9530

ST.MOTHER THERESA ENGINEERING COLLEGE

COMPUTER SCIENCE AND ENGINEERING

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Completed the project named as

Phase 5

INTERACTIVE FORM VALIDATION

SUBMITTED BY,

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TITLE:INTERACTIVE FROM VALIDATION TOOLS :HTML,CSS,JS FUNCTIONALITY

Problem statement:

In many web applications, user input is collected through online forms for activities such as account creation, login, and data submission. However, users often provide incomplete, incorrect, or weak input, such as invalid email addresses, empty fields, or insecure passwords. This leads to : Data inaccuracy in the system.

Poor user experience due to delayed error detection after submission.

Security risks from weak password choices.

Increased server load, as invalid data must be handled at the backend.

Therefore, there is a need for an interactive form validation mechanism that checks user inputs in real-time, provides instant feedback, and prevents the submission of invalid data before reaching the server Objective**:**

The objective of this project is to design and implement an interactive form validation system that ensures user input accuracy and enhances usability. The system validates form fields such as name, email, and password in real-time using JavaScript and regular expressions. By providing immediate feedback through dynamic error messages and visual indicators (CSS styling), the project aims to: Improve data accuracy and prevent invalid submissions.Enhance user experience with instant feedback. Ensure strong security practices by enforcing password strength. Demonstrate the integration of HTML, CSS, and JavaScript for frontend validation. Reduce backend load by filtering invalid data at the client side. AIM 1:

To develop an interactive form that validates user inputs such as name, email, and password in real-time using JavaScript and Regular Expressions.

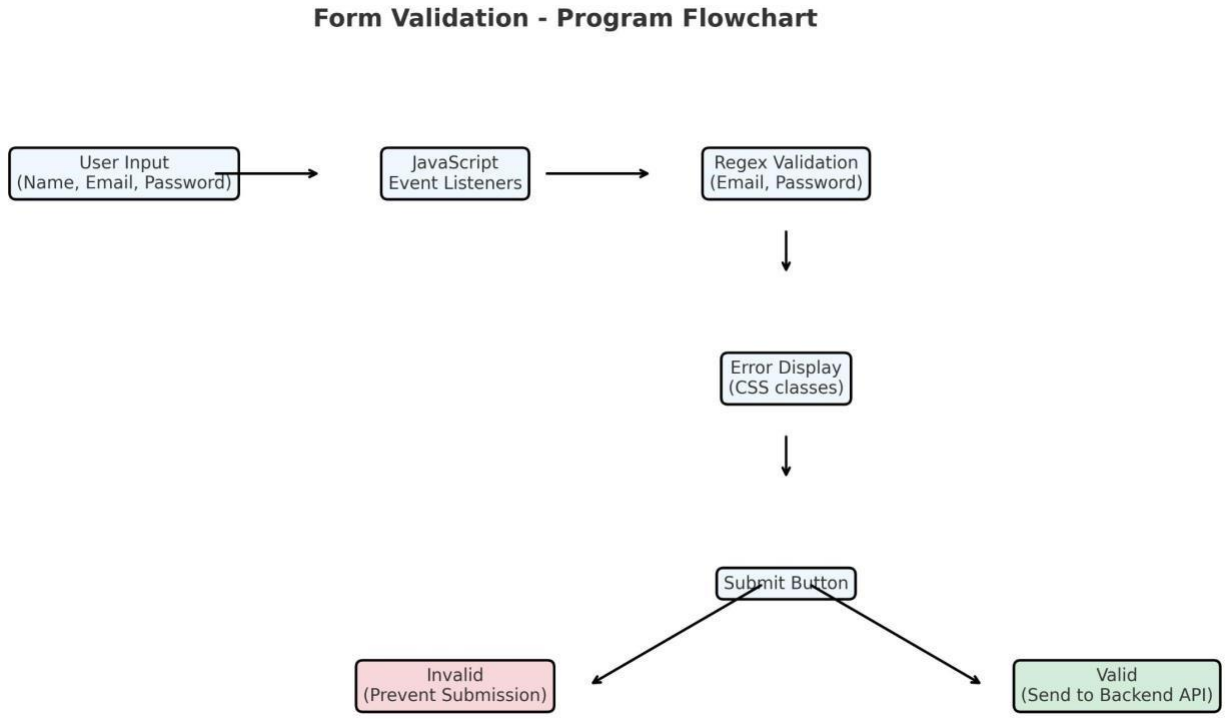
AIM 2:

To enhance user experience and data accuracy by providing instant feedback through dynamic CSS styling and preventing submission of invalid data.

DATE :14/09/2025

To create an interactive web form that validates user inputs in real-time using HTML, CSS, and JavaScript. To prevent invalid data submission and enhance user experience with dynamic error feedback.

Flowchart:



PROGRAM

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Interactive Form Validation</title>
  <style>
    Body {
      Font-family: Arial, sans-serif;
      Margin: 50px;
```

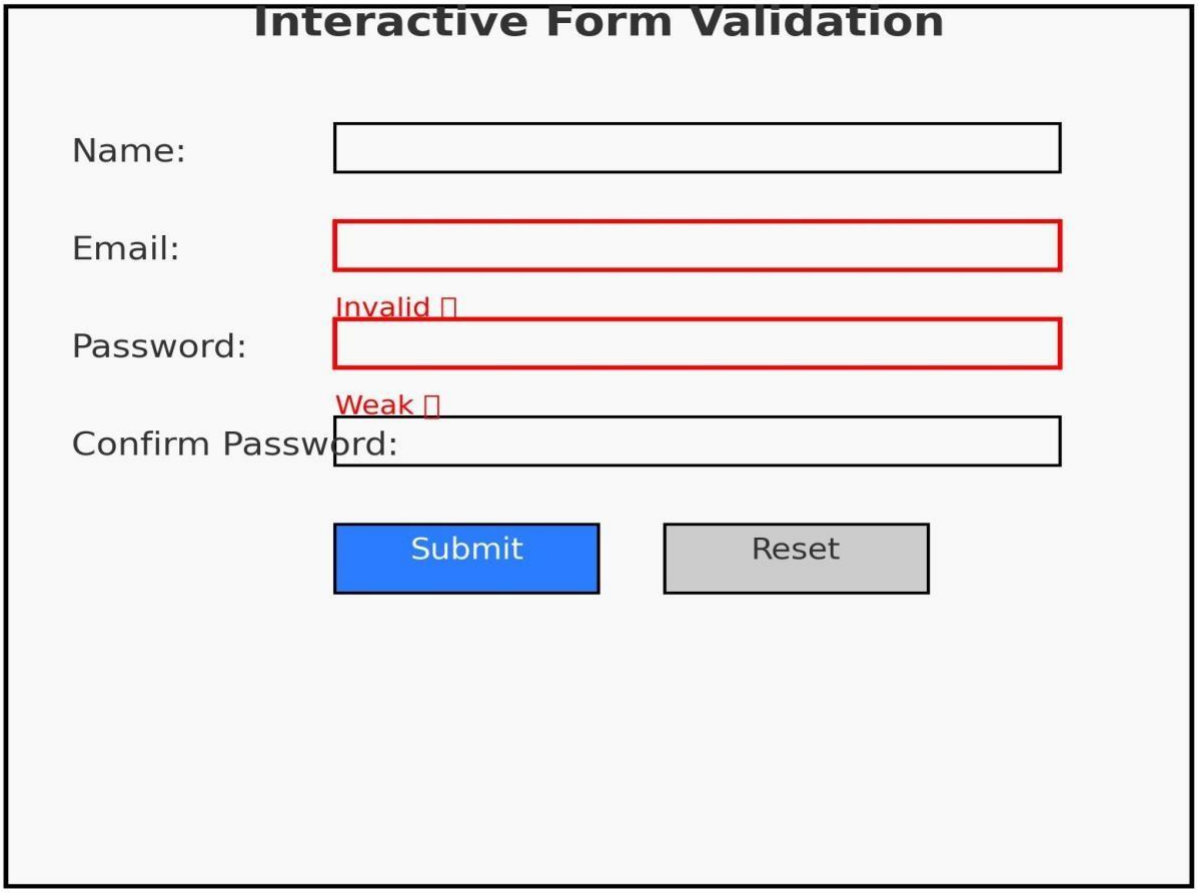
```
}
Form {
  Max-width: 400px;
}
Input {
  Display: block;
  Width: 100%;
  Padding: 10px;
  Margin-bottom: 10px;
  Border: 1px solid #ccc;
  Border-radius: 5px;
}
Input.invalid {
  Border-color: red;
}
.error {
  Color: red;
  Font-size: 0.9em;
  Display: none;
}
Button {
  Padding: 10px 20px;        Background-color: #4CAF50;
  Color: white;
  Border: none;
  Border-radius: 5px;
  Cursor: pointer;
}
Button:hover {
```

```
        Background-color: #45a049;
      }
    </style>
</head>
<body>

<h2>Sign Up Form</h2>
<form id="signupForm" novalidate>
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required>
    <div class="error" id="nameError">Name is required.</div>

    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>
    <div class="error" id="emailError">Enter a valid email.</div>

    <label for="password">Password:</label>
    <input type="password" id="password" name="password" required> <div class="error" id="passwordError">Password must be at least 6 characters.</div>

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

<script>
    Const form = document.getElementById('signupForm');
    Const nameInput = document.getElementById('name');
    Const emailInput = document.getElementById('email');
    Const passwordInput = document.getElementById('password');
```

```
  Const nameError = document.getElementById('nameError');
  Const emailError = document.getElementById('emailError');
  Const passwordError = document.getElementById('passwordError');

  // Real-time validation
nameInput.addEventListener('input', () => {
if (nameInput.value.trim() === '') {
nameInput.classList.add('invalid');
nameError.style.display = 'block';
    } else {
      nameInput.classList.remove('invalid');
nameError.style.display = 'none';
    }
  });

  emailInput.addEventListener('input', () => {
const emailPattern = /^[^ ]+@[^ ]+\.[a-z]{2,3}$/;
if (!emailInput.value.match(emailPattern)) {
emailInput.classList.add('invalid');
emailError.style.display = 'block';
    } else {
      emailInput.classList.remove('invalid');
emailError.style.display = 'none';
    }
  });
```

```
  passwordInput.addEventListener('input', () => {
if (passwordInput.value.length < 6) {
passwordInput.classList.add('invalid');
passwordError.style.display = 'block';
    } else {
      passwordInput.classList.remove('invalid');
passwordError.style.display = 'none';
    }
  });

  // Form submission validation
  Form.addEventListener('submit', € => {
    Let valid = true;

    If (nameInput.value.trim() === '') {
nameInput.classList.add('invalid');
nameError.style.display = 'block';        valid
= false;
    }
    Const emailPattern = /^[^ ]+@[^ ]+\.[a-z]{2,3}$/;
If (!emailInput.value.match(emailPattern)) {
emailInput.classList.add('invalid');
emailError.style.display = 'block';        valid =
false;
    }
    If  (passwordInput.value.length  <  6)  {
passwordInput.classList.add('invalid');
```

```
passwordError.style.display = ‘block’;
valid = false;
    }

    If (!valid) {
      e.preventDefault(); // Prevent form submission
    }
  });
</script>

</body>
</html>
```



Project hurdles :

1.Regex Complexity – Writing efficient regular expressions for email format and password strength can be tricky and may reject valid inputs.

2.Browser Compatibility – Some validation features may behave differently across browsers.

3.User Experience – Showing too many error messages at once can confuse users. Proper placement and styling of errors is necessary.

4.Security – Client-side validation alone is not secure; data must still be validated on the server.

5.Accessibility – Ensuring error messages and validation hints are usable for screen readers.

5.Password Strength – Balancing strict rules (security) with user convenience (usability).

Phase 5

Project Demonstration & Documentation

Final Demo Walkthrough

Present a live demo of your interactive form validation project.

Show real-time validation for different fields:

Name, Email, Password, Confirm Password, etc.

Demonstrate error messages, styling, and responsiveness.

Highlight special features (e.g., password strength meter, conditional validations).

Project Report

Include the following in your report:

Project Title: Interactive Form Validation

Objective: Explain what your project achieves.

Tools & Technologies: HTML, CSS, JavaScript, Regex, etc.

Features Implemented:

Real-time validation

Custom error messages

Form submission checks

Screenshots: Add screenshots of the working form with validations.

Challenges & Solutions: Describe any obstacles faced and how you resolved them.

Conclusion: Briefly summarize your project outcome.

Screenshots / API Documentation

Take clear screenshots of each form validation scenario.

If your project uses APIs (e.g., for email validation), include API documentation:

Endpoint URLs

Request & Response examples

Error handling

Challenges & Solutions

Example format:

Challenge	Solution
Regex not catching all invalid emails	Modified regex pattern to cover edge cases
Form submitted despite invalid fields	Added preventDefault() in JS submit handler
Mobile responsiveness issues	Used CSS media queries for adaptive layout

GitHub README & Setup Guide

Include a README.md file in your repository with:

Project description

Features

How to run locally Deployed

link (if any) Example:

Interactive Form Validation

Features- Real-time validation

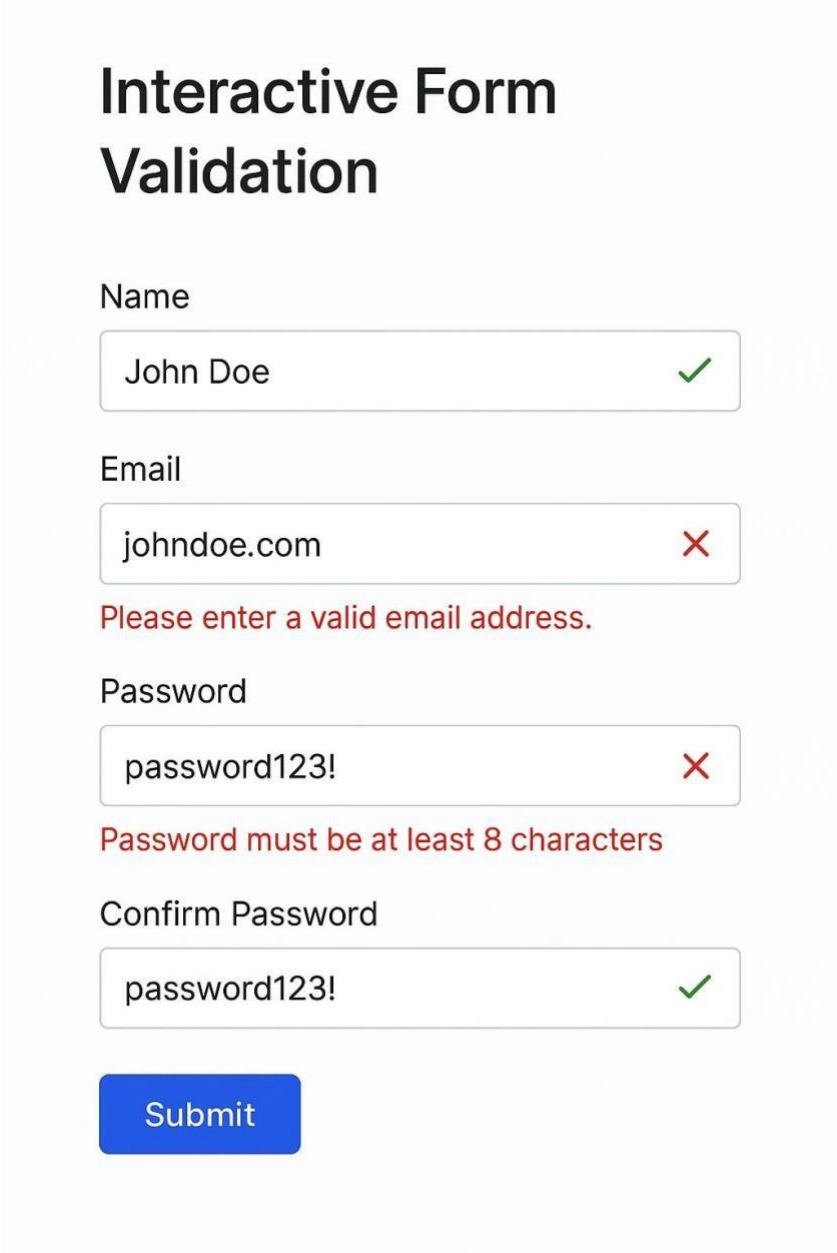
- Custom error messages

- Responsive design

Setup

1. Clone the repo

2. Open `index.html` in your browser 3. Test the form fields



Final submission

The complete set of project files, documentation, and deliverables submitted at the end of a course or project.

GitHub :https://github.com/marianu20051210-ui/SmtecNMIBM-interactive-form-validation-.git

Repository link https://marianu20051210-ui.github.io/SmtecNMIBM-interactive-form-validation-/

Conclusion :

The interactive form validation system enhances user experience by providing real-time feedback on input fields such as name, email, and password. Using HTML, CSS, and JavaScript, the form dynamically checks for valid inputs, highlights errors, and prevents submission of invalid data. This approach reduces user errors, improves data accuracy, and strengthens overall web application reliability.