Lab Assignment 14.3

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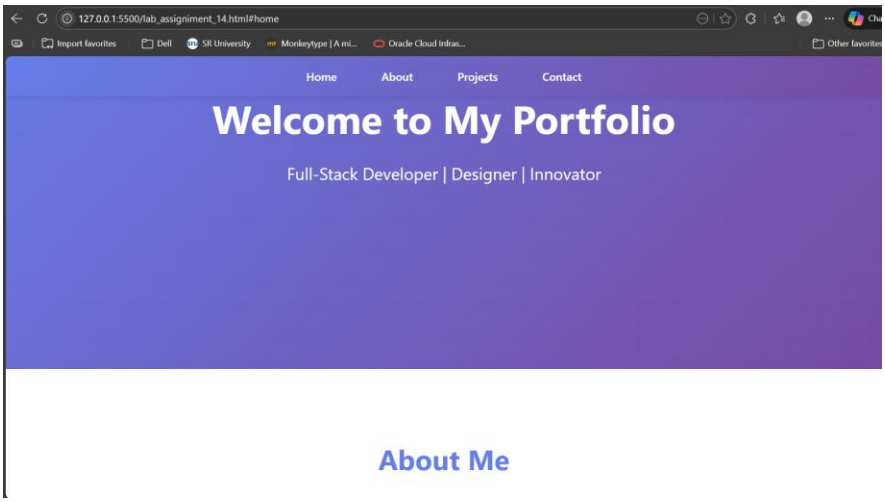
SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE		DEPARTMENT OF COMPUTER SCIENCE ENGINEERING	
Program Name: B. Tech		**Assignment Type: Lab**	**Academic Year:**2025-2026
Course Coordinator Name	Dr. Rishabh Mittal		
Instructor(s) Name	Mr. S Naresh Kumar Ms. B. Swathi Dr. Sasanko Shekhar Gantayat Mr. Md Sallauddin Dr. Mathivanan Mr. Y Srikanth Ms. N Shilpa Dr. Rishabh Mittal (Coordinator) Dr. R. Prashant Kumar Mr. Ankushavali MD Mr. B Viswanath Ms. Sujitha Reddy Ms. A. Anitha Ms. M.Madhuri Ms. Katherashala Swetha Ms. Velpula sumalatha Mr. Bingi Raju		
CourseCode	23CS002PC304	**Course Title**	AI Assisted Coding
Year/Sem	III/II	**Regulation**	R23
Date and Day of Assignment	**Week7 – Wednusday**	**Time(s)**	23CSBTB01 To 23CSBTB52
Duration	2 Hours	**Applicable to Batches**	All batches
Assignment Number:14.3(Present assignment number)/**24**(Total number of assignments)			

Q.No.	Question	*Expected Time to complete*

	Lab 14: Web Design Applications Using AI Assistance **HTML, CSS, and JavaScript Generation with GitHub Copilot** **Lab Objectives** The objectives of this laboratory exercise are to: • Design functional and visually appealing web applications using HTML, CSS, and JavaScript. • Use AI-assisted tools to accelerate front-end development. • Apply responsive, accessible, and interactive web design principles. • Customize and validate AI-generated UI code for real-world applications.	
	Learning Outcomes After completing this lab, students will be able to: • Generate structured HTML layouts using AI assistance. • Apply responsive CSS techniques such as Flexbox and Grid. • Implement interactive client-side features using JavaScript. • Critically review and improve AI-generated front-end code.	
	Tools Required • Visual Studio Code (VS Code) • GitHub Copilot Extension • Web Browser (Chrome / Firefox) • HTML5, CSS3, JavaScript (ES6)	
1	**Task 1: AI-Assisted Personal Portfolio Website** **Scenario** A student wants to showcase academic projects, technical skills, and contact information through a personal portfolio website. AI tools are used to speed up development while maintaining quality and customization. **Tasks** 1. Use GitHub Copilot to generate a semantic HTML structure with sections: o Home o About o Projects o Contact 2. Ask Copilot to suggest responsive CSS using Flexbox or Grid. 3. Customize AI-generated CSS to add: o Hover effects on project cards o Smooth scrolling navigation **Expected Outcome** • Clean and well-structured portfolio website • Responsive layout for desktop and mobile screens • Interactive project cards **Prompt:** Generate a semantic HTML portfolio website with Home, About, Projects, and Contact sections and responsive CSS using Flexbox/Grid. Add smooth scrolling navigation and hover effects on project cards. Provide index.html and style.css. **Code:**	Week7 - Wednesday

Output:



Explanation:

Using GitHub Copilot, a clean and semantic portfolio website was generated quickly with proper sections like Home, About, Projects, and Contact. The AI also suggested responsive CSS using Flexbox/Grid, making the website work well on both desktop and mobile screens. After customization, hover effects on project cards and smooth scrolling navigation improved the website's interactivity and user experience.

Task 2: AI-Generated Restaurant Landing Page

Scenario

A local restaurant requires a simple yet attractive landing page to display its offerings. The developer uses AI assistance to rapidly generate UI components.

Tasks

1. Use Copilot to create a navigation bar with links:
    - Home
    - Menu
    - Gallery
    - Contact
2. Generate a menu section styled with CSS cards.
3. Implement a JavaScript-based image slider for the gallery using Copilot suggestions.
4. Customize animations or transitions for better user experience.

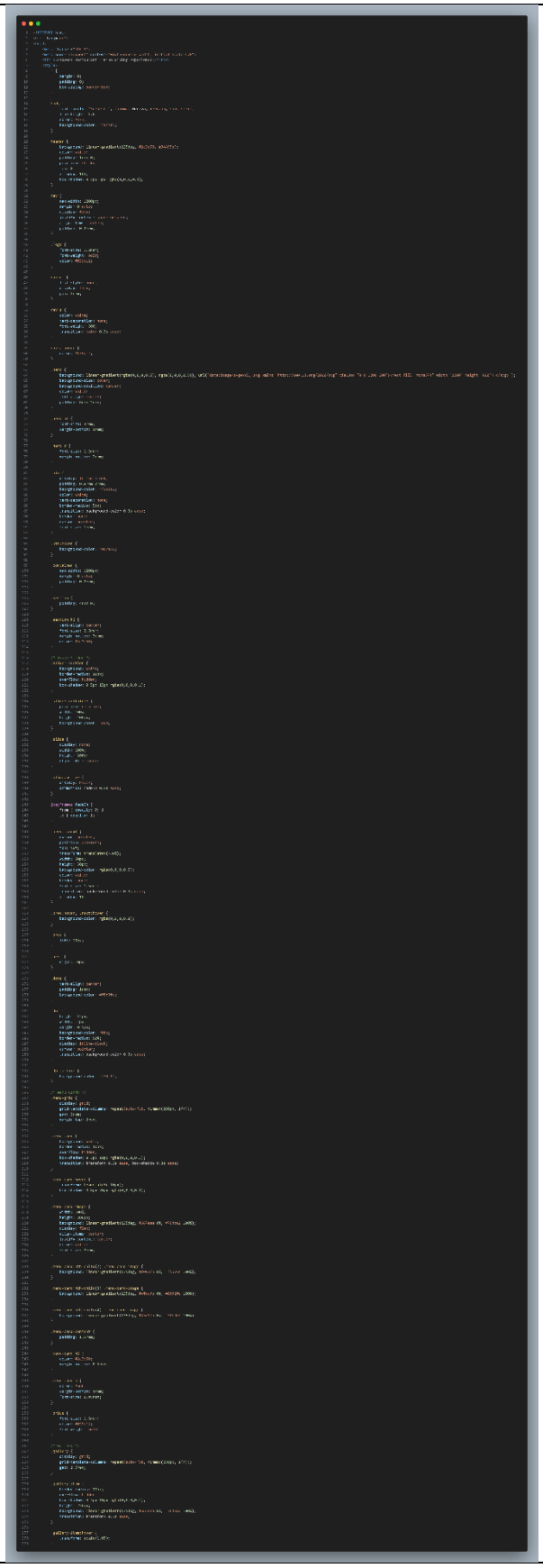
Expected Outcome

- Fully functional restaurant landing page
- Responsive navigation bar
- Working image slider with smooth transitions

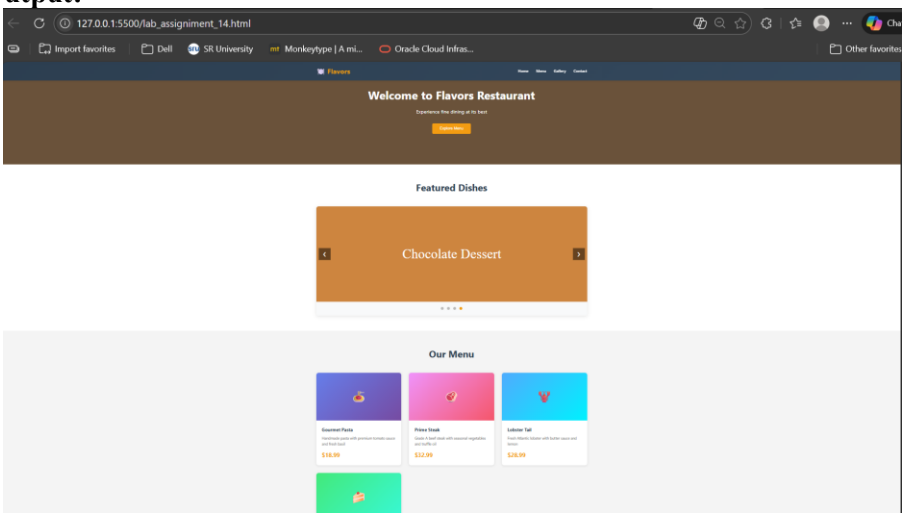
Prompt:

Generate a responsive restaurant landing page with navigation bar (Home, Menu, Gallery, Contact), menu cards using CSS, and a JavaScript image slider with smooth transitions. Provide index.html, style.css, and script.js.

Code:



Output:



Explanation:
Using GitHub Copilot, a responsive restaurant landing page was generated efficiently with a navigation bar, menu cards, and gallery section. The AI also suggested a JavaScript image slider with smooth transitions, improving visual presentation and user interaction. After customization, animations and hover effects enhanced the overall user experience and made the page more attractive and professional.

Task 3: AI-Powered Event Registration Form
Scenario
SR University is hosting a technical fest and requires an online registration form with real-time validation to ensure accurate user input.
Tasks

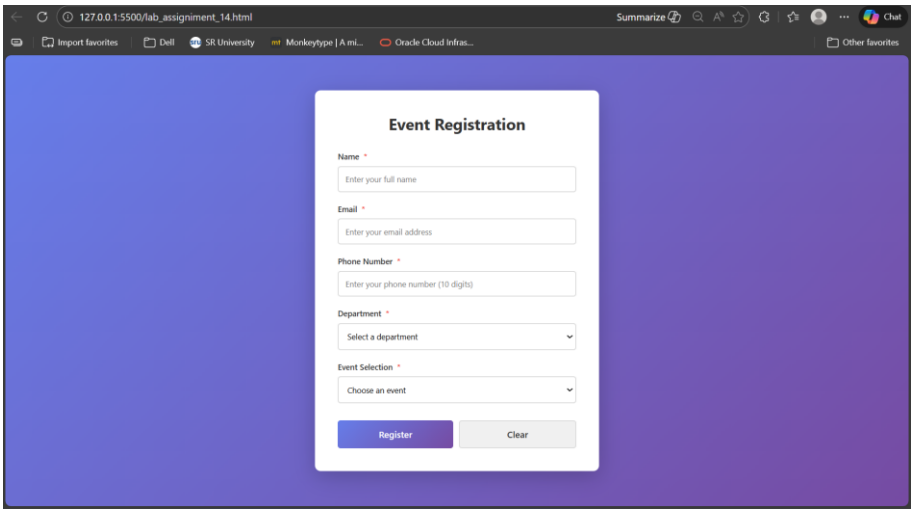
1. Ask Copilot to generate an HTML form with the following fields:
    - Name
    - Email
    - Phone Number
    - Department
    - Event Selection
2. Use AI assistance to style the form using CSS for readability and accessibility.
3. Implement JavaScript validation using Copilot:
    - Email format validation
    - Phone number length validation
    - Required field checks

Expected Outcome

- User-friendly and visually appealing form
- Real-time validation messages
- Prevention of invalid submissions

	Prompt: Generate an event registration form using HTML, CSS, and JavaScript with fields Name, Email, Phone, Department, and Event Selection. Add responsive styling and real-time validation for email format, phone number length, and required fields. Provide index.html, style.css, and script.js. **Code:**	

Output:



Explanation:

Using GitHub Copilot, a structured and visually appealing event registration form was generated quickly with proper input fields and styling. JavaScript validation was implemented to check email format, phone number length, and required fields in real time. This helped prevent invalid submissions and improved the accuracy and user experience of the registration process.

Task 4: AI-Assisted E-Commerce Product Page

Scenario

A startup is developing a basic e-commerce product page to showcase products and manage simple cart functionality.

Tasks

1. Use Copilot to generate a grid-based product catalog using HTML and CSS.
2. Implement an “Add to Cart” feature using JavaScript.
3. Modify AI-generated code to include:
    - Cart item counter at the top-right corner
    - Visual feedback when a product is added

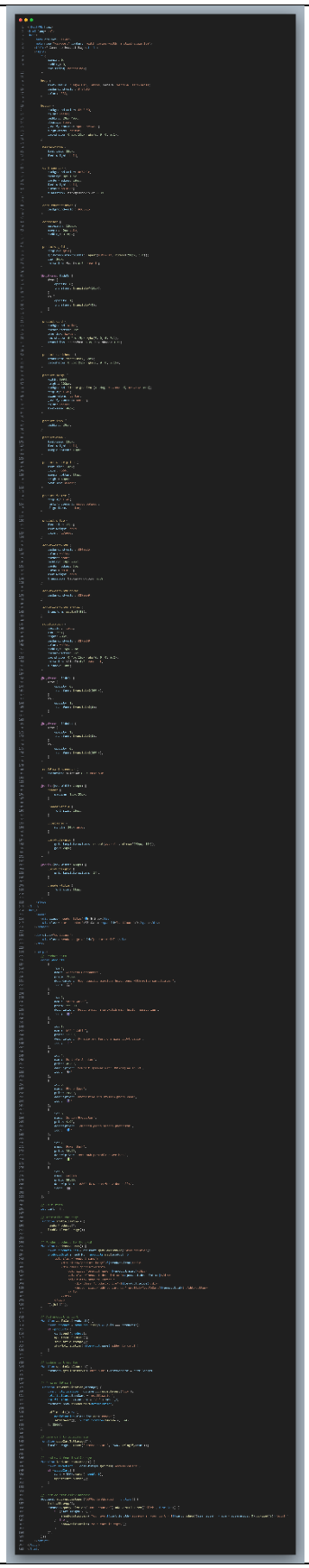
Expected Outcome

- Functional product catalog
- Working cart counter
- Interactive user experience

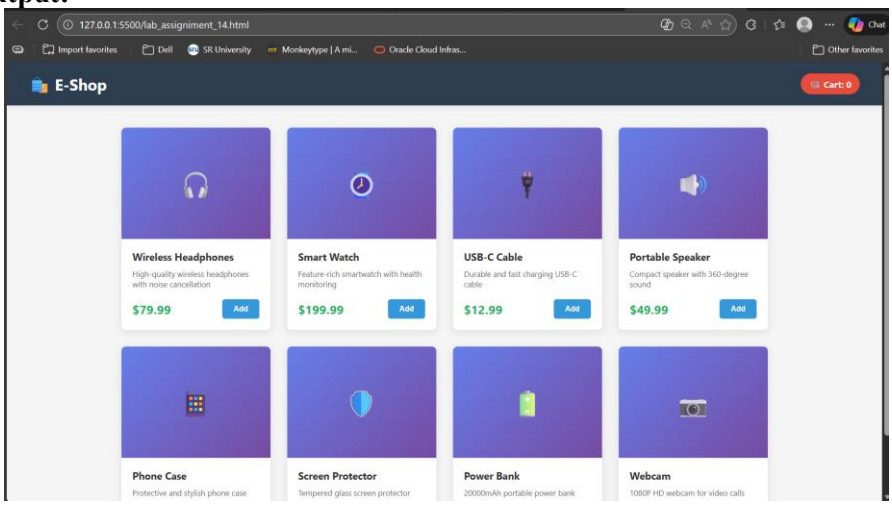
Prompt:

Generate an e-commerce product page with products displayed in a responsive grid using HTML and CSS, and implement an "Add to Cart" feature using JavaScript. Include a cart counter at top-right and visual feedback when adding items. Provide index.html, style.css, and script.js.

Code:



Output:



Explanation:

Using GitHub Copilot, a responsive product catalog was generated with products displayed in a grid layout. The JavaScript "Add to Cart" feature successfully updated the cart counter and provided visual feedback when items were added. This improved user interaction and demonstrated basic e-commerce functionality in a simple and effective way.

Task 5: Create a Responsive Web Page Layout

Instructions:

- Design a basic web page layout with a **header, main content area, and footer** using HTML and CSS.
- Use AI to assist in generating **responsive CSS** for different screen sizes.
- Ensure the layout is clean and visually organized.

Expected Output:

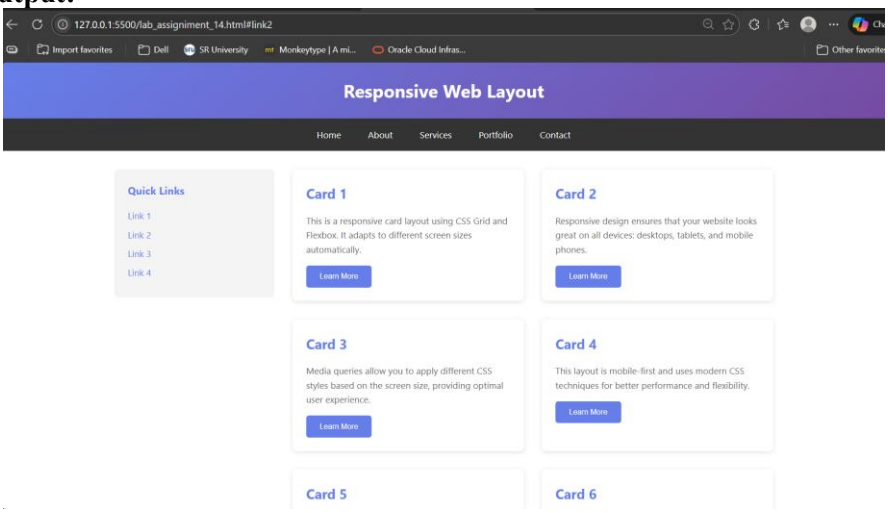
- A responsive web page with:
  - Header with navigation links
  - Main section with placeholder text/images
  - Footer with copyright or contact info
- Layout adapts correctly to desktop, tablet, and mobile screen sizes.

Prompt:

Generate a responsive web page layout with header, navigation, main content, and footer using HTML and CSS. Use Flexbox/Grid and media queries to support desktop, tablet, and mobile screens. Provide index.html and style.css.

Code:

Output:



Explanation:

Using AI assistance, a clean and responsive web page layout was generated with a header, main content area, and footer. The responsive CSS ensured the layout adapted properly to desktop, tablet, and mobile screen sizes. This improved readability, organization, and overall user experience across different devices.

Note: Report should be submitted as a word document for all tasks in a single document with prompts, comments & code explanation, and output and if required, screenshots.