International University

School of Computer Science and Engineering

Web Application Development

Laboratory

IT093IU

Lab Assignment #1

Submitted by

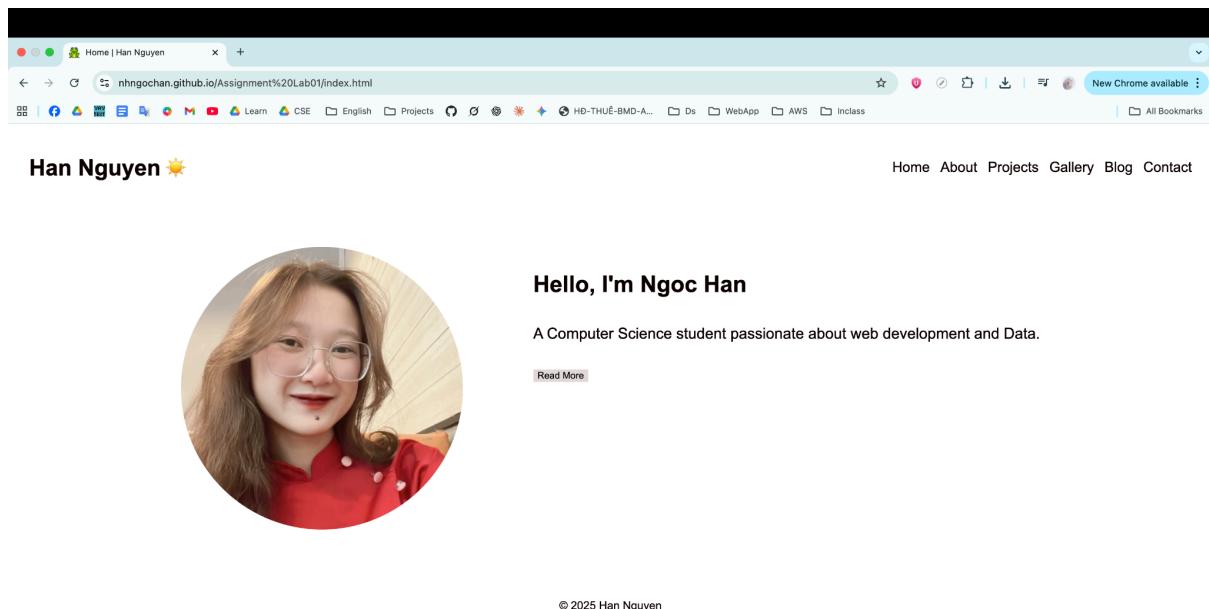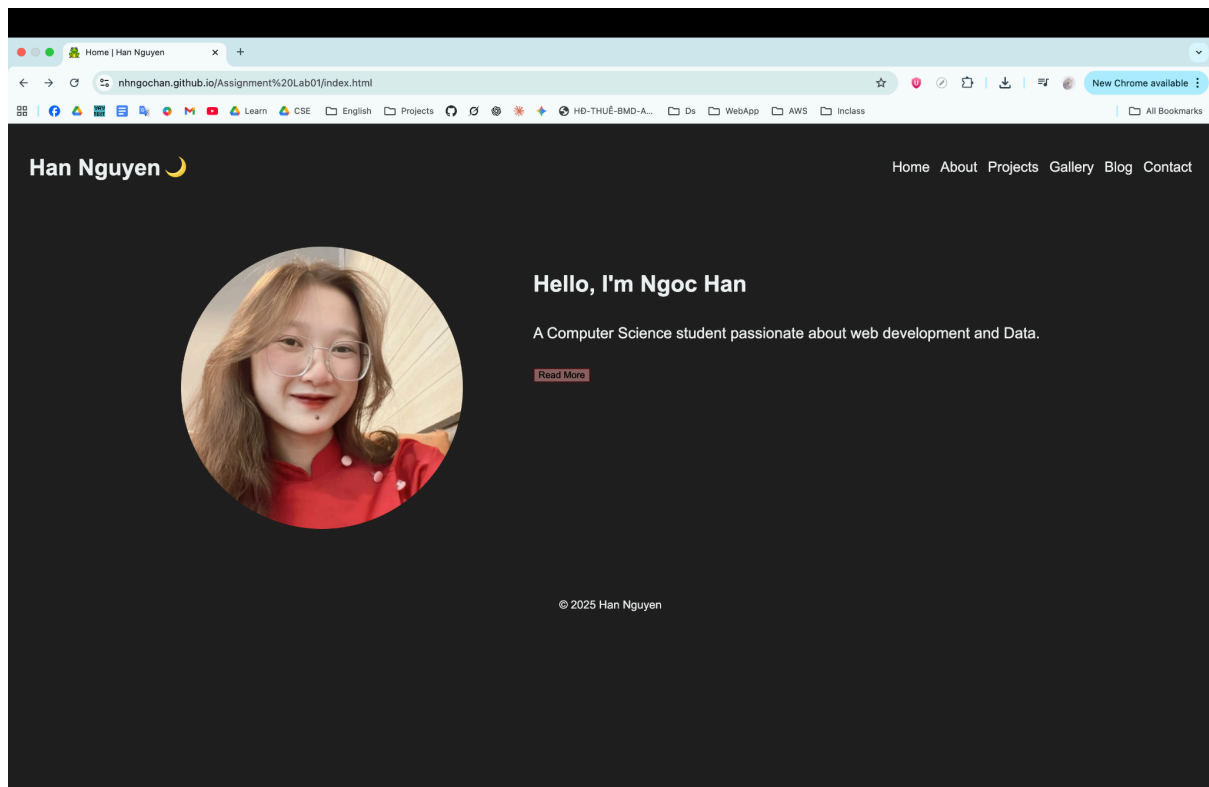**Nguyễn Hồng Ngọc Hân - ITCSIU22229**

I - Assignment Overview

This project aims to design and develop a personal portfolio website consisting of 7–10 pages. The website showcases personal information, skills, projects, a photo gallery, blog posts, and a contact form. It demonstrates the use of semantic HTML5 structure, responsive CSS layout, accessibility standards, media integration (images, videos, iframe), and a full-featured form. The final deliverable will be deployed online using GitHub Pages, ensuring usability, clean design, and optimized performance.

- Deployment link: https://nhngochan.github.io/Assignment%20Lab01/
- Source code link:

https://github.com/nhngochan/nhngochan.github.io/tree/main/Assignment%20Lab01

- Tech stack: HTML, CSS, JavaScript, Bootstrap.

# II - Project Overview

- Home page:

The Home page serves as the website's introduction and navigation hub. It's built with semantic HTML5 for clarity and accessibility. The header contains a navigation bar with links to all main sections (Home, About, Projects, Gallery, Blog, and Contact). Inside the <main> section, the "intro" area presents a circular profile image, a short introduction text, and a "Read More" button linking to the About page. The CSS file (styles.css) defines layout, typography, colors, and responsiveness using Flexbox. It includes custom variables for theme colors (--bg, --text, and --accent) and styles the avatar with border-radius: 50% to create a round image.

The JavaScript file (main.js) adds interactivity. It enables a dark/light mode toggle—when the user clicks the sun/moon icon, JavaScript toggles a .dark class on the body and dynamically updates CSS variables to switch between light and dark themes. It also includes a simple form validation script that displays a success alert when the contact form is submitted. Overall, the Home page integrates structure (HTML), design (CSS), and functionality (JS) to create an engaging and responsive introduction to the portfolio site.

- **About page:**
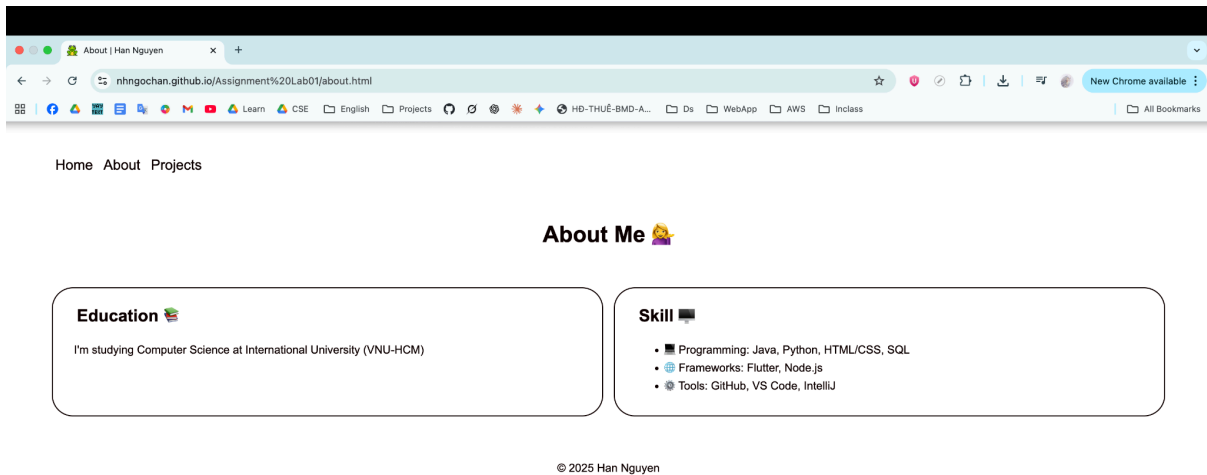
The About page (about.html) presents personal information such as education, technical skills, and a structured and readable layout. The HTML file divides the content into two primary sections, Education and Skills, using semantic elements like <section> and <article>. The CSS file makes sure the page is responsive on various screen sizes, styles these sections using Flexbox, and adds borders, rounded corners, and spacing to create a simple, card-like design.
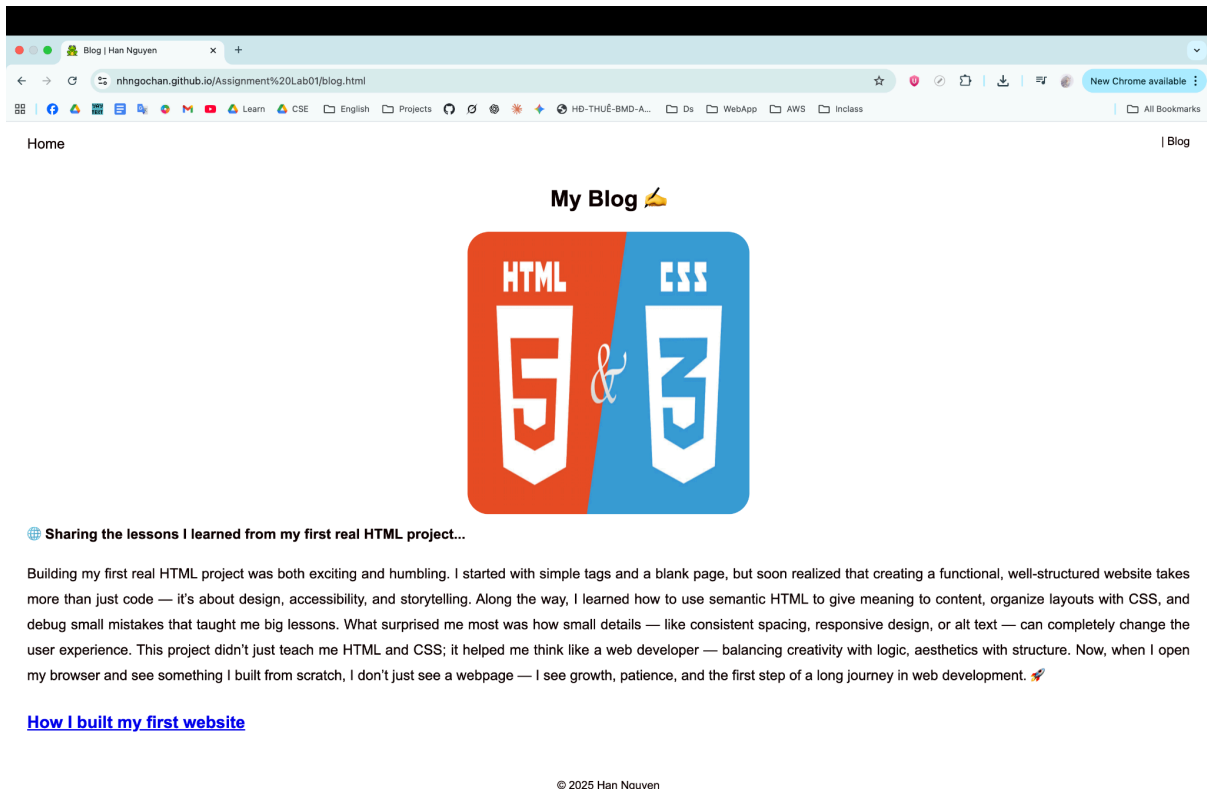
- Projects page:
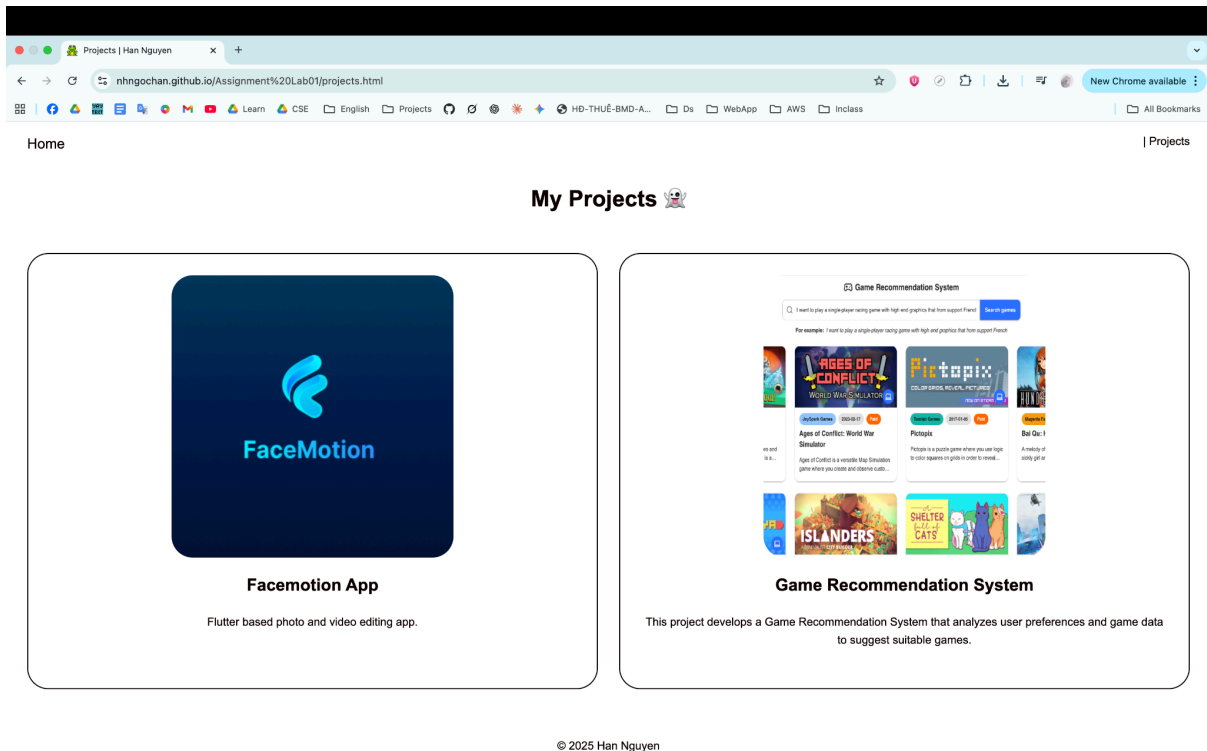
The Projects page (projects.html) showcases Han Nguyen's major works in a clean, grid-based layout. The HTML file uses <section> and <article> tags to organize each project into separate cards, containing an image, title, and short description. This structure improves readability and accessibility. The CSS file defines the visual layout using Flexbox—the .project-grid class aligns project cards side by side with equal spacing, while .project-grid-1 adds padding, borders, and rounded corners to create a neat card appearance. The .img-proj-1 class ensures images are properly sized, centered, and styled with smooth corners using border-radius. Additionally, responsive CSS rules make the grid adjust to a single column on smaller screens, ensuring usability across all devices.
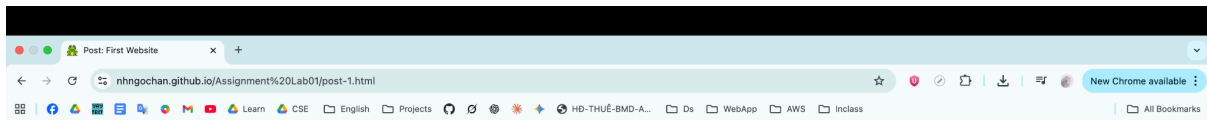
- **Gallery page:**
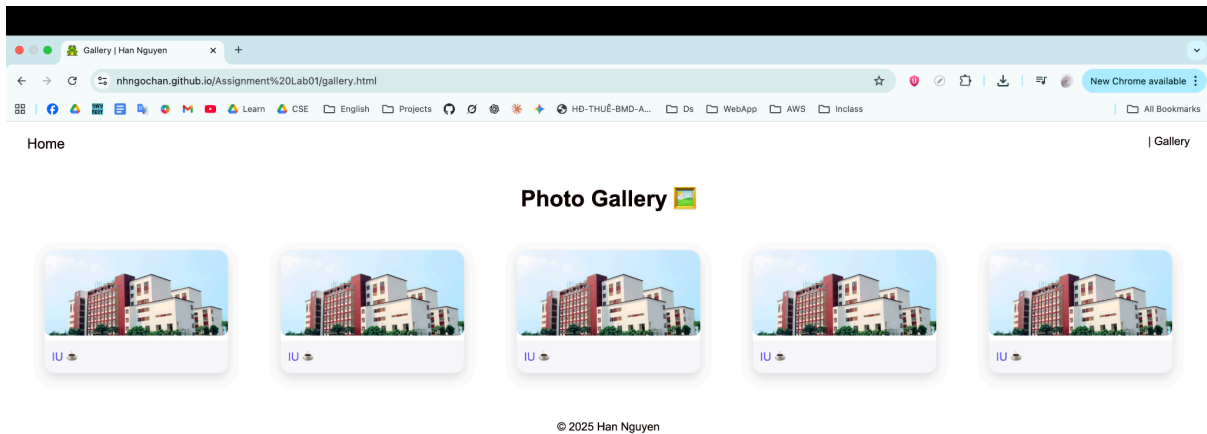
The Gallery page (gallery.html) displays a collection of images in a visually organized and responsive grid layout. The HTML structure uses semantic elements such as <section> and <figure> to group each image (<img>) with its caption (<figcaption>), improving both accessibility and clarity. The CSS file styles the gallery using a Grid layout defined by the .gallery class, which automatically adjusts the number of columns based on screen size. Each figure has a box-shadow, rounded corners, and a smooth hover animation that slightly raises the image for a modern and interactive feel. The design ensures that all images remain uniform and centered regardless of the device width. The JavaScript (main.js) script continues to handle the dark/light mode toggle, dynamically changing background and text colors across the site for visual comfort. Together, these components make the Gallery page visually appealing, well-structured, and responsive on all devices.

- **Blog page:**

My Blog ✍️

🌐 **Sharing the lessons I learned from my first real HTML project...**

Building my first real HTML project was both exciting and humbling. I started with simple tags and a blank page, but soon realized that creating a functional, well-structured website takes more than just code — it's about design, accessibility, and storytelling. Along the way, I learned how to use semantic HTML to give meaning to content, organize layouts with CSS, and debug small mistakes that taught me big lessons. What surprised me most was how small details — like consistent spacing, responsive design, or alt text — can completely change the user experience. This project didn't just teach me HTML and CSS; it helped me think like a web developer — balancing creativity with logic, aesthetics with structure. Now, when I open my browser and see something I built from scratch, I don't just see a webpage — I see growth, patience, and the first step of a long journey in web development. 🚀

How I built my first website

The Blog page (blog.html) serves as a personal writing space where Han Nguyen shares reflections and learning experiences from web development projects. The HTML file combines text and images for improved engagement and employs semantic elements like <main> and <article> to clearly structure the content. A link to a comprehensive post page (post-1.html), a large cover image, and a highlighted opening paragraph are all included in the featured post. For a neat, polished look, the blog layout is styled by the CSS file using justified text, readable paragraph spacing, and centered headings. The featured image is given rounded corners and a consistent size by the.img-proj-1 class, while the.post class regulates typography and line height to ensure comfortable reading.

- **Post page:**

The Post page (post-1.html) presents a detailed blog entry with embedded multimedia content to enhance the reading experience. The HTML structure uses <main> and <article> to separate the post's main content from other layout elements, ensuring semantic clarity and accessibility. The page features a short introduction paragraph followed by an embedded YouTube video using the <iframe> tag, allowing users to watch a tutorial directly within the page without leaving the site. The CSS file styles the content using the .post-youtube class, centering the article and video with adequate padding for visual balance. Font styles, spacing, and responsive properties ensure that both text and video adjust smoothly across different screen sizes.

- Contact page:

The Contact page (contact.html) allows visitors to reach out to Han Nguyen through a fully functional and accessible web form. The HTML file uses the <form> and <fieldset> elements to organize user inputs clearly, while labels are properly linked to input fields to enhance usability. The form includes various input types—text, email, phone, password, number, date, radio buttons, dropdowns, datalist, textarea, and hidden fields—fulfilling the project's full-featured form requirement. The CSS file

styles the form using Flexbox to center it on the page, with a white background, rounded corners, and soft shadows for a modern, card-like appearance. Each input field is consistently spaced, with smooth transitions and hover effects for interactivity. The submit and reset buttons use gradient backgrounds and a slight hover lift for visual feedback. The JavaScript (main.js) enhances functionality by validating the form and displaying a success alert upon submission.

III - Website Design and Implementation

System Design and Structure

The system design of Han Nguyen's portfolio website follows a modular and semantic structure for clarity, maintainability, and scalability. The project is organized into separate HTML files for each page—Home, About, Projects, Gallery, Blog, Post, Contact, and Map—each serving a specific purpose while sharing a consistent navigation bar and footer for uniformity. All styling rules are centralized in a single external CSS file (styles.css), which defines layout, color themes, responsiveness, and accessibility using CSS variables, Flexbox, and Grid systems. The JavaScript file (main.js) handles interactive behaviors such as dark/light mode switching and form validation, ensuring reusability across pages. The folder structure includes organized directories for images, CSS, and JavaScript assets, promoting clean code management. This modular design not only simplifies updates and debugging but also ensures the website is responsive, accessible, and easy to deploy on platforms like GitHub Pages.

Design & Styling

- External CSS (styles.css) ensures consistency across pages.
- Uses CSS variables for colors (--bg, --text, --accent).
- Responsive design via Flexbox & Grid (768 px breakpoint).
- Hover and focus states improve interactivity.
- Font size ≥ 16 px and sufficient contrast ensure readability.
- The layout adapts for both desktop and mobile users

Accessibility & Optimization

- Proper use of alt attributes for images.
- Logical heading hierarchy (h1 > h2 > h3).
- Visible focus ring for keyboard navigation.
- Optimized images (JPG/WebP format).
- Included meta viewport, meta description, and favicon.
- All pages pass W3C validation with clean HTML5 syntax.

Navigation and Page Transitions

Navigation between pages uses standard anchor links (<a>) in the header and buttons. Each click loads a new HTML page instantly, while CSS hover effects and JS t9.

AI Usage Log

Tool: ChatGPT. Used for idea generation, grammar checking, CSS improvement, and code review. Modified by student: adjusted color scheme, layout dimensions, and content structure to fit personal style and project requirements.

IV - Conclusion

In conclusion, the personal portfolio website successfully meets the project requirements for structure, interactivity, accessibility, and deployment. It reflects a strong understanding of modern web development practices through the use of semantic HTML, responsive CSS layouts, and JavaScript-driven interactivity. The site provides visitors with a clear overview of Han Nguyen's profile and work while maintaining an appealing and consistent user experience. Overall, this project highlights the importance of combining creativity, technical skill, and usability in building an effective personal website.