**Front-End UI/UX Mini Project**

**Project Submission Template**

**1. Title Page**

* **Project Title**: *e.g., "E-commerce Product Page"*
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* **Course**: *e.g., UI/UX Design Fundamentals*
* **Instructor Name**: *Dhiraj Alate*
* **Institution**:  *Christ University*
* **Date of Submission**: *26/09/2025*

**2. Abstract**

This project involved the design and development of a responsive e-commerce product page using HTML, CSS, JavaScript, and the Bootstrap framework. The primary goal was to create a visually appealing and user-friendly interface that effectively showcases a product and encourages purchases. Key features include a multi-image carousel, detailed product descriptions with pricing, a customer reviews section with star ratings, and a prominent "Add to Cart" button with a confirmation modal. The project emphasizes a clean, modern design and a fully responsive layout to ensure a seamless user experience across desktops, tablets, and mobile devices.

**3. Objectives**

 **Design a User-Centric Interface:** To create a visually appealing and intuitive product page that guides the user towards making a purchase.

 **Implement a Dynamic Product Showcase:** To use a Bootstrap carousel to display multiple product images, allowing customers to view the item from various angles.

 **Structure Information Clearly:** To organize product details, specifications, and customer reviews in a clean and accessible manner using tabs and cards.

 **Create a Clear Call-to-Action:** To implement a prominent "Add to Cart" button that provides user feedback through a confirmation modal.

 **Ensure Full Responsiveness:** To utilize the Bootstrap 5 grid system and components to ensure the page layout adapts seamlessly to desktops, tablets, and mobile devices.

 **Enhance User Experience with JavaScript:** To add light interactivity for features like the image carousel, modal pop-up, and the related products scroller.

**4. Scope of the Project**

The project is focused exclusively on the front-end design and development of a single, static e-commerce product page. The scope includes a multi-image product gallery, a detailed product description with pricing, customer review displays, and an interactive "Add to Cart" button that triggers a confirmation modal. The layout is built to be fully responsive for desktop, tablet, and mobile views using the Bootstrap 5 framework.

The scope is limited to front-end implementation only. It does not include any back-end functionality, such as a working shopping cart, user account systems, inventory management, or payment gateway integration. All content, including products and reviews, is static and hard-coded for demonstration purposes.

**5. Tools & Technologies Used**

|  |  |
| --- | --- |
| Tool/Technology | Purpose |
| HTML5 | Markup and content structure |
| CSS3 | Styling and layout management |
| VS Code | Code editor |
| Chrome DevTools | Testing and debugging |
| JavaScript | Handling DOM manipulation for interactive features (e.g., scroller). |
| Bootstrap 5 | Responsive grid system and pre-built UI components (Carousel, Modal, Tabs). |
| jQuery | Used alongside Bootstrap's JS bundle for certain components. |
| Font Awesome | Providing scalable vector icons for UI elements. |

**6. HTML Structure Overview**

The website uses a single index.html file built with semantic HTML5 elements such as <nav>, <main>, <section>, and <footer> for a logical and accessible structure. The layout is managed by Bootstrap's grid system (container, row, col). Key Bootstrap components like the Carousel (#productCarousel), Tabs (#productTab), and Modal (#cartModal) are used to create interactive and organized content sections.

**7. CSS Styling Strategy**

An external CSS file (style.css) is used for all custom styling to maintain separation of concerns and ensure consistency. The design implements a custom color scheme inspired by e-commerce platforms like Flipkart (blue and yellow). Custom styles are applied to enhance Bootstrap's default components, and hover effects are used on buttons and cards to improve user interaction. A custom horizontal scroller with arrow buttons was created for the "Related Products" section to provide a better user experience

**8. Key Features**

|  |  |
| --- | --- |
| Feature | Description |
| Responsive Design | The layout seamlessly adapts to desktop, tablet, and mobile screen sizes using the Bootstrap grid. |
| Product Image Carousel | Allows users to cycle through multiple high-quality images of the product. |
| Tabbed Information | Organizes product details into "Overview," "Specs," and "Details" tabs to avoid clutter. |
| Add-to-Cart Modal | A pop-up modal confirms that the item has been successfully added to the cart, enhancing user feedback. |
| Related Products Scroller | An interactive horizontal scroll container to showcase related items, with custom navigation arrows. |
| Customer Reviews | Displays social proof with star ratings and user testimonials in a clean card-based layout. |

**9. Challenges Faced & Solutions**

|  |  |
| --- | --- |
| Challenge | Solution |
| Horizontal overflow on "Related Products" | Used CSS overflow-x: auto to create a scrollable container. Implemented custom JavaScript-powered arrow buttons for easier navigation on desktop. |
| Ensuring consistent branding and theming | Created custom CSS classes (.btn-yellow, .text-yellow) to override Bootstrap defaults and maintain a consistent color palette throughout the page. |
| Making UI elements interactive and engaging | Added subtle CSS transitions for hover effects on buttons and cards (transform: scale()) to provide visual feedback to the user. |

**10. Outcome**

A fully functional and visually compelling e-commerce product page was successfully developed. The project meets all its objectives by presenting product information in a structured, attractive, and user-friendly manner. The final design is fully responsive, providing an optimal viewing experience across all devices and demonstrating a strong practical understanding of front-end technologies like HTML, CSS, JavaScript, and Bootstrap.

**11. Future Enhancements**

 **Live Data Integration**: Connect the page to a backend API to fetch product details, prices, and reviews dynamically.

 **Functional Cart**: Implement a complete shopping cart feature where users can manage quantities and proceed to a real checkout.

 **Image Zoom**: Add a zoom-on-hover feature for the product images to allow for closer inspection.

 **Write a Review Form**: Include a form for users to submit their own reviews and ratings for the product.

**12. Sample Code**

**SAMPLE CODE FOR E-COMMERCE PRODUCT PAGE**

**A screenshot of a computer program

AI-generated content may be incorrect.**

Fig 1. index.html

A screen shot of a computer program

AI-generated content may be incorrect.

Fig 2.

A screen shot of a computer code

AI-generated content may be incorrect.

Fig 3.

**A screen shot of a computer program

AI-generated content may be incorrect.**

**Fig 4.**

**A screen shot of a computer program

AI-generated content may be incorrect.**

**Fig 5.**

**A screen shot of a computer program

AI-generated content may be incorrect.**

**Fig 6.**

**13. Screenshots of Final Output**

**A screenshot of a smart watch

AI-generated content may be incorrect.**

**A screenshot of a smart watch

AI-generated content may be incorrect.**

**A screenshot of a computer

AI-generated content may be incorrect.**

**A screenshot of a smartwatch

AI-generated content may be incorrect.**

**14. Conclusion**

This project was an excellent practical exercise in front-end web development. It provided hands-on experience in implementing a modern, responsive design using the Bootstrap framework, enhancing user interaction with JavaScript, and applying custom CSS to achieve a specific brand aesthetic. The process of building each component—from the image carousel to the interactive modal—solidified our understanding of how to create an effective and engaging user experience for an e-commerce platform.

**15. References**

** Bootstrap 5 Documentation:** [**https://getbootstrap.com/docs/5.3/**](https://getbootstrap.com/docs/5.3/)

** Font Awesome:** [**https://fontawesome.com/**](https://fontawesome.com/)

** jQuery:** [**https://jquery.com/**](https://jquery.com/)

L&T LMS : https://learn.lntedutech.com/Landing/MyCourse