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Quick Mart: Fast and Convenient Shopping for Customers

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ABSTRACT: Although a basic e-commerce shopping cart system is accessible and easy to use, it may have a number of disadvantages that could reduce its usefulness for companies. Simple shopping cart apps frequently lack sophisticated functionality that consumers might anticipate, such sophisticated search capabilities or the ability to manage loads efficiently. Performance problems like sluggish loading times or system failures may result from this, which could impair user experience and discourage customers from making purchases. Furthermore, as organizations expand, basic shopping cart systems could find it difficult to scale properly, which could cause performance problems. All things considered, basic e-commerce shopping cart systems provide an easy way to begin making transactions. The design and implementation of a streamlined e-commerce shopping cart system with the goal of improving user experience and raising conversion rates is the main emphasis of this study. Our straightforward e-commerce shopping cart system has an intuitive user interface that makes online shopping easier for both consumers and retailers. Customers can choose to continue as guests or create an account for simpler future transactions. To assist customers in making well-informed purchasing decisions, each product page includes thorough descriptions, photos, and pricing details. With a visible cart symbol and the option to change quantities or delete things as necessary, adding products to the cart is simple. Our e-commerce shopping cart system's straightforward yet extensive feature set enables companies to successfully launch and expand their online presence.

I. INTRODUCTION

The success of an online business is greatly influenced by the shopping cart system that is chosen in the quickly changing world of e-commerce. Simple e-commerce shopping cart systems are a popular choice for startups and small businesses wishing to swiftly establish an online presence because of their noteworthy benefits, which include accessibility and ease of use. These systems do, however, have a number of shortcomings that may reduce their usefulness as companies expand. The inability of simple shopping cart programs to handle large loads is one of their main difficulties, which can result in system crashes and delayed loading times. The user experience may be negatively impacted by such problems, discouraging customers from finishing their purchases. Additionally, it might be challenging for companies to satisfy the demands of today's discriminating online buyers if they lack modern features like tailored suggestions and sophisticated search tools.

Furthermore, scalability is still a major problem for basic shopping cart systems. A rudimentary system might not be able to manage the increased visitor volume or larger product catalog as a firm grows, which would further degrade performance on the e-commerce platform. Even while a lot of basic shopping cart solutions are quick and easy to use, they frequently lack important features like scalability, performance under load, and sophisticated features like improved search capabilities. These restrictions may cause system crashes, slower loading times, and an unpleasant shopping experience, which may discourage prospective buyers from finishing their purchases.

The process of adding items to the cart is intuitive, featuring a prominent cart icon that allows users to effortlessly adjust quantities or remove items as needed. By combining simplicity with essential functionalities, our e-commerce shopping cart system provides businesses with a robust platform to effectively establish and grow their online operations, ensuring that they can meet the evolving needs of their customers in a competitive landscape. This study aims to address these limitations by designing and implementing a simplified yet robust e-commerce shopping cart system that enhances user experience and increases conversion rates.

II. LITERATURE SURVEY

P. K. Soni and R. Rambola(2022) Sentiment analysis or opinion mining has come forth as an attractive research field in the past few years. Sentiment analysis extracts sentiments from the text for analysis and aggregation at different levels of detail. In aspect-level sentiment analysis, we aggregate sentiment for different aspects of entities. The bulk of the research work executed so far focuses on detecting explicit aspects but ignored implicit aspects, which are insinuated by other existing words and articulates of the sentence. Since a significant percentage of sentences contain implicit aspects, detection of implicit aspects becomes vital for sentiment analysis. This survey concentrates on implicit aspect detection, and a detailed discussion about state of the art is provided. The available methods are categorized depending on the algorithm applied. Quantitative evaluation for different methods as stated by authors is included for comparison purpose. Discussion about terminology, issues, and scope in the detection of implicit aspects is also included. The fine-grained sentiment information collected may be used in many applications in various domains. This survey aims to advocate the need for implicit aspect detection, determine existing efficient solutions, identify complications in implicit aspect detection, and suggest measures to improve performance, which comprise future research trends in implicit aspect detection.

L. He et. al(2022) The increasingly developed online platform generates a large amount of online reviews every moment, e.g., Yelp and Amazon. Consumers gradually develop the habit of reading previous reviews before making a decision of buying or choosing various products. Online reviews play an vital part in determining consumers' purchase choices in e-commerce, yet many online reviews are intentionally created to confuse or mislead potential consumers. Moreover, driven by product reputations and merchants' profits, more and more spam reviews were inserted into online platform. This kind of reviews can be positive, negative or neutral, but they had common features: misleading consumers or damaging reputations. In the past decade, many people conducted research on detecting spam reviews using statistical or deep learning method with various datasets. In view of that, this article first introduces the task of spam online reviews detection and makes a common definition of spam reviews. Then, we comprehensively conclude the existing method and available datasets. Third, we summarize the existing network-based approaches in dealing with this task and propose some direction for future research.

L. He(2020) Over the past two decades, e-commerce system development has changed dramatically, moving from basic online catalogs to sophisticated platforms with a wide range of features and integrations. The primary functions of early e-commerce platforms were to offer a digital catalog and simple shopping cart functionalities. These early platforms were unable to process high transaction volumes and did not have sophisticated features like customer relationship management or data analytics. Two essential components of e-commerce platforms are performance and scalability. Talk about how the capacity of businesses to dynamically scale resources in response to changing traffic demands is made possible by cloud computing, which has revolutionized the scalability of e-commerce platforms. Many of the performance problems with old e-commerce systems—which frequently faltered under heavy traffic loads—have been resolved by the move to cloud-based solutions.

III. EXISTING SYSTEM

- Simple shopping cart applications may face challenges when integrating with third-party services.
- This can lead to performance issues, such as slow loading times or crash system crashes, which can negatively impact the user.
- Simple shopping cart applications may have limited customization options, making it difficult for businesses to tailor the user experience to their specific branding and requirements.

Disadvantages

- Integrating Issues.
- User Experience
- Adding Product to Cart Issues.
- Storage Problem.

Proposed System

- Simple e-commerce shopping cart applications are typically designed with user-friendliness in mind, making it easy for both customers and merchants to navigate and use the platform without requiring extensive technical knowledge.
- Shopping cart applications may have faster loading times compared to more complex platforms, providing a better user experience for customers.

Advantages

- Easy to Use.
- Less Complexity.
- Flexibility and Fast loading.
- Quick Deployment.

IV. SYSTEM ARCHITECTURE

In the context of "Quick Mart: Fast and Convenient Shopping for Customers," the system architecture would outline how various elements work together to deliver a seamless shopping experience. This architecture typically includes multiple layers, such as the presentation layer, which handles user interfaces and interactions, the application layer, which processes business logic and manages customer requests, and the data layer, which stores and retrieves product information, user accounts, and transaction records. At the core, the architecture may involve components like a web server to host the online platform, a database management system for data storage, and APIs to facilitate communication between the front end and back end. Additional services, such as payment gateways and inventory management systems, would also be integrated to support transactions and stock levels. By defining these components and their interactions, the system architecture provides a blueprint for developers, ensuring that the Quick Mart platform is scalable, secure, and capable of handling user demands effectively. This structured approach ultimately enhances the overall performance and reliability of the shopping experience for customers.

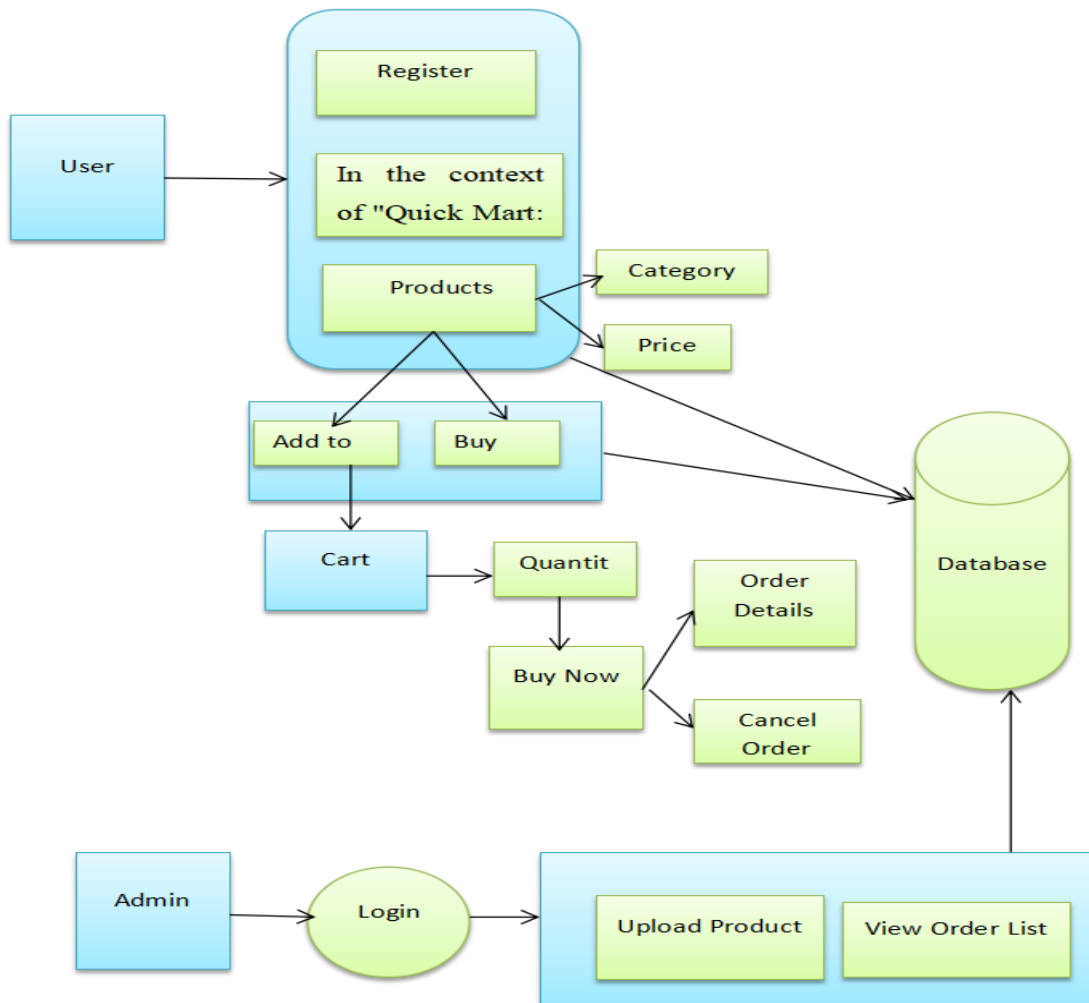


Figure A:- SYSTEM ARCHITECTURE

V. METHODOLOGY

The code follows a structured approach to handle user registration, login, and order management in a shopping application. It utilizes the **Singleton Connection** pattern to establish a single database connection, ensuring efficiency and avoiding redundant connections. The **PreparedStatement** is used for executing SQL queries securely, protecting against SQL injection attacks by binding user inputs directly to query parameters. The **CRUD operations** are implemented for user registration (insertion into the user table), order creation (insertion into the orders table), and order deletion (canceling an order). The code also uses **Data Transfer Objects (DTOs)** like the User and Order classes to transfer data between different layers of the application. The **DAO (Data Access Object)** pattern is employed to separate database interactions from the rest of the business logic, improving code organization and maintainability. Additionally, the code handles exceptions with basic error logging, ensuring that issues during database interactions can be identified and debugged. While not a full-fledged ORM, the code manually maps database rows to Java objects, ensuring smooth communication between the database and the application. Overall, the methodology emphasizes efficiency, security, maintainability, and separation of concerns.

Modules:-

1. User

In this module we design the windows for the project. These windows are used for secure login for all users. To connect with server user must give their username and password then only they can able to connect the server. If the user already exists directly can login into the server else user must register their details such as username, password and Email id, into the server. Server will create the account for the entire user to maintain upload and download rate. Name will be set as user id. Logging in is usually used to enter a specific page

2. Search

This is the first module is user can register and Login. After login there is an option to search. In that search bar we can search a product by submitting that button we can see the details of the product. After that there one phase Where we can see Reviews and add to cart

3. Admin

This is the third module of this project. In this module Admin will Upload the product. If any user want to add products that will add to cart, he admin will deliver or track the process of the product.

4. Upload

This is the fourth module in this project. This module also have Admin login only and this admin uploads product and view product from database.

Implementation

Algorithm:-

1. Establishing Database Connection:

- Initialize a static Connection object to connect to the database.
- In the getConnection() method, check if a connection exists. If not, load the JDBC driver and create a new connection to the database.

2. User Registration (DbCon Class):

- The Register() method accepts a User object.
- Prepare an SQL query to insert user details into the User table.
- Bind the User object's properties (name, email, password, etc.) to the query.
- Execute the query to insert the user into the database.

3. Inserting an Order (OrderDao Class):

- The insertOrder() method inserts a new order into the orders table.
- Prepare an SQL query to insert product ID, user ID, order quantity, and order date.
- Execute the query to store the order data.

4. Retrieving User Orders (OrderDao Class):

- The userOrders() method fetches all orders for a specific user.
- Prepare an SQL query to retrieve orders associated with the given user ID.
- For each order, fetch the associated product details using ProductDao.
- Populate the Order object and return the list of orders.

5. Canceling an Order (OrderDao Class):

- The cancelOrder() method deletes an order from the database based on its order ID.
- Prepare a query to delete the order from the orders table and execute it.

6. **User Login (UserDao Class):**

- The userLogin() method verifies user credentials (email and password).
- Prepare an SQL query to check the database for matching email and password.
- If a match is found, return a User object with user details.

Experimental Outcome

1. HOME PAGE

Quick Mart, your go-to online store for all your shopping needs! Browse through a wide variety of products without the need to register or log in. Our homepage displays all the available items in categories for easy navigation. Enjoy a seamless shopping experience and find everything you need at your fingertips!

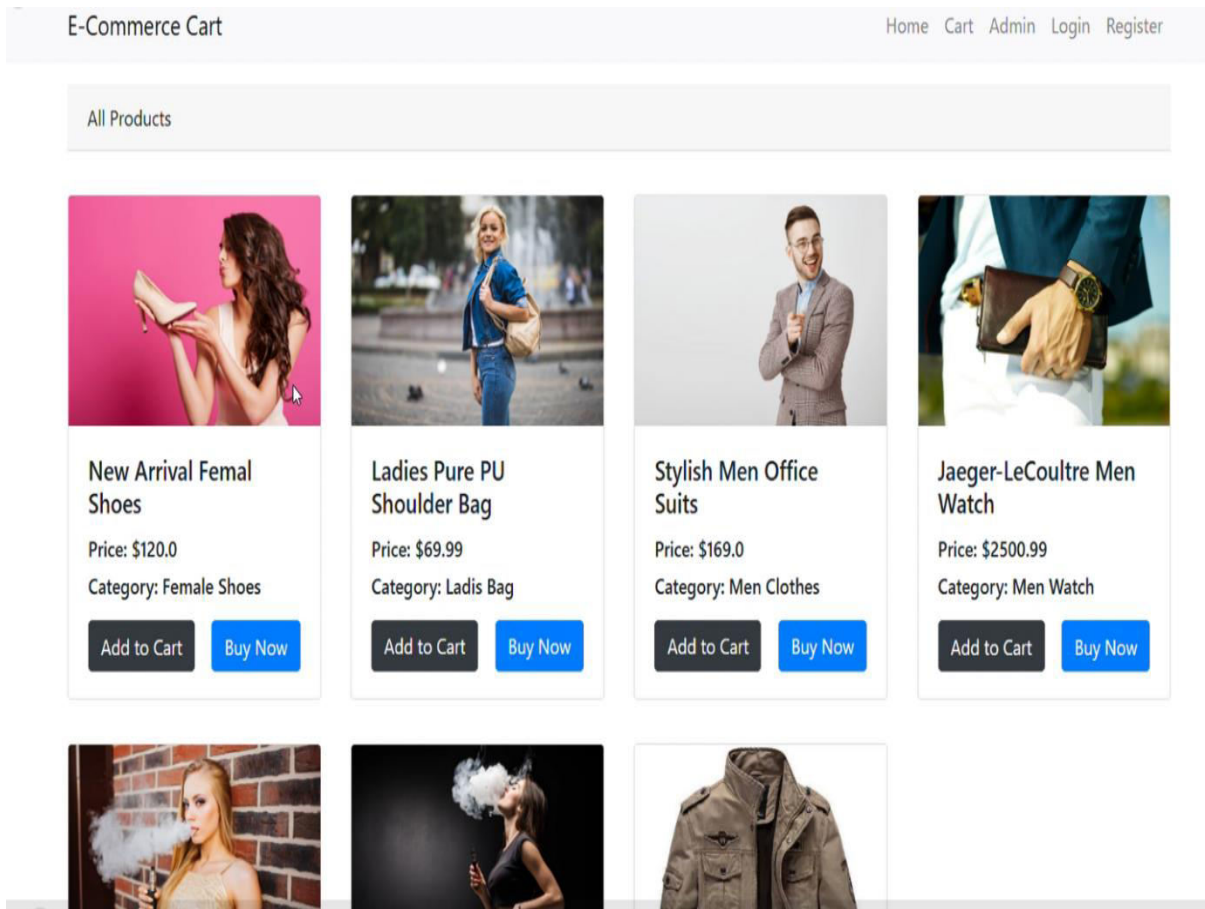
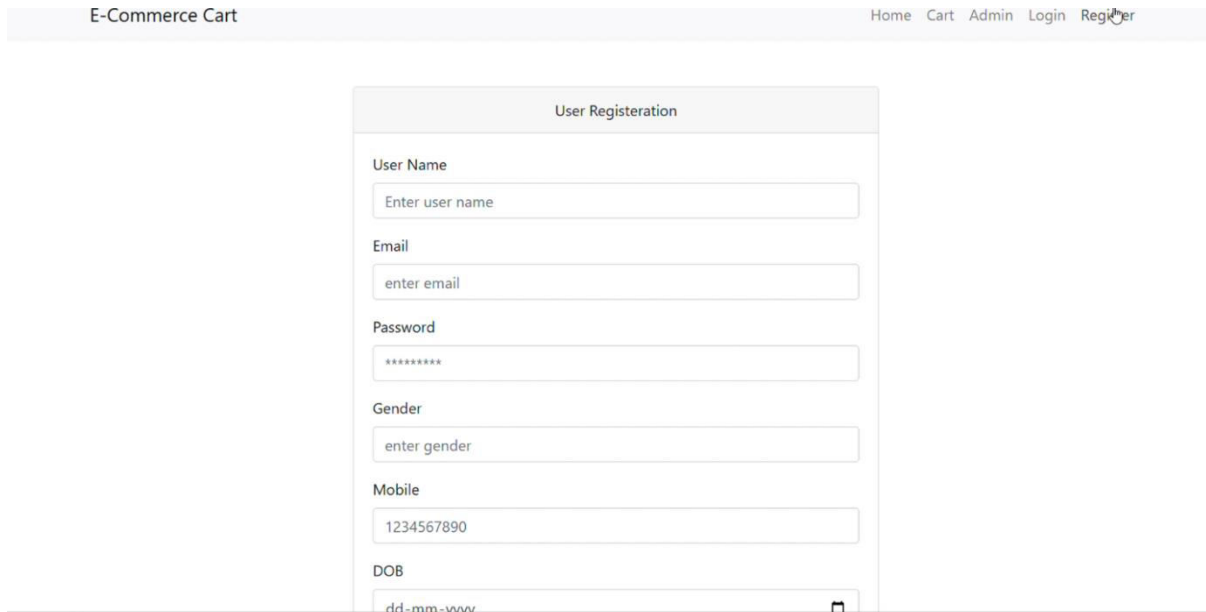


Figure:- HOME PAGE

2. USER REGISTRATION

To register as a new user on Quick Mart, fill in your basic details such as name, email address, and password. This information will be securely stored in our MySQL database. After successfully registering, you'll be able to log in using your credentials to access a personalized shopping experience.

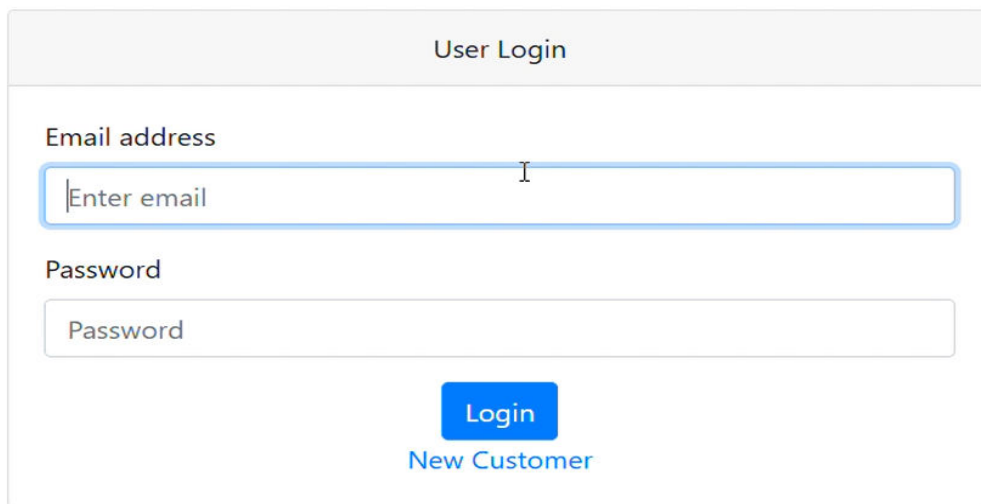


The screenshot shows a web interface for an E-Commerce Cart. At the top, there is a navigation bar with links for Home, Cart, Admin, Login, and Register. Below this is a 'User Registration' form. The form contains the following fields: 'User Name' with a placeholder 'Enter user name'; 'Email' with a placeholder 'enter email'; 'Password' with a placeholder '*****'; 'Gender' with a placeholder 'enter gender'; 'Mobile' with a placeholder '1234567890'; and 'DOB' with a placeholder 'dd-mm-yyyy' and a calendar icon.

Figure:- USER REGISTRATION

3. USER LOGIN

After registering on Quick Mart, users need to log in with their credentials (email and password) to access their personalized shopping experience. Once logged in, they can browse through a wide variety of products available in the store. With just a few clicks, users can add products to their cart, proceed to checkout, and complete the purchase smoothly. The platform ensures seamless interaction, making shopping easy and efficient every time!



The screenshot shows a 'User Login' form. It has two input fields: 'Email address' with a placeholder 'Enter email' and 'Password' with a placeholder 'Password'. Below the fields is a blue 'Login' button and a link for 'New Customer'.

Figure:- USER LOGIN

4. E-COMMERCE CART

Users can easily browse products on Quick Mart and add them to their shopping cart. Once items are in the cart, they can adjust the quantity of each product to match their purchase needs. The cart automatically updates to reflect the changes, allowing users to increase or decrease the number of products they wish to buy. This feature provides a convenient and flexible shopping experience, ensuring that users can purchase exactly what they need.

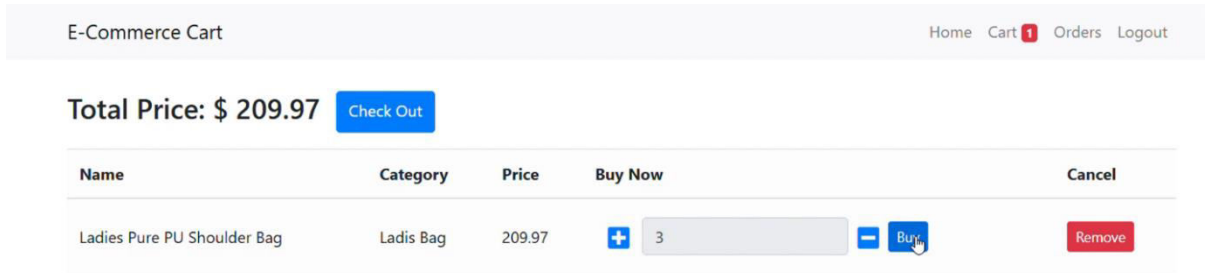
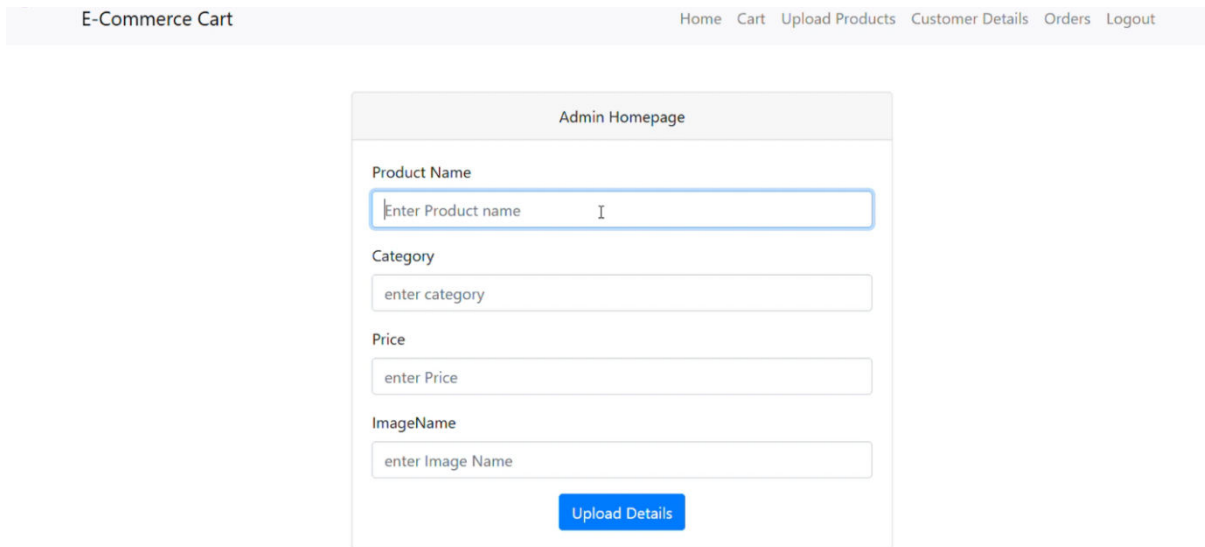


Figure:- E-COMMERCE CART

5. ADMIN HOME PAGE

Users can easily browse products on Quick Mart and add them to their shopping cart. Once items are in the cart, they can adjust the quantity of each product to match their purchase needs. The cart automatically updates to reflect the changes, allowing users to increase or decrease the number of products they wish to buy. This feature provides a convenient and flexible shopping experience, ensuring that users can purchase exactly what they need.



VI. CONCLUSION

In this project aims to develop a sophisticated e-commerce shopping cart system designed to meet the growing needs of small to medium-sized businesses. By focusing on a user-friendly interface, detailed product pages, intuitive cart management, robust performance, scalability, and stringent security measures, the system is poised to significantly enhance the online shopping experience for customers while supporting businesses in their growth and operational efficiency

VII. FUTURE ENHANCEMENT

In the future, Subsequent improvements to the e-commerce shopping cart system will concentrate on introducing cutting-edge features and technology to significantly boost business intelligence, functionality, and user experience. By combining machine learning (ML) with artificial intelligence (AI) capabilities, users will be able to receive personalized suggestions and predictive analytics that are based on their preferences and behavior. Furthermore, by adding multi-channel connection to the system, companies will be able to coordinate their online store with other

platforms like social media, marketplaces, and physical point-of-sale systems, guaranteeing a smooth omnichannel experience. The increasing number of clients who prefer to purchase on their cellphones will be catered to by improving mobile optimization and creating a specialized mobile app. In the future, augmented reality (AR) capabilities will be investigated to provide virtual try-ons and 3D product images, improving the dynamic shopping encounter

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