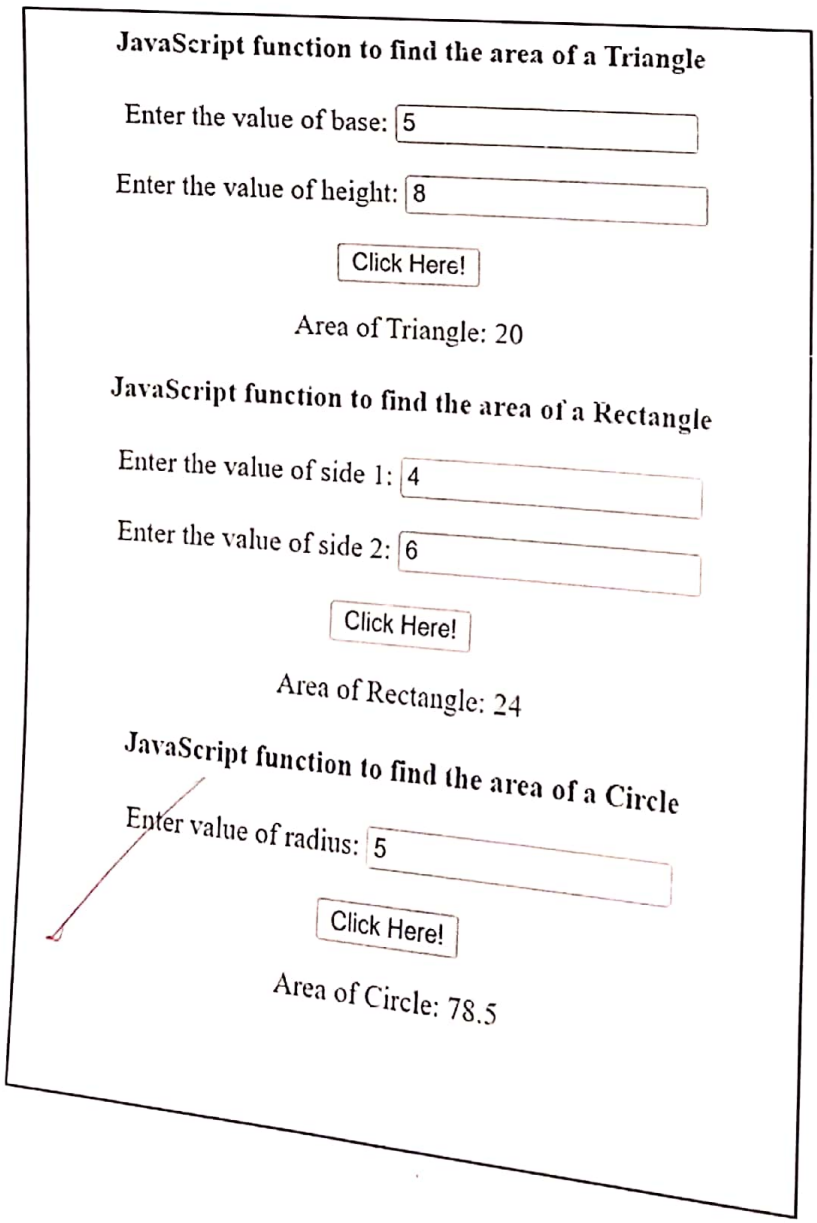
Practical 1

Code

```
<!DOCTYPE HTML>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>JavaScript function to find the area of shapes</title>
</head>
<body style="text-align: center;">

<h4>JavaScript function to find the area of a Triangle</h4>
<label for="side1">Enter the value of base: </label>
<input type="number" id="side1" placeholder="Enter value of side 1">
<br><br>
<label for="side2">Enter the value of height: </label>
<input type="number" id="side2" placeholder="Enter value of side 2">
<br><br>
<button onclick="Area()">Click Here!</button>
<p>Area of Triangle: <span id="display"></span></p>

<script type="text/javascript">
function Area() {
    var side1 = parseInt(document.getElementById("side1").value);
    var side2 = parseInt(document.getElementById("side2").value);
    var area = (side1 * side2) / 2;
    document.getElementById("display").innerHTML = area;
}
</script>

<!-- Rectangle -->
<h4>JavaScript function to find the area of a Rectangle</h4>
<label for="side5">Enter the value of side 1: </label>
<input type="number" id="side5" placeholder="Enter value of side 1">
<br><br>
<label for="side6">Enter the value of side 2: </label>
<input type="number" id="side6" placeholder="Enter value of side 2">
<br><br>
<button onclick="AreaRect()">Click Here!</button>
<p>Area of Rectangle: <span id="display1"></span></p>

<script type="text/javascript">
function AreaRect() {
    var side5 = parseInt(document.getElementById("side5").value);
    var side6 = parseInt(document.getElementById("side6").value);
    var s = (side5 * side6);
    document.getElementById("display1").innerHTML = s;
}
</script>

<!-- Circle -->
<h4>JavaScript function to find the area of a Circle</h4>
```

```
<label for="side7">Enter value of radius: </label>
<input type="number" id="side7" placeholder="Enter value of radius">
<br><br>
<button onclick="AreaCircle()">Click Here!</button>
<p>Area of Circle: <span id="display7"></span></p>

<script type="text/javascript">
function AreaCircle() {
   var side7 = parseInt(document.getElementById("side7").value);
   var pi = 3.14;
   var s4 = (pi * side7 * side7);
   document.getElementById("display7").innerHTML = s4;
}
</script>

</body>
</html>
```

Output



Practical 2

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Code

```
<html>
<body>
<h1>Multiplication Table</h1>
Enter a number:
<input type="text" id="num" /><br /><br />
Enter limit:
<input type="text" id="limit" />
<input type="button" value="Calculate" onClick="multiply()" />
<p id="result"></p>
<script>
function multiply() {
var n = document.getElementById('num').value;
var l = document.getElementById('limit').value;
var out = "";
for (var i = 1; i <= l; i++) {
out = out+i+" x "+n+" = "+i*n+"<br/>";
}
document.getElementById("result").innerHTML = out; }
</script>
</body>
</html>
```

Output

Multiplication Table

Enter a number: 5

Enter limit: 15 Calculate

1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
11 x 5 = 55
12 x 5 = 60
13 x 5 = 65
14 x 5 = 70
15 x 5 = 75

Practical 3

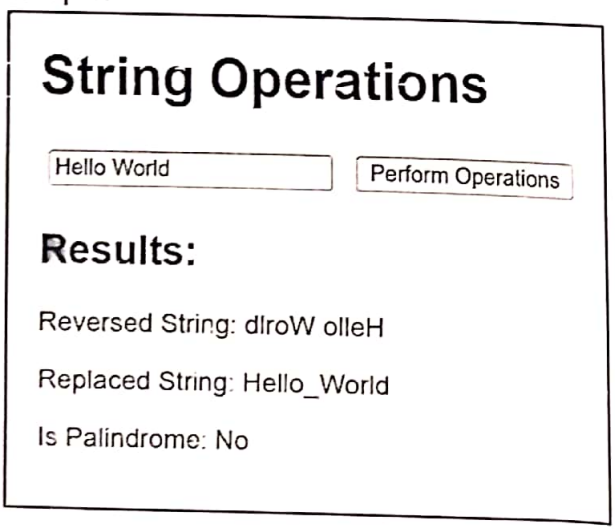
20

Code

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>String Operations</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;
    }
    input,
    button {
      margin: 5px;
    }
  </style>
</head>

<body>
  <h1>String Operations</h1>

  <!-- Input Field for Entering a String -->
  <input type="text" id="inputString" placeholder="Enter a string">
  <!-- Button to Trigger Operations -->
  <button onclick="performOperations()">Perform Operations</button>

  <!-- Results Section -->
  <h2>Results:</h2>
  <p id="reversed">Reversed String: </p>
  <p id="replaced">Replaced String: </p>
  <p id="palindrome">Is Palindrome: </p>

  <script>
    // Function to Perform All String Operations
    function performOperations() {
  const str = document.getElementById('inputString').value.trim();

  if (!str) {
    alert("Please enter a string.");
    return;
  }

  // Reverse the string
  const reversedString = str.split("").reverse().join("");
  document.getElementById('reversed').innerText = `Reversed String: ${reversedString}`;
```

```
    // Replace spaces with underscores
    const replacedString = str.replace(/ /g, "_");
    document.getElementById('replaced').innerText = `Replaced String: ${replacedString}`;

    // Check if the string is a palindrome
    const cleanedString = str.replace(/[^A-Za-z0-9]/g, "").toLowerCase();
    const isPalindrome = cleanedString === cleanedString.split("").reverse().join("");
    document.getElementById('palindrome').innerText = `Is Palindrome: ${isPalindrome ?
"Yes" : "No"}`;
}

    </script>

</body>

</html>
```

Output



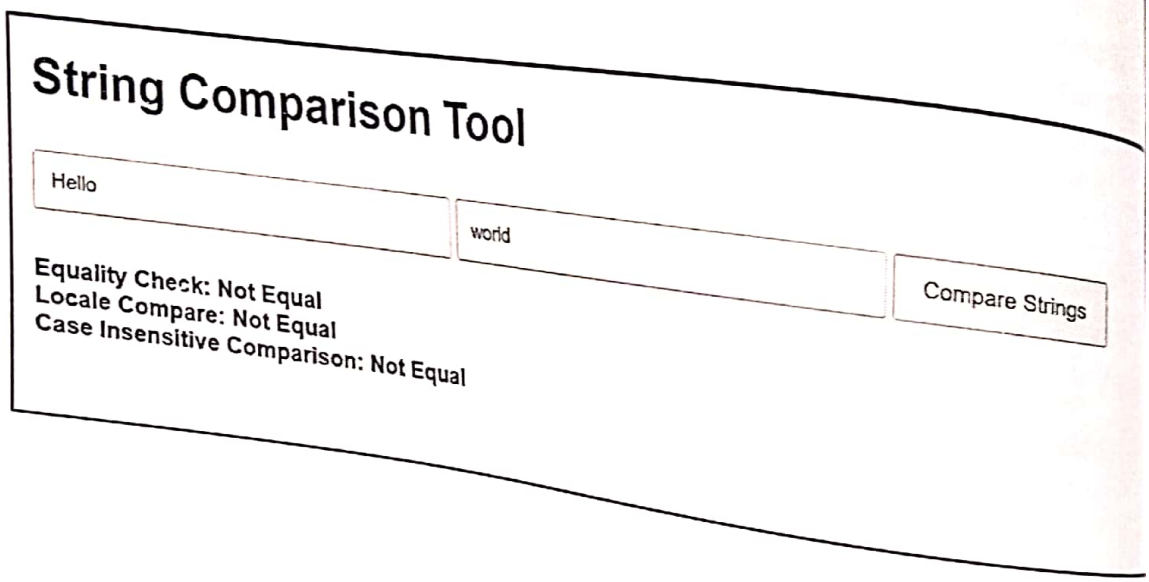
Practical 4

Code

```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>String Comparison</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;       }
input {
      margin: 10px 0;
      padding: 10px;
      width: 300px;       }
    button {
      padding: 10px 15px;
      cursor: pointer;}
    .result {
      margin-top: 20px;
      font-weight: bold;
    }
  </style>
</head>
<body>
  <h1>String Comparison Tool</h1>
  <!-- Input fields for entering strings -->
  <input type="text" id="string1" placeholder="Enter first string" />
  <input type="text" id="string2" placeholder="Enter second string" />
  <!-- Button to trigger string comparison -->
  <button onclick="compareStrings()">Compare Strings</button>
  <!-- Div to display the results of comparison -->
  <div class="result" id="result"></div>
  <script>
    // Function to compare the strings based on different criteria
    function compareStrings() {
      const str1 = document.getElementById('string1').value;
      const str2 = document.getElementById('string2').value;
      let result = "";
      // Method 1: Equality Check
      result += `Equality Check: ${str1 === str2 ? 'Equal' : 'Not Equal'}<br>`;
      // Method 2: Length Comparison result += `Length Comparison: ${str1.length ===
str2.length ? 'Same Length' : 'Different Length'}<br>`;
      // Method 3: Locale Compare
      result += `Locale Compare: ${str1.localeCompare(str2) === 0 ? 'Equal' : 'Not
Equal'}<br>`;
      // Method 4: Case Insensitive Comparison
```

```
        result += `Case Insensitive Comparison: ${str1.toLowerCase() ===
str2.toLowerCase() ? 'Equal' : 'Not Equal'}<br>`;
        // Display the result in the HTML
        document.getElementById('result').innerHTML = result;}
    </script>
</body>
</html>
```

Output



Pratical 5

Code

```
// Set the countdown time (current time + 24 hours in milliseconds)
let countDownDate = new Date().getTime() + 24 * 60 * 60 * 1000;
// Countdown timer
let x = setInterval(function () {
// Get the current 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
console.log(days + "d " + hours + "h " + minutes + "m " + seconds + "s");
// Clear the countdown when complete
if (timeLeft < 0) {
clearInterval(x);
console.log('Countdown Finished');
}},
1000); // Corrected the interval time to 1000 milliseconds (1 second)
```

Output

```
C:\Coding\JS>node Prac5.js
0d 23h 59m 58s
0d 23h 59m 57s
0d 23h 59m 56s
0d 23h 59m 55s
0d 23h 59m 54s
0d 23h 59m 53s
0d 23h 59m 52s
0d 23h 59m 51s
0d 23h 59m 50s
0d 23h 59m 49s
0d 23h 59m 48s
```

Practical 6

Code

```
// Create an array
let arr = [10, 20, 30, 40, 50, 60];
console.log("Original Array:", arr);

// 1. Remove specific element from the array (e.g., remove 30)
let elementToRemove = 30;
arr = arr.filter(item => item !== elementToRemove);
console.log("After removing", elementToRemove + ":", arr);

// 2. Check if array contains a specified value (e.g., check for 40)
let valueToCheck = 40;
if (arr.includes(valueToCheck)) {
  console.log("Array contains", valueToCheck);
} else {
  console.log("Array does not contain", valueToCheck);
}

// 3. Empty the array
arr.length = 0;
console.log("Array after emptying:", arr);
```

Output

```
C:\Coding\JS>node Prac6.js
Original Array: [ 10, 20, 30, 40, 50, 60 ]
After removing 30: [ 10, 20, 40, 50, 60 ]
Array contains 40
Array after emptying: []

C:\Coding\JS>
```

CODE:

```
// Function to find the union of two sets
function union(a, b) {
  let unionSet = new Set(a); // Initialize a new set with elements of set a

  // Add elements from set b to the union set
  for (let i of b) {
    unionSet.add(i);
  }

  return unionSet;
}

// Function to find the intersection of two sets
function intersection(setA, setB) {
  let intersectionSet = new Set();

  // Add elements to the intersection set if they exist in both sets
  for (let i of setB) {
    if (setA.has(i)) {
      intersectionSet.add(i);
    }
  }

  return intersectionSet;
}

// Function to find the difference between two sets
function difference(setA, setB) {
  let differenceSet = new Set(setA); // Initialize a new set with elements of set A

  // Remove elements from differenceSet if they exist in set B
  for (let i of setB) {
    differenceSet.delete(i); // Corrected the element reference to i
  }
  return differenceSet;
}
// Function to check if setB is a subset of setA
function subset(setA, setB) {
  for (let i of setB) {
    if (!setA.has(i)) {
      return false; // If an element in setB is not in setA, it's not a subset
    }
```

```
  }
  return true;
}

// Creating two sets
const setA = new Set(['apple', 'mango', 'orange', 'banana']);
const setB = new Set(['apple', 'banana']);

// Testing each function
const result_union = union(setA, setB);
console.log("Union Result: ", result_union);

const result_intersection = intersection(setA, setB);
console.log("Intersection Result: ", result_intersection);

const result_difference = difference(setA, setB);
console.log("Difference Result: ", result_difference);

const result_subset = subset(setA, setB);
console.log("Subset Result: ", result_subset);
```

OUTPUT:

CODE:

```
//index.html
<!DOCTYPE html>
<html>
<head>
  <title>Home Page</title>
  <meta charset="UTF-8">
  <script src="script.js" defer></script>
  <style>
    body {
      transition: background-color 0.5s; /* smooth change */
    }
    a {
      cursor: pointer;
      display: inline-block;
      margin-bottom: 10px;
      font-size: 18px;
      text-decoration: underline;
    }
    input {
      padding: 5px;
      font-size: 16px;
    }
  </style>
</head>
<body>
  <h1>Welcome to My Home Page</h1>
  <button onmouseover="changeBackgroundSequence()">Change Background
Color</button><br><br>
  <br>
  Enter your name: <input type="text" onfocus="highlightInput(this)">
</body>
</html>

//script.js
// Function to change background color sequentially on mouseover
function changeBackgroundSequence() {
  document.body.style.backgroundColor = 'Red';

  setTimeout(() => {
    document.body.style.backgroundColor = 'Pink';
  }, 2000);
```

```
    setTimeout(() => {
        document.body.style.backgroundColor = 'Green';
    }, 4000);

    setTimeout(() => {
        document.body.style.backgroundColor = 'Red';
    }, 6000);
}

// Function to change input field background color on focus
function highlightInput(element) {
    element.style.backgroundColor = 'lightyellow';
}
```

OUTPUT:

CODE:

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

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Calculator Program in JavaScript</title>

  <!-- Begins the JavaScript Code -->
  <script>
    // Use insert() function to insert the number in textview.
    function insert(num) {
      document.form1.textview.value += num; // Append the number to the textview
    }

    // Use equal() function to return the result based on passed values.
    function equal() {
      var exp = document.form1.textview.value;
      if (exp) {
        document.form1.textview.value = eval(exp); // Evaluate the expression
      }
    }

    // Create a backspace() function to remove the last character in textview.
    function backspace() {
      var exp = document.form1.textview.value;
      document.form1.textview.value = exp.substring(0, exp.length - 1); // Remove the
last character
    }
// Clear the textview
    function clearText() {
      document.form1.textview.value = '';
    }
  </script>

  <!-- Start the coding for CSS -->
  <style>
    /* Create the Outer layout of the Calculator. */
    .formstyle {
      width: 300px;
      height: 330px;
      margin: 20px auto;
```

```
        border: 3px solid skyblue;
        border-radius: 5px;
        padding: 20px;
        text-align: center;
        background-color: grey;
    }

    /* Display top horizontal bar that contains some information. */
    h1 {
        text-align: center;
        padding: 23px;
        background-color: skyblue;
        color: white;
    }

    /* It is used to create the layout for calculator button. */
    .btn {
        width: 50px;
        height: 50px;
        font-size: 25px;
        margin: 2px;
        cursor: pointer;
        background-color: red;
        color: white;
    }

    /* It is used to display the numbers, operations and results. */
    .textview {
        width: 223px;
        margin: 5px;
        font-size: 25px;
        padding: 5px;
        background-color: lightgreen;
}
    </style>
</head>

<body>
    <h1>Calculator Program in JavaScript</h1>
    <div class="formstyle">
        <form name="form1">
            <input class="textview" name="textview" readonly> <!-- Made the input read
only to prevent direct text input -->
        </form>
```

```
    <center>
      <table>
        <tr>
          <td><input class="btn" type="button" value="C"
onclick="clearText()"></td>
          <td><input class="btn" type="button" value="⌫"
onclick="backspace()"></td>
          <td><input class="btn" type="button" value="/" onclick="insert('/')"></td>
          <td><input class="btn" type="button" value="x" onclick="insert('*')"></td>
        </tr>
        <tr>
          <td><input class="btn" type="button" value="7" onclick="insert(7)"></td>
          <td><input class="btn" type="button" value="8" onclick="insert(8)"></td>
          <td><input class="btn" type="button" value="9" onclick="insert(9)"></td>
          <td><input class="btn" type="button" value="-" onclick="insert('-')"></td>
        </tr>
        <tr>
          <td><input class="btn" type="button" value="4" onclick="insert(4)"></td>
          <td><input class="btn" type="button" value="5" onclick="insert(5)"></td>
          <td><input class="btn" type="button" value="6" onclick="insert(6)"></td>
          <td><input class="btn" type="button" value="+" onclick="insert('+')"></td>
        </tr>
        <tr>
          <td><input class="btn" type="button" value="1" onclick="insert(1)"></td>
          <td><input class="btn" type="button" value="2" onclick="insert(2)"></td>
          <td><input class="btn" type="button" value="3" onclick="insert(3)"></td>
          <td rowspan="2"><input class="btn" style="height: 110px" type="button"
value="=" onclick="equal()"></td>
        </tr>
        <tr>
          <td colspan="2"><input class="btn" style="width: 106px" type="button"
value="0" onclick="insert(0)"></td>
          <td><input class="btn" type="button" value="." onclick="insert('.')"></td>
      </tr>
      </table>
    </center>
  </div>
</body>

</html>
```