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دولة فلسط ·ي جامعة
الأقصى- غزة
كلية الحاسبات وتكنولوجيا المعلومات قسم
الهندسة والشبكات

Web Programming Course - Final Project Proposal

Student Information

Student Name(s)

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Project Overview

Project Title

Technology store

Project Description

This project is a front-end web application that represents an online technology store designed to display and organize various electronic products in a professional and user-friendly way. The main purpose of this project is to apply fundamental web development concepts while simulating a real-world e-commerce platform that allows users to explore modern technology products easily and efficiently.

The website is developed using **HTML and CSS**, with a strong focus on clean structure, responsive layout, and attractive visual design. The homepage acts as the central hub of the website, welcoming users with a landing section that introduces the store and highlights the importance of modern technology in everyday life. Clear navigation links allow users to move smoothly between different pages, including product categories such as phones, smart watches, and accessories.

Each category page presents products in a card-based layout, where every product card contains an image, product name, and price. This layout improves readability and enhances the overall shopping experience. CSS Flexbox is used extensively to control alignment, spacing, and responsiveness across different screen sizes. Interactive elements such as hover effects on product cards and buttons are included to make the interface more dynamic and engaging.

In addition to product browsing, the project includes a login page that simulates user authentication, which is a core component of most e-commerce websites. Although the current version of the project does not include backend functionality, it is designed in a way that allows future expansion. JavaScript can be added to implement features such as search functionality, shopping cart management, and form validation, while backend technologies could be integrated to support real user accounts and online transactions.

Overall, this project demonstrates essential front-end development skills, including website structure, styling, navigation design, and basic user experience principles. It serves as a solid academic project and provides a strong foundation for building a fully functional and scalable online technology store in the future.

Problem Statement (optional)

Many online shopping websites suffer from poor design, unclear navigation, and unorganized product displays, which can make it difficult for users to find the products they are looking for. In addition, web development students often need practical projects that help them apply HTML and CSS concepts in a real-world scenario. There is a need for a simple, well-structured technology store website that demonstrates good layout design and user-friendly navigation.

Solution Approach (optional)

This project addresses the problem by developing a website for a tech store using HTML and CSS. The site offers easy navigation between product categories and displays them in a well-organized card-based design. CSS Flexbox and scrolling effects were also used to improve design consistency and user interaction.

Target Audience(optional)

The target audience includes university students learning front-end development, beginners in web design, and users who prefer a simple and clear interface for browsing technology products online.Technical Specifications

Tech Stack

Frontend Technologies

- **Framework/Library:**
  Pure HTML (No framework used)
- **Styling:**
  CSS3 (Flexbox for layout and responsive design)
- **Additional Tools:**
  Google Fonts (Roboto)
  Basic CSS hover effects for UI interaction

Backend Technologies

Frontend-only project

Development Tools & Environment

- **Version Control:**
  GitHub (Repository link to be provided)
- **Code Editor:**
  Visual Studio Code (VS Code)
- **AI-Powered Development Tools:**
  ChatGPT
- **Package Manager:**
  Not used (No external dependencies)

Project Features & Functionality

Core Features

1. Homepage with Landing Section A visually appealing homepage that introduces the technology store and highlights modern electronic products.

2. Product Category Pages Separate pages for different product categories such as phones, smart watches, and accessories for easy browsing.

3. Card-Based Product Display Products are displayed in clean, organized cards showing product image, name, and price.

4. Responsive Layout Design The website uses CSS Flexbox to ensure proper alignment and usability across different screen sizes.

5. User Login Page A login interface that simulates user authentication for a real e-commerce experience.

Development Approach

AI Tools Integration

AI tools such as ChatGPT are used to assist during development by helping with code writing, fixing errors, and improving layout and design ideas. AI is also used to generate documentation and organize project content, which saves time and improves productivity. This support makes the development process faster and more efficient.

Technical Requirements

Full-Stack Implementation

Although the current version of the project focuses mainly on the front-end, it demonstrates full-stack concepts through its structure and design. The front-end is implemented using HTML and CSS to handle user interface, navigation, and product presentation. The project is designed to be easily extendable to a backend system where server-side logic (such as user authentication, product management, and order processing) can be implemented using a backend language and database. This separation between presentation and data logic reflects full-stack development principles.

Responsive Design

Yes.
The layout is designed with simplicity and flexibility in mind, ensuring that content remains readable and usable on smaller screens. Flexible units and CSS Flexbox are used to adapt the layout across devices.

Responsiveness is tested using browser developer tools (Chrome DevTools) by resizing the screen and simulating different devices. Manual testing is also performed on different screen sizes to ensure proper layout, alignment, and usability.

Expected Challenges & Solutions

Potential Challenges

1- File Path & Navigation Errors: Difficulty linking pages together (such as with the Clocks page) due to naming errors or spacing issues in file names.

2- Responsive Layout (Flexbox): The challenge of ensuring that elements (buttons and cards) appear consistently next to each other and are correctly centered across different screen sizes.

3- Visual Consistency: Maintaining a consistent visual identity for the store (consistent colors, uniform image sizes) across all pages.

Proposed Solutions

1- Strict Naming Convention: Adopt a consistent file naming convention (e.g., use lowercase letters and dashes instead of spaces) and ensure all files are placed in a single root folder.

2- Mastering Flexbox & Grid: Use the `display:flex` property extensively to control automatic spacing and use `gap` instead of manual margins to avoid conflicts.

3- CSS Global Variables or Classes: Create global classes (such as .btn and .cart) and reuse them on every page to ensure that the design is consistent and professional.

Learning Objectives

New Technologies/Skills to Learn

1- Advanced CSS Positioning: Master Flexbox for arranging complex elements such as headers and product grids.

2- Image Optimization: Learn how to use the object-fit property to control the appearance of images within code tags.

3- Interactive UI: Learn how to add interactive effects using `hover` and simple JavaScript (such as `onclick`) to enhance the user experience.

Course Concepts Application

1- HTML Structure: Applying correct structuring concepts using appropriate tags (div, header, button, anchor tags).

2- Separation of Concerns: Practicing separating content (HTML) from formatting (CSS) to ensure easy modification.

3- Box Model: Understanding and applying the concepts of padding, margin, and border to precisely control space within the store.

Resources & References

Documentation & Tutorials

-Moodle Course Resources: Refer to the files uploaded to the Moodle platform and the educational channels recommended by your instructor to understand the fundamentals and requirements of the project.

-YouTube Tutorials (JavaScript Events): Watch practical tutorials on YouTube to learn how to use simple JavaScript events like onclick to enable interactive page navigation.

- Product Cards Design Guides: Research and follow specialized tutorials on product card design to ensure consistency of visual elements and user experience.

Inspiration/Similar Projects

- Amazon & Noon: Inspiration in the way products are displayed in a grid and how to use clear buttons to filter products (such as the "Phones" and "Watches" buttons that I added).

- Explanations from YouTube channels: Inspiration for the design of the header and the distribution of links in a way that is consistent with the store's logo.

Additional Notes

- Problem solving: The use of artificial intelligence helped in solving problems related to complex elements such as the Flexbox, and in providing suggestions to improve the user experience (UX) within the store.

- Learning Integration: The use was not limited to bringing the code ready-made, but it was used as a reference to explain logical errors and clarify how to avoid them in future projects.