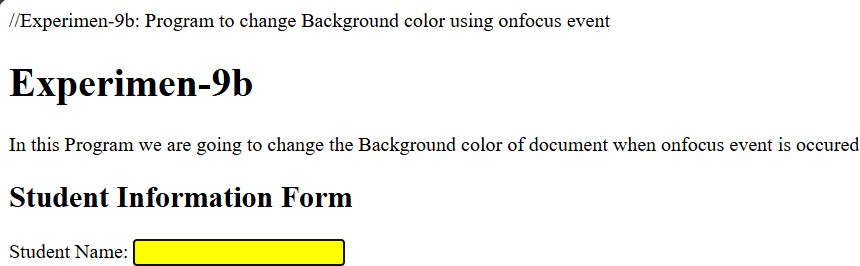
}

function myBlurFunction() {

document.getElementById("myInput").style.backgroundColor = "";

}

Output :



Exp no 10

Html code:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Document</title>

<script src="/Exp10a.js"></script>

</head>

<body>

<h1>Experiment-10</h1>

<h2>Form Validation Example</h2>

<br>

<h1>Sign Up Form</h1>

<form name="myForm" action="/thankyou.html" onsubmit="return validate()" >

<label for="fname"> First name</label>

<input type="text" id="fname" name="fname" placeholder="Enter First Name" required>

<label for="lname">Last Name</label>

<input type="text" id="lname" name="lname" placeholder="Enter Last Name" >

<br>

<br>

<label for="usremail">Email</label>

<input type="email" id="usremail" name="usremail" placeholder="Enter Email here"

>

<label for="usrpassword">Password</label>

<input type="password" id="usrpassword" name="usrpassword" placeholder="Enter

Password" >

<br>

<br>

<p>Gender ?</p>

<label for="male"> Male</label>

<input type="radio" id="male" name="option">

<label for="female"> Female </label>

<input type="radio" id="female" name="option">

<p></p>

<label for="usrmobile">Mobile Number</label>

<input type="text" id="usrmobile" name="usrmobile" placeholder="Mobile Number" required>

<p></p>

<input type="submit" name="" id="" value="submit">

</form>

</body>

</html>

JS code:

function validate() {

var firstName = document.myForm.fname.value; var lastName = document.myForm.lname.value;

var userpassword = document.myForm.usrpassword.value; var usrmobile = document.myForm.usrmobile.value;

console.log(firstName); console.log(lastName);

console.log(userpassword); console.log(usrmobile);

if (firstName == null || firstName == "" || firstName.length<3 ) { alert("First Name can't be blank or Less than 3 Charecter"); document.myForm.fname.focus();

return false;

}

if (lastName == null || lastName == "") { alert("Last Name can't be blank");

document.myForm.lname.focus(); return false;

}

if (userpassword.length < 6) {

alert("Password must be at least 6 characters long."); document.myForm.usrpassword.focus();

return false;

}

if (isNaN(usrmobile)) {

alert("Enter Numeric value only");

document.myForm.usrmobile.focus(); return false;

}

return true;

}

Output :

