edunet foundation

LAB MANUAL

Semantic Web Page Design with GitHub Copilot

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Objective

To create a basic **semantic HTML web page** (home page) using **HTML5 semantic tags** such as <header>, <nav>, <section>, and <footer> with the assistance of GitHub Copilot. The focus is on using AI suggestions to speed up structured layout creation.

Equipment Required

- Computer or laptop with internet connection.
- Installed software:
    - **VS Code**
    - **Node.js** (optional, only if live server or npm packages are used)
    - **Git** (optional for version control)
    - **GitHub Copilot extension** in VS Code
    - **Live Server extension** (for previewing the page)

Prerequisites

- Understanding of basic HTML structure.
- Familiarity with VS Code.
- GitHub Copilot extension installed and signed in.

Problem Statement

Design a **semantic HTML web page** with the following sections:

- A header with a site title.
- A navigation menu with three links.
- A main section with two sub-sections (About and Services).
- A footer with a copyright statement.

Use **GitHub Copilot** to assist in generating code.

Procedure

1. Set up the Project

1. Create a folder named semantic-web.
2. Open it in VS Code.

2. Create an HTML File

1. Create a file named index.html.
2. Type this comment: “Generate a basic HTML5 semantic layout with header, nav, main, section, and footer” and press ***Ctrl + I***
3. Copilot will suggest the code. Press **Tab** to accept or click on **Accept** button.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Semantic HTML5 Layout</title>
</head>
<body>
    <header>
        <h1>Website Title</h1>
    </header>
    <nav>
        <ul>
            <li><a href="#">Home</a></li>
            <li><a href="#">About</a></li>
            <li><a href="#">Contact</a></li>
        </ul>
    </nav>
    <main>
        <section>
            <h2>Section Title</h2>
            <p>This is a section of the main content.</p>
        </section>
    </main>
    <footer>
        <p>&copy; 2024 Your Name</p>
    </footer>
</body>
</html>
```

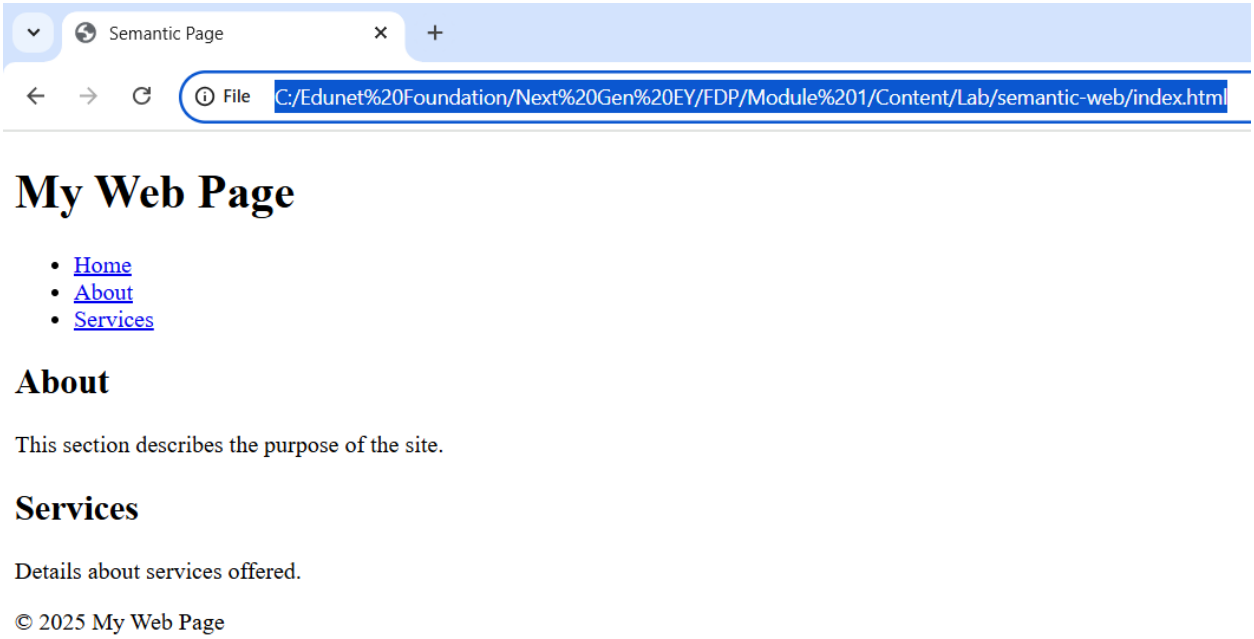
3. Accept/Modify the Copilot Code

Expected Copilot suggestion (or similar): Tell Copilot to modify the code to include a “Page Loaded Successfully” message.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Semantic Page</title>
</head>
<body>
  <header>
    <h1>My Web Page</h1>
  </header>

  <nav>
    <ul>
      <li><a href="#">Home</a></li>
      <li><a href="#">About</a></li>
      <li><a href="#">Services</a></li>
    </ul>
  </nav>

  <main>
    <section id="about">
      <h2>About</h2>
      <p>This section describes the purpose of the site.</p>
    </section>

    <section id="services">
      <h2>Services</h2>
      <p>Details about services offered.</p>
    </section>
  </main>

  <footer>
    <p>&copy; 2025 My Web Page</p>
  </footer>
    <script>
        console.log("Page loaded successfully.");
    </script>
</body>
</html>
```

4. Preview the Page

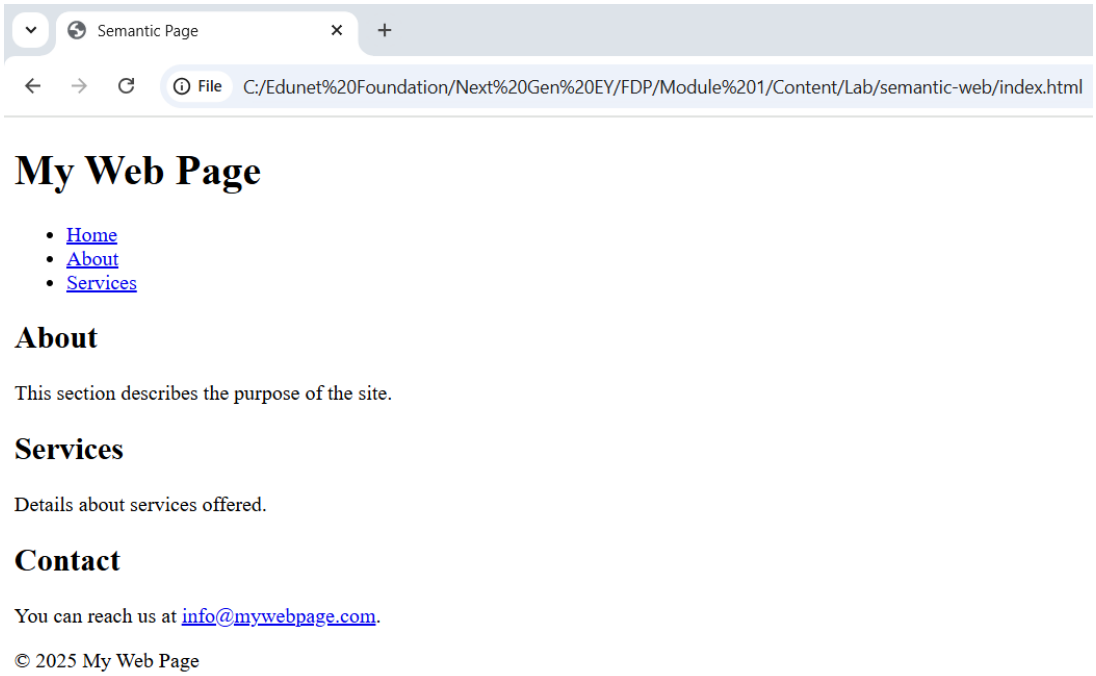
1. Click on Run > Start Debugging



Note: The "Page Loaded Successfully" message will appear on the Debug Console

5. Enhance with Copilot Suggestions

- Try typing "Add a contact section below the Services section" and accept the AI-suggested code.



Setting up the Environment

1. **VS Code extensions:**
    - **GitHub Copilot**
2. **Optional setup:**
    - Git for version control.
3. No additional frameworks or libraries are required.

Key Outcomes

- Use of semantic HTML tags.
- Understanding how Copilot accelerates coding by auto-generating repetitive structure.
- Live preview of the web page.