Ex.No:2   **FORM VALIDATION USING JAVASCRIPT**

AIM:

   To implement form validation using JavaScript to ensure that the data entered by the user is accurate and complete.

ALGORITHM:

1. Get the form elements using the document.getElementById() method.
2. Define a function called validateForm() which will be triggered when the form is submitted.
3. Inside the function, retrieve the value of the form elements and store them in variables.
4. Check if the required form elements are filled by verifying if the variables are empty.
5. If any of the form elements are empty, show an alert message indicating the error and return false to prevent form submission.
6. Validate the email and phone number fields by using regular expressions.
7. If any of the fields are invalid, show an alert message indicating the error and return false to prevent form submission.
8. If all the form elements are filled correctly, return true to allow form submission.

PROGRAM:

```
<!DOCTYPE html>
<html>
<head>
      <title>Form Validation</title>
      <link rel="stylesheet" href="style.css">
      <script src="script.js"></script>
</head>
<body>
      <header>
            <h1>Form Validation</h1>
      </header>
      <main>
            <form id="myForm" onsubmit="return validateForm()">
                  <label for="name">Name:</label>
```

```html
                        <input type="text" id="name" name="name"><br><br>
                        <label for="email">Email:</label>
                        <input type="email" id="email" name="email"><br><br>
                        <label for="phone">Phone:</label>
                        <input type="tel" id="phone" name="phone"><br><br>
                        <label for="age">Age:</label>
                        <input type="number" id="age" name="age"><br><br>
                         <input type="submit" value="Submit">
                </form>
        </main>
        <footer>
                <p>&copy; 2023 Form Validation. All rights reserved.</p>
        </footer>
</body>
</html>
body {
        font-family: Arial, sans-serif;
}


header {
        background-color: #333;
        color: #fff;
        padding: 10px;
        text-align: center;
}


main {
        padding: 10px;
}


form {
        background-color: #f2f2f2;
        border-radius: 5px;
        padding: 20px;
}
```

```css
label {
        display: block;
        font-weight: bold;
        margin-bottom: 10px;
}


input[type="text"],
input[type="email"],
input[type="tel"],
input[type="number"] {
        border-radius: 3px;
        border: none;
        box-shadow: inset 0 1px 2px rgba(0, 0, 0, 0.1);
        padding: 10px;
        width: 100%;
}

input[type="submit"] {
        background-color: #333;
        border: none;
        border-radius: 3px;
        color: #fff;
        cursor: pointer;
        margin-top: 10px;
        padding: 10px;
        width: 100%;
}

input[type="submit"]:hover {
        background-color: #555;
}
```

```javascript
// Get the form element
const form = document.getElementById('myForm');
```

```javascript
// Get the form fields
const nameField = document.getElementById('name');
const emailField = document.getElementById('email');
const phoneField = document.getElementById('phone');

// Add event listener for form submission
form.addEventListener('submit', function(event) {
  // Prevent form from submitting
  event.preventDefault();

  // Reset previous error messages
  clearErrors();

  // Validate form fields
  let isValid = true;

  // Validate name field
  if (nameField.value.trim() === '') {
    setError(nameField, 'Name is required');
    isValid = false;
  }

  // Validate email field
  if (emailField.value.trim() === '') {
    setError(emailField, 'Email is required');
    isValid = false;
  } else if (!isValidEmail(emailField.value)) {
    setError(emailField, 'Please enter a valid email address');
    isValid = false;
  }

  // Validate phone field
  if (phoneField.value.trim() === '') {
    setError(phoneField, 'Phone is required');
    isValid = false;
```

```javascript
    } else if (!isValidPhone(phoneField.value)) {
      setError(phoneField, 'Please enter a valid phone number');
      isValid = false;
    }

    // If form is valid, submit it
    if (isValid) {
      form.submit();
    }
  });

  // Function to clear error messages
  function clearErrors() {
    const errors = document.querySelectorAll('.error');
    errors.forEach(function(error) {
      error.remove();
    });
  }

  // Function to set error message for a field
  function setError(field, message) {
    const error = document.createElement('div');
    error.className = 'error';
    error.innerText = message;
    field.parentElement.insertBefore(error, field.nextSibling);
  }

  // Function to validate email address
  function isValidEmail(email) {
    const emailRegex = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;
    return emailRegex.test(email);
  }

  // Function to validate phone number
  function isValidPhone(phone) {
```

```
    const
    phoneRegex =
    /^\d{10}$/;return
    phoneRegex.test(
    phone);
}
```