Project Proposal

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Team Description :

S.I.	Student Name	Intake	Section	ID	Role
01	Md. Nawrose	49	4	21225103248	Team Leader
02	Md.Shobahan Dewan	49	4	21225103241	
03	Md. Mahedi Hasan	49	4	21225103252	
04	Md. Motahar Hossain Mohim	49	4	21225103229	
05	Md. Sanowar Hossain	49	4	21225103528	

Submitted in partial fulfillment of the requirements of the degree of
Bachelor of Science in
Computer Science and Engineering

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Department of Computer Science and Engineering
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APPROVAL

This is to certify that this project is based on the work of I do hereby declare that the project works presented here entitled as **Quick Mart E-commerce Management System** is the outcome of the original works carried out by Md. Nawrose, Md. Shobahan Dewan, Md. Mahedi Hasan, Md. Motahar Hossain Mohim and Md. Sanowar Hossain under my supervision. I further declare that no part of this project has been submitted elsewhere for the requirements of any degree, award diploma, or any other purposes except for this project.

I further certify that the dissertation meets the requirements and standards for the degree of Doctor of Philosophy (Ph.D) in Computer Science and Engineering.

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Course Instructor,

Hasibul Hossain Shajeeb
Lecturer
Department of Computer Science Engineering
Bangladesh University of Business and Technology (BUBT)

CHAPTER 1
INTRODUCTION

Introduction to **Quick Mart** E-commerce Management System**. Quick Mart** is an advanced E-commerce Management System designed to simplify and automate the complexities of running an online retail business. As the digital marketplace continues to expand, businesses require efficient tools to manage their operations, from product listings and order processing to customer service and inventory control. Quick Mart addresses these needs by providing an integrated platform that allows businesses to focus on growth while ensuring a seamless shopping experience for customers.

The system is built to focus on scalability, security, and user-friendliness. It accommodates businesses of all sizes, offering a flexible solution for both small retailers and large enterprises. Quick Mart supports essential e-commerce functionalities such as real-time inventory updates, secure payment gateways, automated order tracking, and customer relationship management.

Through implementing Quick Mart, businesses can reduce manual intervention, minimize errors, and optimize operational efficiency, while customers benefit from a smooth, intuitive, and secure online shopping experience. The system's comprehensive suite of features enhances customer satisfaction and drives business growth by streamlining day-to-day e-commerce operations.

With the ability to integrate advanced analytics and reporting, Quick Mart enables businesses to make data-driven decisions, gain valuable insights into market trends, and improve their competitive positioning. It is designed to be a reliable, robust solution that empowers businesses to succeed in the fast-paced world of online commerce.

CHAPTER 2
KEY FEATURES

The Quick Mart E-commerce Management System is designed to provide a seamless, user-friendly experience for both customers and administrators. The system incorporates a range of key features that enhance functionality, improve usability, and ensure smooth operation. These features are tailored to meet the needs of an online retail platform and facilitate efficient management of the e-commerce process.

2.1. User-Friendly Interface

- **Intuitive Design**: Quick Mart provides a clean, responsive, and easy-to-navigate interface, ensuring users can browse, search, and purchase products with ease. The design is optimized for desktop, tablet, and mobile devices.

- **Product Search and Filtering**: Users can quickly find desired products using advanced search options, categories, and filters

2.2. Secure Payment Integration

- **Multiple Payment Gateways**: Quick Mart supports integration with various secure payment gateways such as **bKash, Nagad, Rocket, Upay** and **credit/debit cards**, providing customers with flexible payment options.

- **SSL Encryption**: All transactions are secured with **SSL encryption**, ensuring that sensitive data such as payment information is protected during transmission.

2.3. Shopping Cart and Wishlist

- **Dynamic Shopping Cart**: Customers can add items to their cart, view totals, and update quantities in real-time. The cart remains saved for future visits, making it easier for users to resume shopping.

- **Wishlist Functionality**: Users can save products to a wishlist for later purchase, enhancing their shopping experience by allowing them to keep track of items they are interested in.

2.4. Inventory Management

- **Real-Time Stock Updates**: The system automatically updates product availability, showing real-time stock levels. This helps prevent overselling and ensures customers have accurate information when making purchases.

2.5. Order Management

- **Order Tracking**: Quick Mart allows customers to track their order status from placement to delivery, ensuring transparency and reducing customer inquiries.

- **Automated Order Processing**: The system automatically processes orders, sending notifications for payment confirmation, shipment, and delivery, making order management more efficient for both the business and the customer.

2.6. Customer Account Management

- **User Registration and Profile**: Customers can create and manage their own accounts, track their order history, and update personal information such as addresses and payment methods.

2.7. Admin Dashboard

- **Comprehensive Dashboard**: Administrators have access to a centralized dashboard for managing orders, inventory, customers, and analytics. The dashboard provides a clear overview of sales performance and operational metrics.

CHAPTER 3
TECHNOLOGIES TO BE USE

3.1. For Front-End

The front-end of the Quick Mart E-commerce Management System is focused on delivering an intuitive and seamless user experience. The following technologies are essential for building a modern, responsive, and interactive user interface:

3.1.1. HTML5 (HyperText Markup Language)

HTML5 is the standard language for creating web pages. It defines the structure of the website and its elements. It will be used to structure web pages, such as the homepage, product listings, checkout page, and user dashboard.

3.1.2. CSS3 (Cascading Style Sheets)

CSS3 is used to style and design the website, controlling layout, colors, fonts, and responsiveness. CSS3 will be applied for styling all pages, ensuring that the design is consistent and responsive across different devices (mobile, tablet, and desktop)

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3.1.3. JavaScript

JavaScript is used to make web pages interactive, allowing for dynamic content, animations, and real-time user interactions. JavaScript will power features such as product search, filtering, shopping cart updates, form validations, and user interactions.

3.1.4. React.js

React.js is a JavaScript library for building fast and scalable user interfaces, especially for single-page applications (SPAs). React will be used to create reusable components such as product cards, shopping carts, and navigation bars. It will manage the state of the application, ensuring smooth transitions and updates without page reloads.

3.1.5. Font Awesome

Font Awesome provides scalable vector icons and social logos. It will be used to add visually appealing icons to buttons, menus, and sections like shopping carts, user profiles, and payment options.

The front-end technologies used in **Quick Mart** will ensure a modern, responsive, and efficient user experience. Technologies like React.js and Bootstrap will provide a flexible structure for development.

3.2. For Back-End

The back-end of the Quick Mart E-commerce Management System is responsible for managing business logic, databases, server-side operations, and security. The following technologies are essential to build a robust, scalable, and secure back-end infrastructure:

3.2.1. Node.js

Node.js is a runtime environment that allows JavaScript to be used for server-side development. Node.js will be used to handle server-side logic, such as managing user authentication, processing payments, and handling API requests. It is known for its high scalability and non-blocking, event-driven architecture, making it ideal for an e-commerce platform.

3.2.2. MySQL

These databases provide storage for structured and unstructured data. MySQL As a relational database, MySQL can be used to store structured data with relationships, such as customer order history, product categories, and inventory tracking.

3.2.3. Amazon Web Services (AWS)

AWS is a cloud platform that offers various services like hosting, storage, and computing. AWS will be used for hosting the application and storing media files . AWS Lambda could be used for serverless functions.