COMSATS UNIVERSITY ISLAMABAD, SAHIWAL CAMPUS, COMSATS ROAD OFF GT ROAD, SAHIWAL

Project Report

(Online E-commerce Store with Admin Dashboard)

For

Trade Hub

Version 1.0

By

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♦ Project Title

E-commerce Store

♦ Project Advisor

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♦ Advisor's Consent

I Prof. /Dr. /Mr. /Ms. _____ am willing to guide these students in all phases of above-mentioned project / thesis as advisor. I have carefully seen the Title and description of the project / thesis and believe that it is of an appropriate difficulty level for the number of students named above.

Supervisor's Signature

➢ SCOPE DOCUMENT REVSION HISTORY

No.	Comment	Action

Supervisor Signature

Date:

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Project Category

(Select all the major domains of proposed project**)**

☐ **A-** Desktop Application/Information System

■ **B-** Web Application/Web Development

☐ **C-** Problem Solving and Artificial Intelligence

☐ **D**-Simulation and Modeling

☐ **E-** Smartphone Application

☐ **F-** Image Processing

☐ Other (specify category) _____

Abstract

The primary objective of this project is to serve as a platform for users to browse and purchase products online. It will incorporate features such as an intuitive user interface, product categorization and search functionality.These features aim to enhance the overall user experience, making online shopping convenient, accessible, and tailored to individual preferences.The admin dashboard, on the other hand, will empower system administrators to efficiently manage various aspects of the ecommerce business. Key functionalities of the admin dashboard include inventory management, order tracking, sales analytics, customer support tools, and user management capabilities. By providing comprehensive tools and insights, the admin dashboard will enable administrators to streamline operations, make informed business decisions, and ensure customer satisfaction.Throughout the project, a thorough analysis of existing ecommerce systems and relevant literature will be conducted to identify industry best practices and leverage the latest technologies. This analysis will serve as a foundation for designing and implementing the proposed system, ensuring it aligns with market requirements and remains competitive in the dynamic ecommerce landscape.

1. Introduction

In today's digital age, ecommerce has become an integral part of the global economy. Online shopping has gained immense popularity due to its convenience, accessibility, and wide range of products available at the click of a button. As the ecommerce industry continues to expand, there is a growing need for robust and efficient systems that can enhance the shopping experience for customers and streamline the management of online businesses.This project aims to develop an ecommerce application and an accompanying admin dashboard to address the limitations of traditional shopping methods and provide an integrated solution for both customers and administrators. The ecommerce application will offer a user-friendly interface, advanced search functionality, and personalized user accounts. On the other hand, the admin dashboard will empower system administrators with tools for inventory management, order tracking, sales analytics, customer support, and user management.By leveraging the power of technology, this project seeks to revolutionize the way people shop online, making it a seamless and enjoyable experience. Additionally, the admin dashboard will provide administrators with comprehensive insights and efficient management tools to optimize operations, increase productivity, and drive business growth.

2. Problem Statement

Traditional shopping methods often involve physical visits to stores, limited product availability, and time-consuming transactions. Furthermore, managing an ecommerce business can be challenging without proper tools to track inventory, manage orders, and analyze sales data. These limitations hinder the potential for growth and profitability for both customers and businesses.

Inadequate user experiences, such as difficult navigation, inefficient search functionality, and lack of personalization, can lead to customer frustration and decreased conversion rates. For administrators, manual processes for inventory management, order tracking, and customer support can result in errors, delays, and inefficiencies, hindering the ability to scale the business effectively.

There is a pressing need for a comprehensive ecommerce application and admin dashboard that address these challenges, providing customers with an intuitive and personalized shopping experience while empowering administrators with the necessary tools to streamline operations, optimize performance, and maximize revenue.

3. Problem Solution for Proposed System

The proposed system offers a holistic solution to the challenges faced by traditional shopping methods and existing ecommerce platforms. By developing an advanced ecommerce application and admin dashboard, this project aims to revolutionize online shopping and business management.

The ecommerce application will provide customers with a user-friendly interface, seamless navigation, and personalized accounts, enabling them to browse, search, and purchase products effortlessly. Integrated payment gateways will ensure secure transactions, and advanced search functionality will help customers find their desired products quickly. Additionally, personalized user accounts will allow customers to track orders, manage preferences, and receive tailored recommendations, enhancing their overall shopping

experience.By combining these features, the proposed system will provide an integrated solution that enhances the overall ecommerce experience for both customers and administrators. It will address the limitations of traditional shopping methods and existing ecommerce platforms, enabling businesses to thrive in the digital marketplace.

4. Functional and Non-Functional Requirements

The proposed system will encompass a comprehensive set of functional requirements to ensure a seamless user experience and efficient operations. These requirements include:

User Registration and Login

The system will provide a user-friendly registration process, allowing customers to create accounts and securely log in using their credentials. This functionality will enable personalized experiences and order tracking.

Product Browsing and Search

Users will be able to browse through a wide range of products, organized into categories and subcategories. A robust search feature will enable users to quickly find specific products based on keywords, filters, or sorting options.

Shopping Cart Functionality

The system will incorporate a shopping cart feature, allowing users to add products, review their selections, modify quantities, and proceed to checkout. The cart will retain selected items across sessions and facilitate a smooth checkout process.

Order Placement and Tracking

Customers will be able to place orders, specify shipping details, and select payment methods. The system will generate order confirmations and provide users with tracking information to monitor the progress of their orders.

Payment Integration

The system will integrate popular payment gateways, enabling secure and seamless transactions. Customers will have the flexibility to choose from multiple payment options, such as credit/debit cards, digital wallets, or bank transfers.

Customer Support Features

The system will offer various customer support features, including a contact form, live chat, and a comprehensive FAQ section. These features will ensure prompt assistance and address common queries, enhancing customer satisfaction.

In addition to functional requirements, the proposed system will address a range of non-functional requirements. These include:

Scalability

The system will be designed to accommodate growth and handle increased user traffic and product inventory without compromising performance.

Performance

The system will be optimized for fast loading times, smooth navigation, and efficient data processing to provide a seamless user experience.

Security

Robust security measures will be implemented to protect user data, secure transactions, and prevent unauthorized access or data breaches.

Responsiveness

The system will be developed with a responsive design, ensuring compatibility and optimal user experience across various devices, including desktops, tablets, and mobile devices.

Cross-Browser Compatibility

The system will be tested and optimized to ensure compatibility with major web browsers, allowing users to access and use the application seamlessly regardless of their browser preferences.

5. Advantages

1. Enhanced user experience with intuitive navigation, personalized accounts, and easy product discovery.
2. Efficient management of inventory, orders, and customer interactions through the admin dashboard.
3. Increased sales and revenue potential through a well-designed and user-friendly ecommerce platform.
4. Improved customer satisfaction and loyalty through reliable order tracking and prompt customer support.

6. Scope

The proposed system will encompass the development of both the ecommerce application and the admin dashboard. The ecommerce application will provide a wide range of features to support online shopping, including support for multiple product categories, secure payment options, and personalized user accounts. Customers will be able to browse through an extensive catalog, search for specific items, and conveniently complete their purchases. The admin dashboard will serve as a comprehensive management tool, allowing administrators to efficiently handle inventory, process orders, and monitor sales performance. The system will be designed with scalability in mind, allowing for future enhancements and integrations to meet the evolving needs of the business. With a focus on user experience and functionality, the proposed system aims to provide a robust and flexible solution for the ecommerce industry.

7. Modules

7.1 User Management

1. Allows users to create and manage their accounts.
2. Provides authentication and authorization functionalities for secure access.
3. Enables users to update their personal information and preferences.

7.2 Product Catalog

1. Displays a comprehensive list of available products.
2. Allows users to search, filter, and sort products based on various criteria.
3. Provides detailed product descriptions, images, and pricing information.

7.3 Shopping Cart

1. Allows users to add products to their cart for later purchase.
2. Provides options to adjust quantities, remove items, and calculate totals.
3. Facilitates a smooth checkout process by collecting necessary information.

7.4 Order Management

1. Enables users to review and track their orders.
2. Allows administrators to manage order processing, including order status updates and shipping details.
3. Generates order invoices and provides notifications to both users and administrators.

7.5 Reporting and Analytics.

1. Generates reports and analytics on sales, revenue, and customer behavior.
2. Provides insights into popular products, customer preferences, and shopping patterns.
3. Helps administrators make informed decisions for marketing strategies and inventory planning.

7.6 Admin Dashboard.

1. Provides a centralized interface for administrators to manage the ecommerce system.
2. Allows administrators to configure system settings, manage user accounts, and customize the website's appearance.
3. Offers data visualization tools and access to various modules for efficient management and monitoring.

7.7 Inventory Management.

1. Allows administrators to manage product inventory, including stock levels and availability.

2. Provides notifications for low stock or out-of-stock items to ensure timely replenishment.
3. Facilitates inventory tracking and reporting for effective stock management.

8. System Limitations

1. Limited scope for physical product handling and shipping logistics, which will require integration with third-party services.
2. Language and geographical limitations may affect the system's availability and reach.
3. The system's performance may be influenced by the network connectivity and hosting infrastructure.

9. Software Process Methodology

I would choose an agile methodology. Agile methodology involves incremental and iterative development, where the project is divided into smaller parts, and each part is developed and tested iteratively. This methodology provides flexibility and allows for changes and modifications to be made at any stage of the development process Agile methodology is suitable for this project because it is a complex project, and requirements may change during the development process. Additionally, it allows for a faster time-to-market, which is essential for a this web application.

Figure 1: Agile Methodologies

10.Tools and Technologies

Table 1: Tools and Technologies for Proposed Project

	Tools	Version	Rationale
Tools And Technologies	Visual Studio Code	1.76	IDE
	Adobe Photoshop	2023 [24.3]	Design Work
	MS Word	2019	Documentation
	MS Power Point	2019	Presentation
	Figma	2023	Mockups Creation
	Technology	**Version**	**Rationale**
	JAVASCRIPT	ES2022	Programming Language
	HTML	5.0	Markup Language
	CSS	3.0	Styling Language
	PHP	8.2	Database
	JQuery	3.7.0	Javascript Library

11.Project Stakeholders and Roles

Table 2: Project Stakeholders for Proposed Project

Project Sponsor	• **COMSATS University Islamabad, Sahiwal Campus**
Stakeholder	• **Muddasar Hussain** • **Naeem ur Rahman Sajid** • **Mam Syeda Fatima** • **Sir Muhammad Aamir.**

12.Team Members Individual Tasks

Table 3: Team Member Work Division for Proposed Project

Student Name	Registration Number	Responsibility/ Modules
Muddasar Hussain	**FA20-BCS-083**	**Prototype, Documentation and Designing.**
Naeem ur Rahman Sajid	**FA20-BCS-099**	**Documentation, Designing and Coding.**

13.Gathering Approach

13.1. Interviews

Conducting interviews with customers and sellers so that they can provide insights into their needs and expectations from the website.

13.2. Questionnaires

Creating online questionnaires can help in collecting feedback from a larger audience, including young generation of boys and girls, on their experience with the current online stores and their suggestions for improvements.

13.3. Observation

Observing the current online e-commerce stores and identifying its pain points can help in developing a comprehensive solution that caters to the specific needs of the university.

13.4. Focus Groups

Holding focus group sessions with customers, sellers, and brands can provide an opportunity for them to share their opinions and feedback on the proposed app features and functionalities.This would help to gather firsthand information about their needs, expectations, and preferences related to the website.

Secondary research methods would involve gathering information from

1) Existing reports
2) Studies
3) Publications related to E-commerce store.

14.Concepts

■ Web App development

The proposed project will require learning web development concepts using relevant technologies and programming languages.

■ User Interface (UI)/User Experience(UX) Design

Developing an effective UI/UX design is crucial for the success of the project, and requires understanding the principles of design, user behavior, and visual design.

■ Database Design and Management

The project will require creating and managing a database to store student and transport-related data, which will require understanding concepts such as data modeling, database normalization, and SQL.

■ API Integration

The project will require integration with various APIs, such as maps and payment gateways, which will require understanding of how APIs work and how to effectively use them in the project.

15.Mockups

Figure 2: Home Page

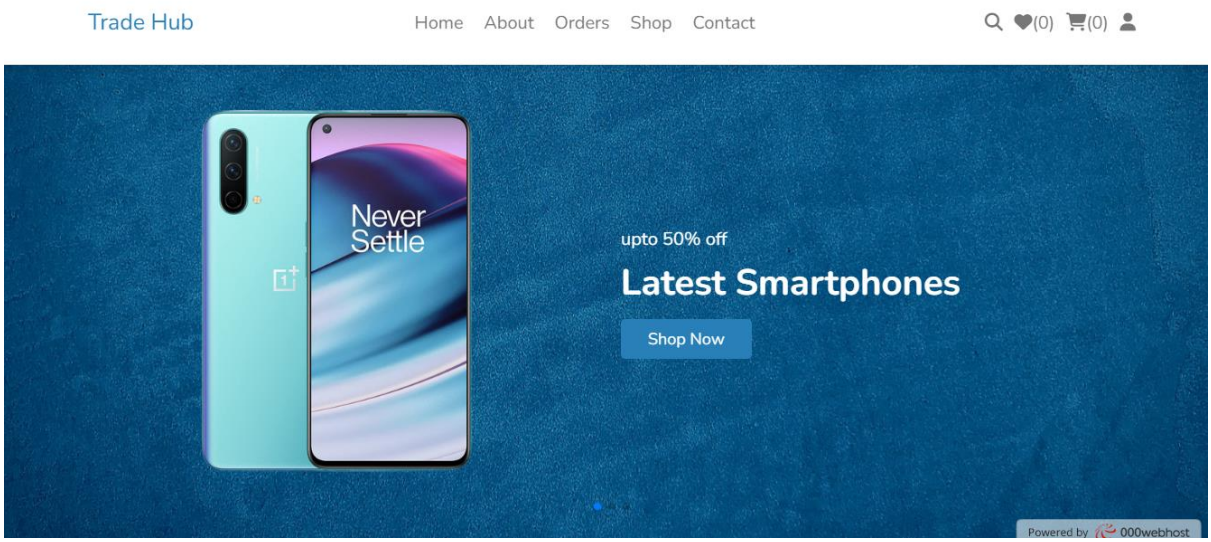


Figure 3: About Page

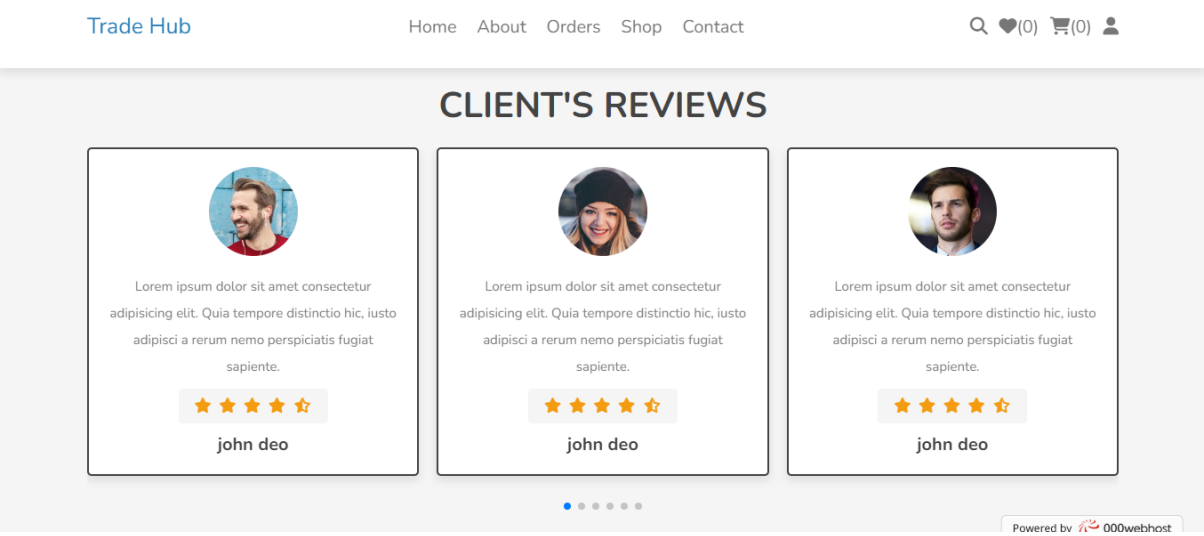
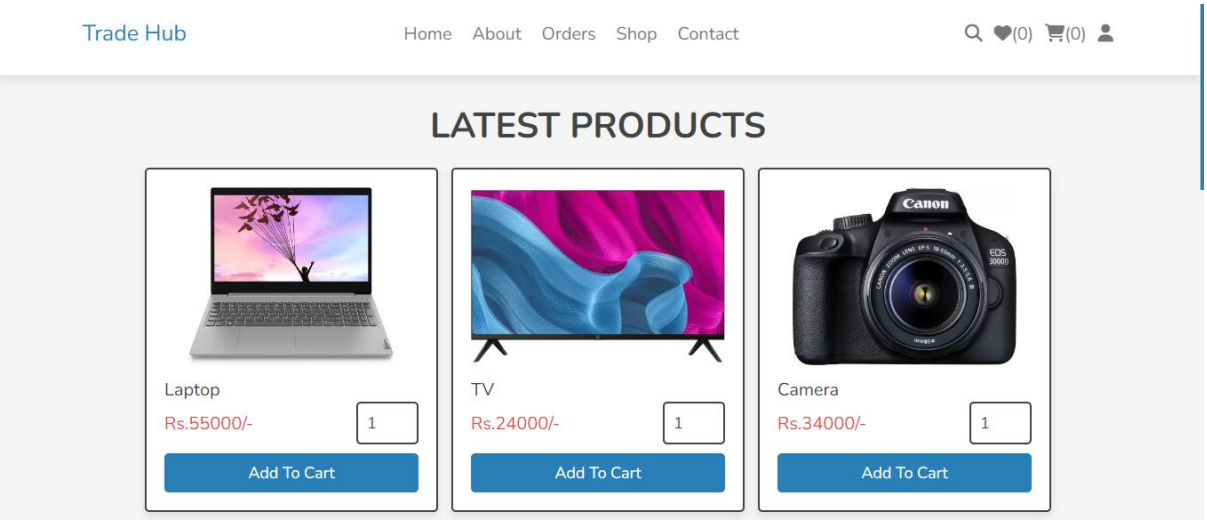


Figure 4: Products Page



16.Conclusion

The proposed ecommerce application and admin dashboard aim to revolutionize the online shopping experience and streamline business operations. By incorporating the latest technologies and industry best practices, the system will provide users with a convenient, secure, and enjoyable shopping experience while enabling administrators to effectively manage the ecommerce business**.**

The ecommerce application will offer a wide range of features and functionalities to enhance the user experience. Users will have the ability to browse through an extensive catalog of products, organized into categories and subcategories, making it easy to find specific items. A powerful search feature will enable users to quickly locate products based on keywords, filters, and sorting options.

Once users have found their desired products, the application will offer a seamless shopping cart functionality. Users can add items to their cart, review their selections, modify quantities, and proceed to checkout. The shopping cart will retain selected items across sessions, allowing users to continue their shopping experience at their convenience. The checkout process will be simple and intuitive, providing multiple secure payment options to complete the transaction.

17.References

[1] Smith, J. (2018). "Ecommerce Website Development: A Comprehensive Guide." Retrieved from https://www.medium.com/ecommerce-website-development-guide

[2] Brown, A. (2019). "Building an Admin Dashboard: Best Practices and Design Tips." Retrieved from --https://www.medium.com/building-admin-dashboard.