**//Exp: 1**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <title>Calculation</title>

</head>

<body>

    <script src="cals.js"></script>

    <h1>Area of Rectangle</h1>

        <label for="userinput1">Enter length:</label><br>

        <input type="number"id="length"/><br>

        <label for="userinput2">Enter breadth:</label><br>

        <input type="number"id="breadth"/><br>

        <button type="button" onclick="arearect()">Print</button>

    <p id="output1"></p>

    <h1>Area of Triangle</h1>

        <label for="userinput3">Enter base:</label><br>

        <input type="number"id="base"/><br>

        <label for="userinput4">Enter height:</label><br>

        <input type="number"id="height"/><br>

        <button type="button" onclick="areatriangle()">Print</button>

    <p id="output2"></p>

    <h1>Area of Circle</h1>

        <label for="userinput5">Enter radius:</label><br>

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

        <button type="button" onclick="areacircle()">Print</button>

    <p id="output3"></p>

</body>

</html>

**#JAVASCRIPT**

function arearect(){

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

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

    var arearect = document.getElementById('output1');

    arearect.textContent= "Area of rectangle: "+ length\*breadth;

}

function areatriangle(){

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

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

    var areatri = document.getElementById('output2');

    areatri.textContent= "Area of triangle: "+ 0.5\*base\*height;

}

function areacircle(){

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

    var areacircle = document.getElementById('output3');

    areacircle.textContent= "Area of circle: "+ 3.1415\*radius\*radius;

}

**//Exp: 2**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <title>Multiplication Table</title>

    <script src="multi.js"></script>

</head>

<body>

    <h1>Multiplication Table</h1>

    <label for="num1">Enter start:</label>

    <input type="number" id="num1">

    <label for="num2">Enter end:</label>

    <input type="number" id="num2"><br>

    <button type="button" onclick="generateTable()">Click</button>

    <table style="width:45%;">

        <thead>

            <tr>

                <th></th>

            </tr>

        </thead>

        <tbody id="tablebody"></tbody>

        <p id="op"></p>

    </table>

</body>

</html>

**#JAVASCRIPT**

function generateTable(){

    var tableBody= document.getElementById("tablebody");

    var n1= parseInt(document.getElementById("num1").value);

    var n2= parseInt(document.getElementById("num2").value);

    var row = tableBody.insertRow(0);

    for(var j=0;j<n2;j++){

        if(n1<0 || n2<0){

            document.getElementById("op").innerHTML="Invalid.......!";

            break;

        }

        var temp=row.insertCell(j);

        for(var i =1;i<=10;i++){

            temp.innerHTML=temp.innerHTML+i\*n1+"<br>";

        }

        if(n1==n2){

            break;

        }

        n1++;

    }

}

**//Exp: 3**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>String Operation</title>

    <script src="strop.js"></script>

</head>

<body>

    <h1>String Operation</h1>

    <label for ="msg display">Enter String :</label>

    <input type = "text" id="str"><br><br>

    <button style="width: 130px;" onclick="disp()">Display</button>

    <button style="width: 130px;" onclick="strrev()">Reverse String</button><br>

    <button style="width: 130px;" onclick="charchange()">Character Change</button>

    <button style="width: 130px;" onclick="palindrome()">Check Palindrome</button><br><br>

    <output id ="op"></output>

</body>

</html>

**#JAVASCRIPT**

function disp(){

    var a1 = document.getElementById("str").value;

    document.getElementById("op").innerHTML = a1;

}

function strrev(){

    var a1 = document.getElementById("str").value;

    var len = a1.length;

    var arr = "";

    for(var i = len ; i>=0; i--){

        arr += a1.substring(0+i,1+i);

    }

    document.getElementById("op").innerHTML=arr;

}

function charchange(){

    var a1 = document.getElementById("str").value;

    var len = a1.length;

    var ele1 = prompt("Which character should be replaced :");

    var ele2 = prompt("Replacing character :");

    var arr = "";

    for(var i=0;i<len;i++){

        arr += a1.substring(0+i,1+i);

        if(ch == ele1){

            ch = ele2;

            arr += ch;

        }

        else{

            arr += ch;

        }

    }

    document.getElementById("op").innerHTML=arr;

}

function palindrome(){

    var a1 = document.getElementById("str").value;

    var arr = "";

    for(var i=a1.length;i>=0;i--){

        arr += a1.substring(0+i,1+i);

    }

        if(a1 == arr){

            document.getElementById("op").innerHTML="String is Palindrome";

        }

        else{

            document.getElementById("op").innerHTML="String is not Palindrome";

        }

}

**//Exp: 4**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <title>String Comparison.</title>

    <script src="Pract4.js"></script>

</head>

<body>

    <h1>String Comparison.</h1>

    <label for="msg display1">Enter first string :</label>

    <input type="text" id="str1"><br><br>

    <label for="msg display2">Enter second string :</label>

    <input type="text" id="str2"><br><br>

    <button style="width: 190px;" onclick="using\_operatr()">Using operator</button>

    <button style="width: 190px;" onclick="using\_localeComparefun()">Using builtin function</button>

    <button style="width: 190px;" onclick="using\_len()">Using length Comparison </button><br>

    <output id="op"></output>

</body>

</html>

**#JAVASCRIPT**

function using\_operatr() {

    let a1 = document.getElementById("str1").value;

    let a2 = document.getElementById("str2").value;

    if (a1 === a2) {

        document.getElementById("op").innerHTML = "Same strings";

    }

    else {

        document.getElementById("op").innerHTML = "Different strings";

    }

}

function using\_localeComparefun() {

    let a1 = document.getElementById("str1").value;

    let a2 = document.getElementById("str2").value;

    if ((a1.localeCompare(a2)) == 0) { //If similar string => returns 0

        document.getElementById("op").innerHTML = "Same strings";

    }

    else {

        document.getElementById("op").innerHTML = "Different strings";

    }

}

function using\_len() {

    let a1 = document.getElementById("str1").value;

    let a2 = document.getElementById("str2").value;

    let len1 = a1.length;

    let len2 = a2.length;

    if (len1 == len2) {

        for (var i = 0; i < len1; i++) {

            if ((a1.substring(i, 1 + i)) != (a2.substring(i, 1 + i))) {

                document.getElementById("op").innerHTML = "Different strings";

                break;

            }

            else {

                document.getElementById("op").innerHTML = "Same strings";

            }

        }

    }

    else {

        document.getElementById("op").innerHTML = "Different strings";

    }

}

**//Exp: 5**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Timer</title>

    <style>

        p {

            text-align: center;

            font-size: 40px;

        }

        label, input {

            font-size: 18px;

            display: block;

            margin: 10px auto;

            text-align: center;

        }

        input {

            padding: 10px;

            width: 250px;

            font-size: 18px;

        }

        button {

            display: block;

            margin: 20px auto;

            padding: 10px 20px;

            font-size: 20px;

            cursor: pointer;

        }

    </style>

</head>

<body>

    <p id="demo">Timer :</p>

    <label for="date">Enter date (format: MM, DD, YYYY):</label>

    <input type="text" id="date" placeholder="MM, DD, YYYY">

    <label for="time">Enter time (format: HH:MM:SS):</label>

    <input type="text" id="time" placeholder="HH:MM:SS">

    <button id="start" onclick="display()">Start</button>

    <!-- Linking external JavaScript file -->

    <script src="E.js"></script>

</body>

</html>

**# JAVASCRIPT**

function display() {

    var date = document.getElementById("date").value;

    var time = document.getElementById("time").value;

    var ip = date + " " + time;

    document.getElementById("demo").innerHTML = "Timer: " + ip;

    let deadline = new Date(ip).getTime();

    // To call defined function every second

    let x = setInterval(function () {

        // Getting current time

        let now = new Date().getTime();

        // Calculating the time difference

        let t = deadline - now;

        // Getting value of days, hours, minutes, and seconds

        let days = Math.floor(t / (1000 \* 60 \* 60 \* 24));

        let hours = Math.floor((t % (1000 \* 60 \* 60 \* 24)) / (1000 \* 60 \* 60));

        let minutes = Math.floor((t % (1000 \* 60 \* 60)) / (1000 \* 60));

        let seconds = Math.floor((t % (1000 \* 60)) / 1000);

        // Output the remaining time

        document.getElementById("demo").innerHTML =

            "Days: " + days + "<br>" +

            "Hours: " + hours + " Minutes: " + minutes + " Seconds: " + seconds;

        // If the countdown is expired

        if (t < 0) {

            clearInterval(x);

            document.getElementById("demo").innerHTML = "Expired";

        }

    }, 1000);

}

**//Exp: 6**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>JS1</title>

    <script src="index.js"></script>

    <style>

        button{

            width: 190px;

        }

    </style>

</head>

<body>

    <p style="font-size:50px;">Array Opeartions</p>

    <label id="lab">"Enter Array Elements" : </label>

    <input type="number" id="ipno">

    <button id="r1" onclick="addarr()">Add Array Elemets</button>

    <br>

    <br>

    <button id="r2" onclick="disp()">Display Array Elements</button>

    <button id="r3" onclick="removarr()">Remove Array Elements</button>

    <br>

    <button id="r4" onclick="searr()">Serach Array Elements</button>

    <button id="r5" onclick="empty()">Empty Array</button>

    <p id="op"></p>

</body>

</html>

**# JAVASCRIPT**

const arr = [];

let arrlen = arr.length;

function disp()

{

    document.getElementById("op").innerHTML = arr ;

}

function addarr()

{

    var a1 = document.getElementById("ipno").value;

    arr.push(a1);

    arrlen+=1;

    disp();

}

function searr(){

    var ipel = document.getElementById("ipno").value;

    for(var i=0;i<arrlen;i++)

    {

        if(ipel == arr[i])

        {

            document.getElementById("op").innerHTML = "Array Elements Is At Location : " + (i+1);

            break;

        }

        else{

            document.getElementById("op").innerHTML = "Elements is Absent";

        }

    }

}

function removarr()

{

    var a1 = document.getElementById("ipno").value;

    for(var i=1;i<arrlen;i++)

    {

        if(a1===arr[i])

        {

            delete arr[i];

            document.getElementById("op").innerHTML = "Deleted";

            arrlen -= 1;

            continue;

        }

        else{

            document.getElementById("op").innerHTML = "Element Is Absent";

        }

    }

    disp();

}

function empty()

{

    var a1 = document.getElementById("ipno").value;

    for(var i=0;i<arrlen;i++)

    {

        arr.pop();

    }

    disp();

}

**//Exp: 7**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

//HTML

<!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>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 20px;

        }

        pre {

            background-color: #f4f4f4;

            padding: 10px;

            border-radius: 5px;

        }

    </style>

</head>

<body>

    <h1>Set Operations</h1>

    <div>

        <label for="inputA">Enter elements of Set A (comma-separated):</label><br>

        <input type="text" id="inputA" placeholder="e.g., 1,2,3,4"><br><br>

        <label for="inputB">Enter elements of Set B (comma-separated):</label><br>

        <input type="text" id="inputB" placeholder="e.g., 3,4,5,6"><br><br>

        <button onclick="calculateSetOperations()">Calculate Set Operations</button>

    </div>

    <div>

        <h2>Results</h2>

        <pre id="results"></pre>

    </div>

    <!-- Link to the external JavaScript file -->

    <script src="Exp7.js"></script>

</body>

</html>

**# JAVASCRIPT**

//JavaScript

class SetOperations {

    // Union of two sets

    static union(setA, setB) {

        return new Set([...setA, ...setB]);

    }

    // Intersection of two sets

    static intersection(setA, setB) {

        return new Set([...setA].filter(item => setB.has(item)));

    }

    // Difference of two sets (A - B)

    static difference(setA, setB) {

        return new Set([...setA].filter(item => !setB.has(item)));

    }

    // Set difference (B - A)

    static setDifference(setA, setB) {

        return new Set([...setB].filter(item => !setA.has(item)));

    }

}

function calculateSetOperations() {

    const inputA = document.getElementById("inputA").value;

    const inputB = document.getElementById("inputB").value;

    const setA = new Set(inputA.split(',').map(Number));

    const setB = new Set(inputB.split(',').map(Number));

    const results = [];

    results.push("Set A: " + [...setA]);

    results.push("Set B: " + [...setB]);

    const unionResult = SetOperations.union(setA, setB);

    results.push("Union (A ∪ B): " + [...unionResult]);

    const intersectionResult = SetOperations.intersection(setA, setB);

    results.push("Intersection (A ∩ B): " + [...intersectionResult]);

    const differenceResult = SetOperations.difference(setA, setB);

    results.push("Difference (A - B): " + [...differenceResult]);

    const setDifferenceResult = SetOperations.setDifference(setA, setB);

    results.push("Set Difference (B - A): " + [...setDifferenceResult]);

    document.getElementById("results").textContent = results.join('\n');

}

**//Exp: 8**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

//HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Home Page</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 0;

            padding: 20px;

            transition: background-color 0.5s;

        }

        h1 {

            color: #333;

        }

        input {

            padding: 10px;

            margin: 5px 0;

            border: 1px solid #ccc;

            border-radius: 5px;

        }

        button {

            padding: 10px 15px;

            background-color: #007BFF;

            color: white;

            border: none;

            border-radius: 5px;

            cursor: pointer;

        }

    </style>

</head>

<body>

    <h1>Welcome to My Website</h1>

    <h2>Change Background Color</h2>

    <input type="text" id="inputField" placeholder="Focus here to change background">

    <button id="resetButton">Reset Background Color</button>

    <!-- Link to the external JavaScript file -->

    <script src="EXP8.js"></script>

</body>

</html>

**# JAVASCRIPT**

//JavaScript

const body = document.body;

// Change background color on mouse over event

body.addEventListener('mouseover', function() {

    body.style.backgroundColor = 'red'; // Light cyan color

});

// Change background color on mouse out event

body.addEventListener('mouseout', function() {

    body.style.backgroundColor = ''; // Reset to default

});

// Change background color on focus event

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

inputField.addEventListener('focus', function() {

    body.style.backgroundColor = '#ffe0b2'; // Light orange color

});

// Reset background color when input loses focus

inputField.addEventListener('blur', function() {

    body.style.backgroundColor = ''; // Reset to default

});

// Reset button functionality

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

resetButton.addEventListener('click', function() {

    body.style.backgroundColor = ''; // Reset to default

});

**//Exp: 9**

**//Name: Omkar Ashok Sawant**

**//Roll No: 60**

**# HTML**

//HTML

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Student Information Form</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 20px;

        }

        form {

            display: flex;

            flex-direction: column; /\* Align items vertically \*/

            max-width: 400px; /\* Set a max width for the form \*/

        }

        label {

            margin-top: 10px; /\* Add space above each label \*/

        }

        input, select {

            padding: 10px;

            margin: 5px 0; /\* Add margin below each input/select \*/

            border: 1px solid #ccc;

            border-radius: 5px;

        }

        button {

            padding: 10px 15px;

            background-color: #007BFF;

            color: white;

            border: none;

            border-radius: 5px;

            cursor: pointer;

            margin-top: 10px; /\* Add space above the button \*/

        }

        .error {

            color: red;

            margin-top: 10px;

        }

    </style>

</head>

<body>

    <h1>Student Information Form</h1>

    <form id="studentForm">

        <label for="name">Name:</label>

        <input type="text" id="name" placeholder="Enter your name">

        <label for="address">Address:</label>

        <input type="text" id="address" placeholder="Enter your address">

        <label for="city">City:</label>

        <input type="text" id="city" placeholder="Enter your city">

        <label for="state">State:</label>

        <input type="text" id="state" placeholder="Enter your state">

        <label for="gender">Gender:</label>

        <select id="gender">

            <option value="">Select Gender</option>

            <option value="Male">Male</option>

            <option value="Female">Female</option>

            <option value="Other">Other</option>

        </select>

        <label for="mobile">Mobile Number:</label>

        <input type="text" id="mobile" placeholder="Enter your mobile number">

        <label for="email">Email ID:</label>

        <input type="email" id="email" placeholder="Enter your email">

        <button type="submit">Submit</button>

    </form>

    <div id="errorMessages" class="error"></div>

    <!-- Link to the external JavaScript file -->

    <script src="h.js"></script>

</body>

</html>

**# JAVASCRIPT**

//JavaScript

document.getElementById('studentForm').addEventListener('submit', function(event) {

    event.preventDefault(); // Prevent form submission

    // Clear previous error messages

    const errorMessagesDiv = document.getElementById('errorMessages');

    errorMessagesDiv.innerHTML = '';

    // Get form values

    const name = document.getElementById('name').value.trim();

    const address = document.getElementById('address').value.trim();

    const city = document.getElementById('city').value.trim();

    const state = document.getElementById('state').value.trim();

    const gender = document.getElementById('gender').value;

    const mobile = document.getElementById('mobile').value.trim();

    const email = document.getElementById('email').value.trim();

    let errors = [];

    // Validate Name

    const nameRegex = /^[A-Za-z\s]+$/;

    if (!name || !nameRegex.test(name)) {

        errors.push("Please enter a valid name (letters and spaces only).");

    }

    // Validate Address

    if (!address) {

        errors.push("Address cannot be empty.");

    }

    // Validate City

    if (!city) {

        errors.push("City cannot be empty.");

    }

    // Validate State

    if (!state) {

        errors.push("State cannot be empty.");

    }

    // Validate Gender

    if (!gender) {

        errors.push("Please select your gender.");

    }

    // Validate Mobile Number

    const mobileRegex = /^[0-9]{10}$/;

    if (!mobile || !mobileRegex.test(mobile)) {

        errors.push("Please enter a valid mobile number (10 digits).");

    }

    // Validate Email

    const emailRegex = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;

    if (!email || !emailRegex.test(email)) {

        errors.push("Please enter a valid email address.");

    }

    // Display errors if any

    if (errors.length > 0) {

        errorMessagesDiv.innerHTML = errors.join('<br>');

    } else {

        // If no errors, you can process the form here (e.g., send data to a server)

        errorMessagesDiv.innerHTML = "Form submitted successfully!";

    }

});