Lab Report 3

Course Code: CSE416

Course Title:Web Engineering Lab

SUBMITTED TO:

Noshat Sadaf Lira

Department of Computer Science and Engineering

Daffodil International University

SUBMITTED BY:

Kanij Fatema

ID:221-15-4884

Section :61_J1

1.Experiment No:03

2.Experiment Name: Interactive Web Page Development using JavaScript.

3.Objective:

- To understand the use of generic JavaScript for adding interactivity to web pages.
- To learn how to perform form validation using JavaScript.
- To implement simple JavaScript functions that enhance user experience.

4.Introduction: JavaScript is a powerful scripting language used to create dynamic and interactive web pages. Unlike static HTML and CSS, JavaScript allows web pages to respond to user actions like button clicks, form submissions, or mouse movements. One of the most common uses of JavaScript is form validation, which checks whether the user's input is correct before sending it to the server. This prevents errors, saves time, and improves data accuracy.

5.Code:

- Generic JavaScript

```
<!DOCTYPE html>
<html>
<head>
   <title>Web Page</title>
</head>
<body>
   <h2>Welcome</h2>
   <button onclick="showMessage()">Click Me</button>

   <p id="output"></p>
```

```
    <script>
      function showMessage() {
        document.getElementById("output").innerHTML = "Click";
      }
    </script>
  </body>
  </html>
```

Output:

- A button is displayed.
- When clicked, it shows the message *"Click"* below it.

JavaScript Form Validation:

```
<!DOCTYPE html>
<html>
<head>
  <title>Form Validation</title>
</head>
<body>
  <h2>DIU User Registration Form</h2>
  <form onsubmit="return validateForm()">
    Last Name: <input type="text" id="lastname"><br><br>
    First Name: <input type="text" id="firstname"><br><br>
    Student ID : <input type="text" id="sid" placeholder="***-**-****"><br><br>
    Email: <input type="text" id="email" placeholder="example.cse@diu.edu.bd"><br><br>
    <input type="submit" value="Register">
  </form>

  <script>
    function validateForm() {
      let lastname = document.getElementById("lastname").value.trim();
      let firstname = document.getElementById("firstname").value.trim();
      let sid = document.getElementById("sid").value.trim();
      let email = document.getElementById("email").value.trim();
```

```
        let nameRegex = /^[A-Za-z\s]+$/;
        let sidRegex = /^\d{3}-\d{2}-\d{4}$/;
        let emailRegex = /^[a-zA-Z0-9._%+-]+\.cse@diu\.edu\.bd$/;

        if (lastname === "" || firstname === "" || sid === "" || email === "") {
          alert("All fields must be filled out!");
          return false;
        }
        if (!nameRegex.test(lastname) || !nameRegex.test(firstname)) {
          alert("Name and Firstname must contain only letters.");
          return false;
        }
        if (!sidRegex.test(sid)) {
          alert("SID must be in the format xxx-xx-xxxx.");
          return false;
        }
        if (!emailRegex.test(email)) {
          alert("Email must end with .cse@diu.edu.bd");
          return false;
        }

        alert("Form submitted successfully!");
        return true;
      }
    </script>
</body>
</html>
```

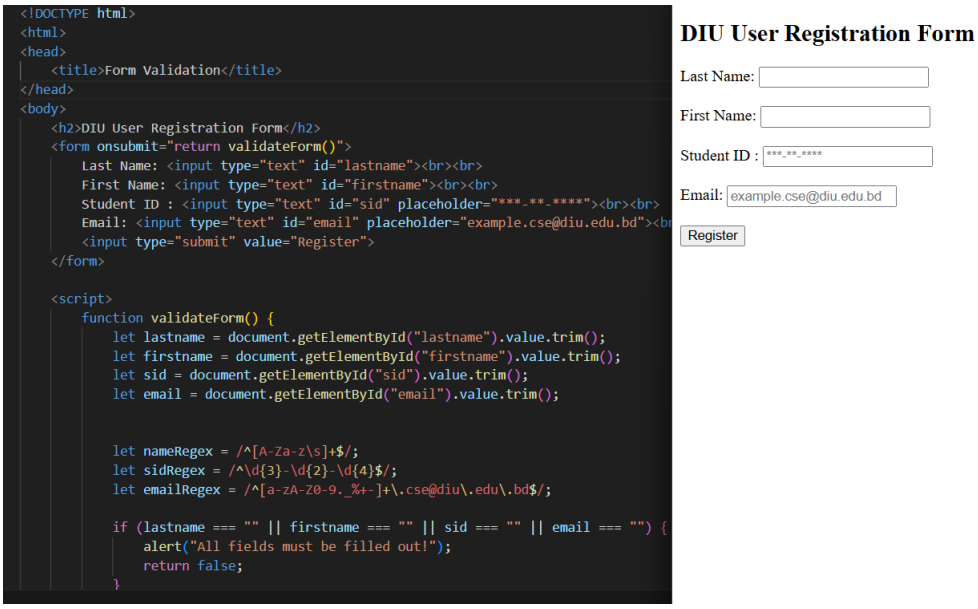
Output:

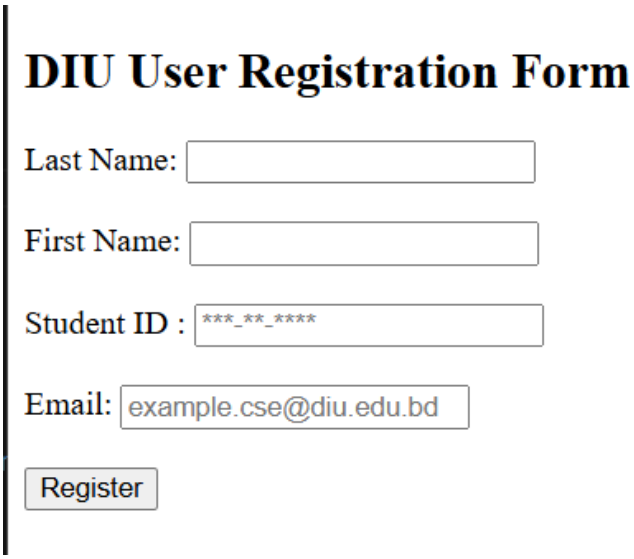
```html
<!DOCTYPE html>
<html>
<head>
    <title>Form Validation</title>
</head>
<body>
    <h2>DIU User Registration Form</h2>
    <form onsubmit="return validateForm()">
        Last Name: <input type="text" id="lastname"><br><br>
        First Name: <input type="text" id="firstname"><br><br>
        Student ID : <input type="text" id="sid" placeholder="***_**_****"><br><br>
        Email: <input type="text" id="email" placeholder="example.cse@diu.edu.bd"><br>
        <input type="submit" value="Register">
    </form>

    <script>
        function validateForm() {
            let lastname = document.getElementById("lastname").value.trim();
            let firstname = document.getElementById("firstname").value.trim();
            let sid = document.getElementById("sid").value.trim();
            let email = document.getElementById("email").value.trim();


            let nameRegex = /^[A-Za-z\s]+$/;
            let sidRegex = /^\d{3}-\d{2}-\d{4}$/;
            let emailRegex = /^[a-zA-Z0-9._%+-]+\.cse@diu\.edu\.bd$/;

            if (lastname === "" || firstname === "" || sid === "" || email === "") {
                alert("All fields must be filled out!");
                return false;
            }
```





6.Conclusion: In this lab, we explored how JavaScript enhances web pages by making them interactive. We implemented a simple example of generic JavaScript to display a message on a button click. We also learned about **form validation**, which ensures that user input is correct before submission. These techniques are widely used in real-world web applications to improve usability, reduce errors, and provide a better user experience.