

LAB MANUAL

Enhancing Web Functionality Using JavaScript



Enhancing Web Functionality Using JavaScript

Objective

To add basic interactivity to a semantic and styled web page using JavaScript.

This practical will focus on:

- Selecting HTML elements using the DOM.
- Handling user events.
- Using **GitHub Copilot** to assist in generating JavaScript code for simple tasks like **form validation** and dynamic content updates.

Equipment Required

- Computer or laptop with internet connection.
- Installed software:
 - **VS Code**
 - **Node.js** (optional; for running JavaScript in terminal)
 - **GitHub Copilot extension**

Prerequisites

- Completion of Practical 2 (HTML page) and Practical 3 (Styled page).
- Basic knowledge of JavaScript syntax: variables, functions, conditionals.
- GitHub Copilot set up and signed in.

Problem Statement

Enhance the existing semantic and styled page with:

1. A **Contact Form** (name and email fields).
2. JavaScript to validate that:
 - The fields are not empty.
 - The email contains an "@" character.
3. Show a message on the page when the form is successfully submitted.

Procedure

1. Modify HTML (Add a Contact Form)

Inside index.html, before the closing `</main>` tag, add:

```
<section id="contact">
  <h2>Contact Us</h2>
  <form id="contactForm">
    <label for="name">Name:</label><br>
    <input type="text" id="name" name="name"><br><br>
    <label for="email">Email:</label><br>
    <input type="text" id="email" name="email"><br><br>
    <button type="submit">Submit</button>
  </form>
  <p id="message"></p>
</section>
</main>
```

2. Create a JavaScript File

1. Create a new file called script.js.
2. Link it in the HTML, just before `</body>`: `<script src="script.js"></script>`

3. Use Copilot to Write Validation Code

In script.js, press **Ctrl + I** and type: `// Add event listener to validate contact form`

GitHub Copilot will suggest code. Accept or edit as needed. A correct version would look like:

```
// Add event listener to validate contact form
document.addEventListener('DOMContentLoaded', function () {
  const form = document.getElementById('contactForm');
  if (form) {
    form.addEventListener('submit', function (e) {
      let valid = true;
      const name = form.elements['name'];
      const email = form.elements['email'];
      const message = form.elements['message'];

      // Simple validation
      if (!name.value.trim()) {
        valid = false;
        alert('Please enter your name.');
```

```
        alert('Please enter a valid email address.');
```

```
        email.focus();
```

```
    } else if (!message.value.trim()) {
```

```
        valid = false;
```

```
        alert('Please enter your message.');
```

```
        message.focus();
```

```
    }
```

```
    if (!valid) {
```

```
        e.preventDefault();
```

```
    }
```

```
});
```

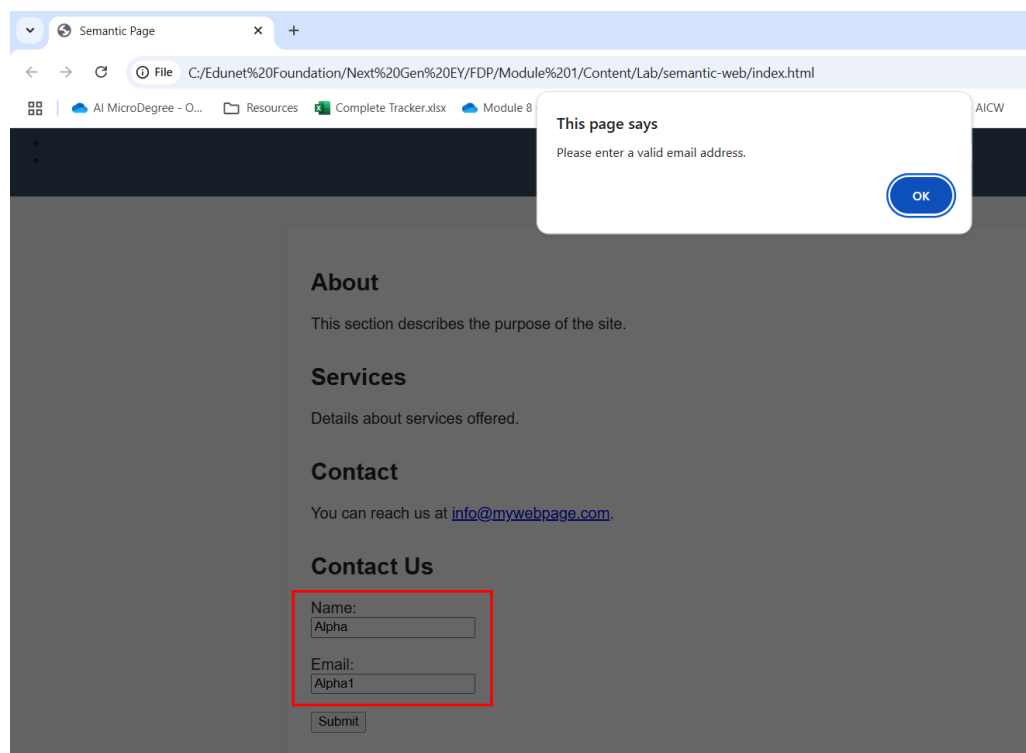
```
}
```

```
});
```

4. Preview the Page

1. Right-click index.html → **Reveal with File Explorer**. Now double-click on the index.html file to execute the file.
2. Fill the form and click **Submit**.
3. You will see validation messages appear below the form.

Incorrect Form Submission:



Correct Form Submission:

My Web Page

Home
About
Services

About

This section describes the purpose of the site.

Services

Details about services offered.

Contact

You can reach us at info@mywebpage.com.

Contact Us

Name:
Alpha

Email:
Alpha1@yahoo.com

Submit

Setting up the Environment

1. VS Code
2. GitHub Copilot enabled.

Key Outcomes

- Understanding **DOM manipulation**: document.getElementById, event handling.
- Writing form validation logic.
- Using Copilot to speed up JavaScript development.