

HTML Form Validation

HTML form validation is a process of ensuring that user input in a web form is in the correct format before it is sent to the server for processing. It can be done using HTML5 features and JavaScript.

HTML5 Form Validation

HTML5 introduces several new attributes to form elements, allowing for client-side validation without requiring JavaScript. Here are some commonly used attributes:

- `required`: Ensures the user fills in the field.
- `pattern`: Specifies a regular expression that the input field's value must match.
- `min`, `max`: Specifies the minimum and maximum values for number inputs.
- `minlength`, `maxlength`: Specifies the minimum and maximum length of text inputs.
- `type`: Several input types such as `email`, `url`, `tel`, `number`, etc., provide basic validation.
- `step`: Specifies the legal number intervals for an input field.

Example Form with HTML5 Validation

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Form Validation</title>
</head>
<body>
  <form>
    <label for="username">Username (3-20 characters, letters only):</label>
    <input type="text" id="username" name="username" pattern="[A-Za-z]{3,20}"
required>
    <br>
    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>
    <br>
    <label for="age">Age (18-99):</label>
    <input type="number" id="age" name="age" min="18" max="99" required>
    <br>
    <button type="submit">Submit</button>
  </form>
```

```
</body>
</html>
```

JavaScript Form Validation

JavaScript can provide more complex and customized validation logic. You can add event listeners to form elements and check the values against your criteria.

Example Form with JavaScript Validation

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Form Validation</title>
  <script>
    function validateForm(event) {
      var username = document.getElementById('username').value;
      var email = document.getElementById('email').value;
      var age = document.getElementById('age').value;

      var usernamePattern = /^[A-Za-z]{3,20}$/;
      if (!usernamePattern.test(username)) {
        alert("Username must be 3-20 letters.");
        event.preventDefault();
        return false;
      }

      if (!email.includes('@')) {
        alert("Please enter a valid email address.");
        event.preventDefault();
        return false;
      }

      if (age < 18 || age > 99) {
        alert("Age must be between 18 and 99.");
        event.preventDefault();
        return false;
      }

      return true;
    }
  </script>
```

```
</head>
<body>
  <form onsubmit="return validateForm(event)">
    <label for="username">Username (3-20 characters, letters only):</label>
    <input type="text" id="username" name="username" required>
    <br>
    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>
    <br>
    <label for="age">Age (18-99):</label>
    <input type="number" id="age" name="age" required>
    <br>
    <button type="submit">Submit</button>
  </form>
</body>
</html>
```

Key Points

- **HTML5 validation** is easier and more user-friendly but may not support all browsers.
- **JavaScript validation** provides more flexibility and customization options.
- Always validate on the server side as well, to ensure security and data integrity.