Expt.No-05

```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

// SOURCE CODE

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

<head>
   <title>Timer in JS</title>
</head>

<body>
   <h2><b>Countdown Timer</b></h2>

   <input type="datetime-local" name="" id="timer">
   <button onclick="startTimer()">Start Timer</button>

   <h3 id="result"></h3>

   <script type="text/javascript">
      function startTimer() {
         let x = setInterval(function () {
            let countDownDate = document.getElementById("timer").value;
            let timer = new Date(countDownDate);
            let now = new Date().getTime();

            let distance = timer - now;

            let days = Math.floor(distance / (1000 * 60 * 60 * 24));
            let hours = Math.floor((distance % (1000 * 60 * 60 * 24)) / (1000 * 60 * 60));
```

```
            let minutes = Math.floor((distance % (1000 * 60 * 60)) / (1000 * 60));
            let seconds = Math.floor((distance % (1000 * 60)) / 1000);

            document.getElementById("result").innerHTML = `Timer will end in ${days} d : ${hours} h :
${minutes} m : ${seconds} s`;
            if (distance < 0) {
               clearInterval(x); document.getElementById("result").innerHTML = "EXPIRED";
            }
         }, 1000);
      }
   </script>
</body>

</html>
```

//OUTPUT

Expt.No-06

```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

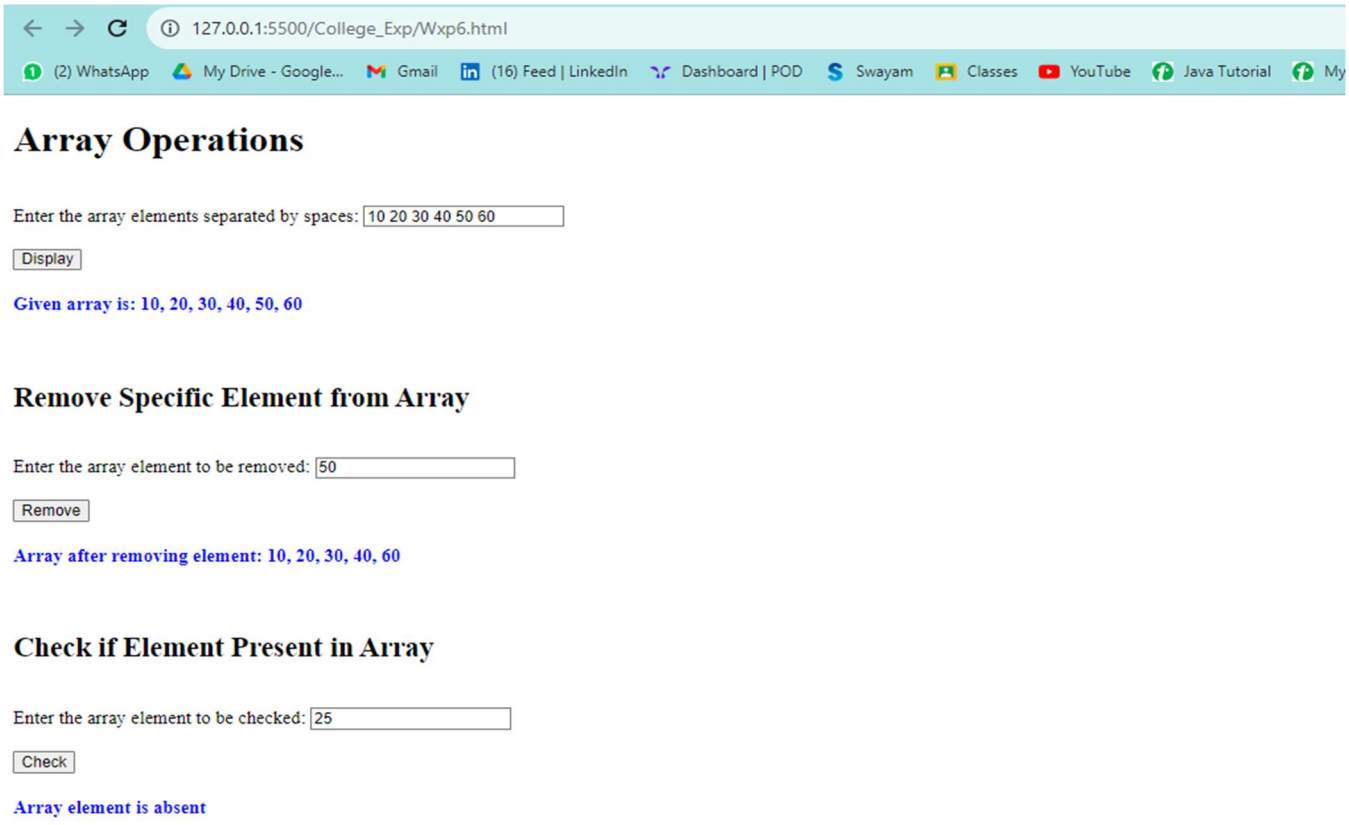
//SOURCE CODE

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

<head>
    <title>Array Operations</title>
</head>

<body>
    <h1>Array Operations</h1>

    <br>
    <label for="arr">Enter the array elements separated by spaces: </label>
    <input type="text" name="arr" id="arr" />
    <br>
    <br>
    <button type="button" onclick="arrayDisplay()">Display</button>
    <h4 style="color: blue" id="arrDisp">Given array is : ?</h4>
    <br>

    <h2>Remove Specific Element from Array</h2>
    <br>
    <label for="remarr">Enter the array element to be removed: </label>
    <input type="text" name="remarr" id="remarr" />
    <br><br>
    <button type="button" onclick="removeArrayElement()">Remove</button>
    <h4 style="color: blue" id="arrRem">Array after removing element: ?</h4>
```

```
<br>

<h2>Check if Element Present in Array</h2>
<br>
<label for="chkarr">Enter the array element to be checked: </label>
<input type="text" name="chkarr" id="chkarr" />
<br><br>
<button type="button" onclick="checkArrayElement()">Check</button>
<h4 style="color: blue" id="arrChk">Array element present or absent? </h4>
<br>

<h2>Empty Array</h2>
<br>
<button type="button" onclick="emptyArray()">Empty</button>
<h4 style="color: blue" id="arrEmpty">Empty Array ?</h4>

<script>
   function arrayDisplay() {
      const inputArr = document.getElementById('arr').value.split(' ');
      const displayElement = document.getElementById('arrDisp');
      displayElement.textContent = 'Given array is: ' + inputArr.join(', ');
   }

   function removeArrayElement() {
      const inputArr = document.getElementById('arr').value.split(' ');
      const elementToRemove = document.getElementById('remarr').value;
      const updatedArr = inputArr.filter(item => item !== elementToRemove);
      const displayElement = document.getElementById('arrRem');
      displayElement.textContent = 'Array after removing element: ' + updatedArr.join(', ');
   }

   function checkArrayElement() {
```

```
        const inputArr = document.getElementById('arr').value.split(' ');
        const elementToCheck = document.getElementById('chkarr').value;
        const isPresent = inputArr.includes(elementToCheck);
        const displayElement = document.getElementById('arrChk');
        displayElement.textContent = 'Array element is ' + (isPresent ? 'present' : 'absent');
    }

    function emptyArray() {
        const displayElement = document.getElementById('arrEmpty');
        displayElement.textContent = 'Empty Array: ';
        document.getElementById('arr').value = ''; // Clear the input field
    }
  </script>
</body>
</html>
```

//OUTPUT



Expt.No-07

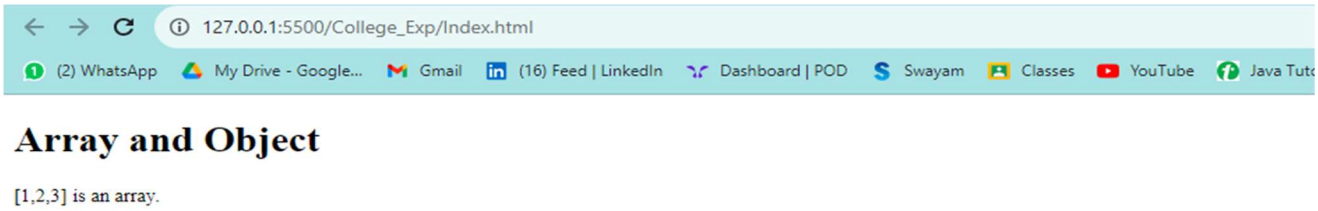
```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

//SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
   <title>Array and Object </title>
</head>
<body>
   <h1>Array and Object </h1>

   <script>
      function insertObject(arr, obj) {
         // Append the object to the array
         arr.push(obj);
         // document.write(arr);
      }

      function checkObject(arr) {
         // Check if arr is an array
         const result = Array.isArray(arr);
         if (result) {
            document.write(`[${arr}] is an array.`);
         } else {
            document.write(`[${arr}] is not an array.`);
         }
      }

      // Original array
```

```
        let array = [1, 2, 3];
        // Object to add
        let object = { x: 12, y: 8 };

        // Check if the original array is an array
        checkObject(array);

        // Call the function to insert the object into the array
        insertObject(array, object);
    </script>
</body>
</html>
```

//OUTPUT



Expt.No-08

```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

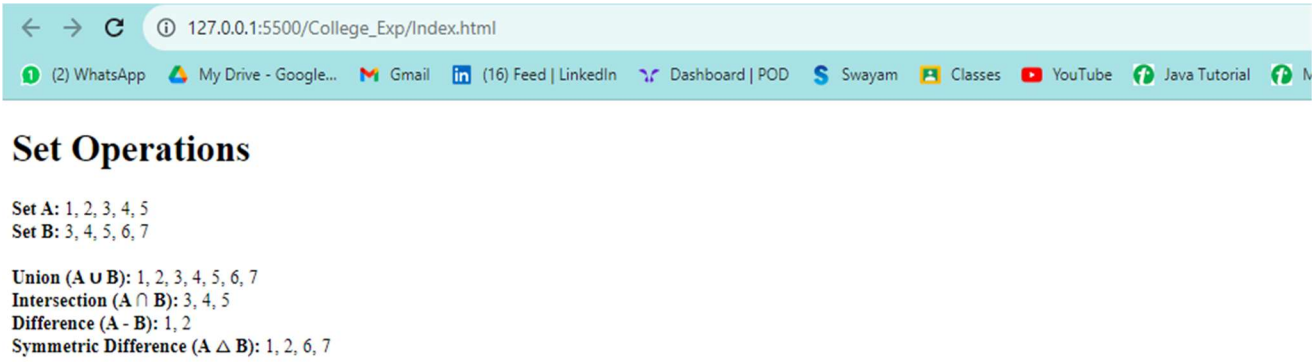
//SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Set Operations</title>
</head>
<body>
  <h1>Set Operations</h1>

  <div id="output">
    <!-- Output will be displayed here -->
  </div>

  <script>
    // Define two sets
    const setA = new Set([1, 2, 3, 4, 5]);
    const setB = new Set([3, 4, 5, 6, 7]);

    // Function to perform Union of two sets
    function union(set1, set2) {
      return new Set([...set1, ...set2]);
    }

    // Function to perform Intersection of two sets
    function intersection(set1, set2) {
      return new Set([...set1].filter(x => set2.has(x)));
    }
```

```
// Function to perform Difference (set1 - set2)
function difference(set1, set2) {
    return new Set([...set1].filter(x => !set2.has(x)));
}

// Function to perform Set Difference (symmetric difference)
function symmetricDifference(set1, set2) {
    const diff1 = difference(set1, set2);
    const diff2 = difference(set2, set1);
    return new Set([...diff1, ...diff2]);
}

// Output element
const outputDiv = document.getElementById("output");

// Display the Set operations results
function displayResults() {
    outputDiv.innerHTML += "<strong>Set A:</strong> " + [...setA].join(", ") + "<br>";
    outputDiv.innerHTML += "<strong>Set B:</strong> " + [...setB].join(", ") + "<br><br>";

    const unionSet = union(setA, setB);
    outputDiv.innerHTML += "<strong>Union (A ∪ B):</strong> " + [...unionSet].join(", ") + "<br>";

    const intersectionSet = intersection(setA, setB);
    outputDiv.innerHTML += "<strong>Intersection (A ∩ B):</strong> " +
[...intersectionSet].join(", ") + "<br>";

    const differenceAB = difference(setA, setB);
    outputDiv.innerHTML += "<strong>Difference (A - B):</strong> " + [...differenceAB].join(", ") +
"<br>";

    const symmetricDiff = symmetricDifference(setA, setB);
```

```
        outputDiv.innerHTML += "<strong>Symmetric Difference (A △ B):</strong> " +
[...symmetricDiff].join(", ") + "<br>";
    }

    // Call the displayResults function to show the results on the screen
    displayResults();
  </script>
</body>
</html>
```

//OUTPUT



Expt.No-09

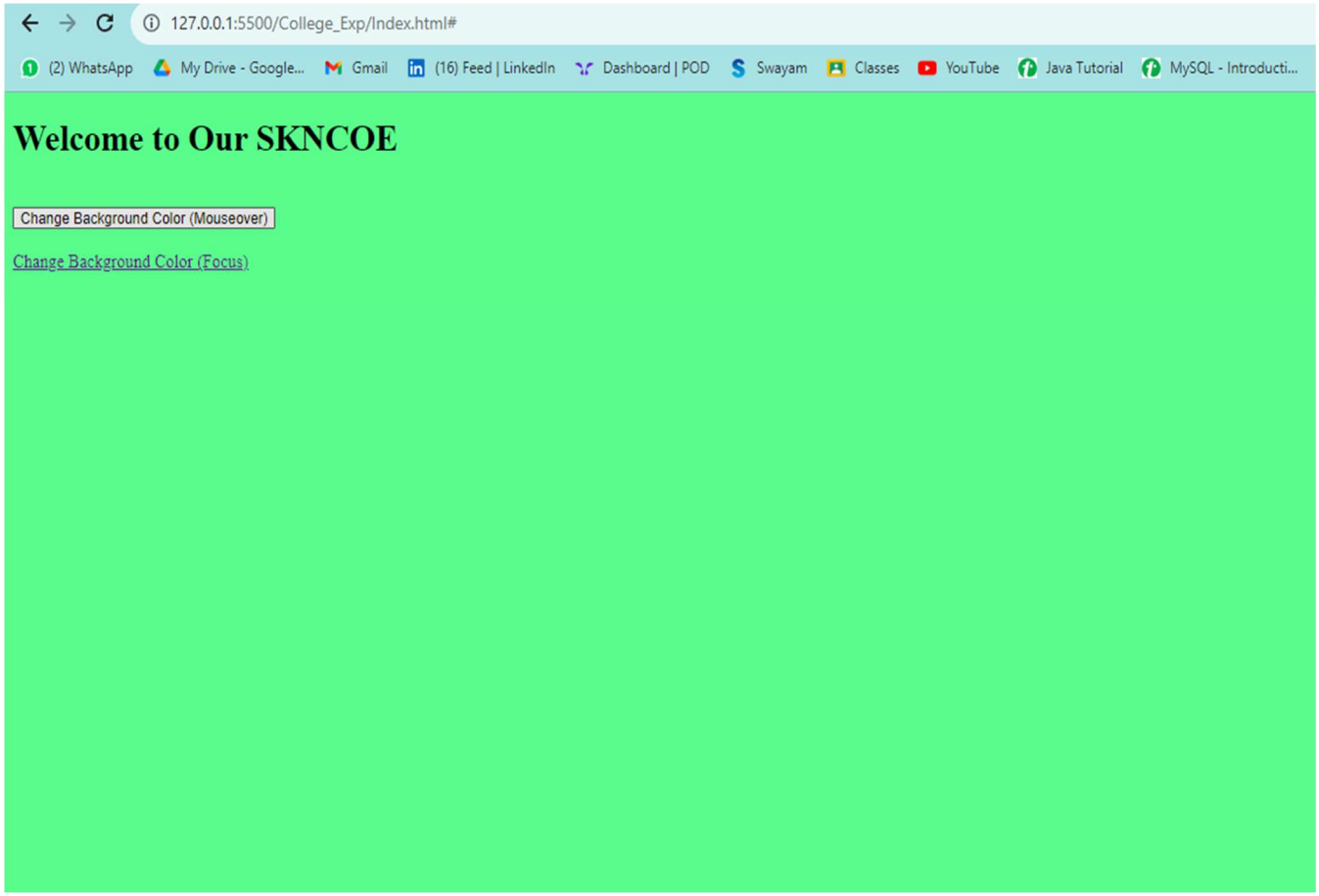
```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

//SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Website Home Page</title>
</head>
<body>
   <h1>Welcome to Our Website</h1>
   <br>
   <button id="changeColorButton">Change Background Color (Mouseover)</button>
   <br>
   <br>
   <a href="#" id="changeColorLink">Change Background Color (Focus)</a>

   <script>
      const button = document.getElementById("changeColorButton");
      const link = document.getElementById("changeColorLink");

      // Function to change the background color on mouseover
      button.addEventListener("mouseover", function() {
         document.body.style.backgroundColor = getRandomColor();
      });

      // Function to change the background color on focus for the anchor tag
      link.addEventListener("focus", function() {
```

```
        document.body.style.backgroundColor = getRandomColor();
    });

    // Helper function to generate a random color
    function getRandomColor() {
        const letters = "0123456789ABCDEF";
        let color = "#";
        for (let i = 0; i < 6; i++) {
            color += letters[Math.floor(Math.random() * 16)];
        }
        return color;
    }
  </script>
</body>
</html>
```

//OUTPUT



Expt.No-10

```
<!--
Name- Vikash Kumar
Roll No-E41118
-->
```

//SOURCE CODE

1.Index.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>
</head>
<body>
   <h1>Student Information Form</h1>
   <form id="studentForm" onsubmit="return validateForm()" action="submission_success.html" method="post">
      <label for="name">Name:</label>
      <input type="text" id="name" name="name" required><br>

      <label for="address">Address:</label>
      <input type="text" id="address" name="address" required><br>

      <label for="city">City:</label>
      <input type="text" id="city" name="city" required><br>

      <label for="state">State:</label>
      <input type="text" id="state" name="state" required><br>

      <label for="gender">Gender:</label>
      <select id="gender" name="gender">
         <option value="male">Male</option>
```

```
        <option value="female">Female</option>
    </select><br>

    <label for="mobile">Mobile Number:</label>
    <input type="text" id="mobile" name="mobile" required><br>

    <label for="email">Email ID:</label>
    <input type="email" id="email" name="email" required><br>

    <input type="submit" value="Submit">
  </form>

  <p id="errorMessages" style="color: red;"></p>

  <script src="main.js"></script>
</body>
</html>
```

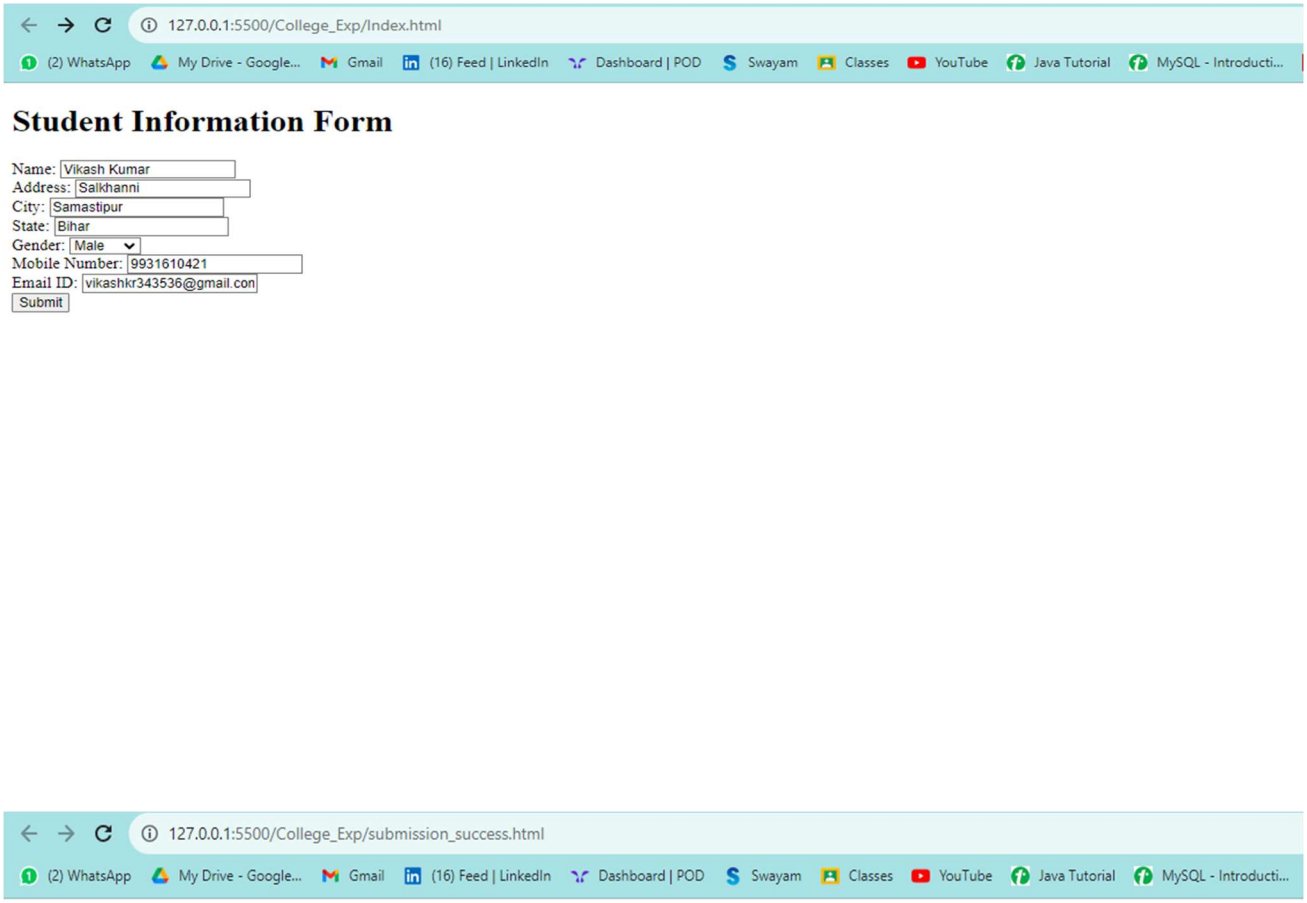
2. submission_success.html

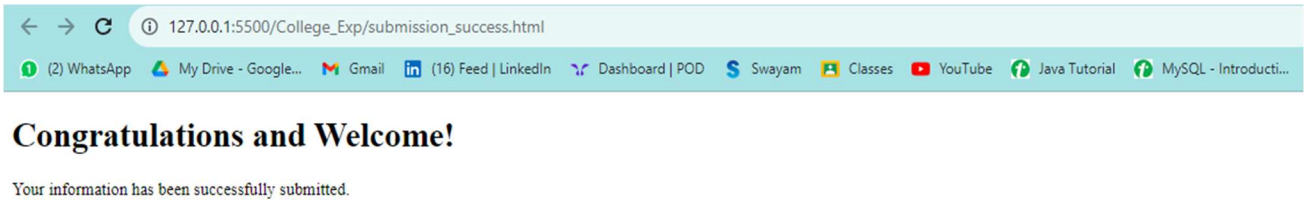
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Submission Successful</title>
</head>
<body>
  <h1>Congratulations and Welcome!</h1>
  <p>Your information has been successfully submitted.</p>
</body>
</html>
```

3. main.js

```
function validateForm() {
    const name = document.getElementById('name').value;
    const mobile = document.getElementById('mobile').value;
    const email = document.getElementById('email').value;
    const errorMessages = document.getElementById('errorMessages');

    errorMessages.innerHTML = ''; // Clear any previous error messages.

    // Validation for correct name (only letters and spaces).
    if (!/^[A-Za-z\s]+$/.test(name)) {
        errorMessages.innerHTML += "Invalid name. Please enter a valid name.<br>";
        return false;
    }

    // Validation for a valid mobile number.
    if (!/^\d{10}$/.test(mobile)) {
        errorMessages.innerHTML += "Invalid mobile number. Please enter a 10-digit number.<br>";
        return false;
    }

    // Validation for a valid email address.
    if (!/^[^\s@]+@[^\s@]+\.[^\s@]+$/.test(email)) {
        errorMessages.innerHTML += "Invalid email address. Please enter a valid email.<br>";
        return false;
    }

    // If all validations pass, the form will be submitted.
    return true;
}
```

//OUTPUT


127.0.0.1:5500/College_Exp/Index.html
(2) WhatsApp
My Drive - Google...
Gmail
(16) Feed | LinkedIn
Dashboard | POD
Swayam
Classes
YouTube
Java Tutorial
MySQL - Introducti...
Student Information Form
Name: Vikash Kumar
Address: Salkhanni
City: Samastipur
State: Bihar
Gender: Male
Mobile Number: 9931610421
Email ID: vikashkr343536@gmail.con
Submit


127.0.0.1:5500/College_Exp/submission_success.html
(2) WhatsApp
My Drive - Google...
Gmail
(16) Feed | LinkedIn
Dashboard | POD
Swayam
Classes
YouTube
Java Tutorial
MySQL - Introducti...
Congratulations and Welcome!
Your information has been successfully submitted.