GetYourJewellery - E-commerce Website Using MERN Stack

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Abstract

An Online Shop serves as a versatile application platform designed to facilitate the discovery and purchase of a wide range of products, including Jewelry, Clothing, and Electronic Accessories, across various categories. Its primary objective is to simplify the online shopping experience for users by offering intuitive features such as Shopping, View Cart, Checkout, Sign-in, Account Creation, and the provision of Billing and Shipping Information. Moreover, users can confirm their orders, initiate order dispatch, and manage their purchase history by deleting orders as needed. Additionally, the application's future enhancements aim to further enrich the user experience by incorporating advanced functionalities and optimizations, ensuring continual relevance and efficiency in meeting evolving consumer needs.

1. Introduction

An Online Shop The main goal of this project was to create shopping cart, which allows customers to shop and purchase the Jewellery products online. Moreover, the project is also designed in such a way it lets managers manage the products information. Customers can orders products, and they will be contacted to further process the orders. In today's busy world, people don't have time for their personal needs. And the technology fast that anyone can do by sitting in a room. If someone buy a new things, he can buy online with the help of Internet. The application is implemented in React js and consists of two main components: Admin and Customer side Admin side consists of the features such as Creating Username & Password, Input Items, Modify Items ,Delete items, Query Sale Data, Query Database's data, and Logout. Customer side consists of the features such as Select Products, Search Products, Buy Items.

2. Modules

The system after careful analysis has been identified to be presented with the following modules:
The Modules involved are

- Admin
- User
- User Registration
- Add to Cart

2.1 Admin User

The administrative login grants full access to the entire system, allowing the admin to manage various aspects of the platform comprehensively. Once logged in, the admin has the authority to add or delete employee records, ensuring that the system's user database is always current and accurate.
To gain access to the admin area, the administrator must first enter their unique username and password. After providing these credentials, the admin presses the "Submit" button to verify their identity and access the administrative functionalities.
Once inside the admin area, the administrator can view detailed information about all products and users within the system. This includes the ability to:

2.1.1 Manage Customer Records:

Add New Customers: The admin can input details for new customers, ensuring they have access to the system as needed.
Delete Customer: If a customer leaves the organization or no longer requires access, the admin can remove their details from the system.

2.1.2 View Product Details:

The admin can access comprehensive information about all products listed in the system. This might include product descriptions, pricing, inventory levels, and other relevant data.

2.1.3 View User Details:

The admin can also see detailed profiles of all users who have access to the system. This includes user activity, access levels, and any other pertinent information. By having these capabilities, the admin plays a crucial role in maintaining the integrity, security, and efficiency of the system. Their oversight ensures that all user and product information is up-to-date, accurate, and properly managed.

2.2 User

User Login is the process by which an employee gains access to a computer system by identifying and authenticating themselves. The user have to fill the user name and unique password and the press to the submit button. User can buy and view products.

2.3 User Registration

The User registration form contains a list of fields that is used to input data about customer. To add a new customer we required to fill the given form which contain User name, email, contact number, and address and then submit it.

2.4 Add to cart

Basically this form is used when any item is add in cart. At the time of this we should fill the details about the item like jewel id, quantity, product name, price, total items and delivery cost, amount, quantity, price and vat included on that product etc
Checkout form

This is a form that is be used for gathering necessary information about new order. When we checkout the form than there is already have information about the order product and the detail of user also. User must be filled which credit card number. Then there is a receipt is generated like invoice
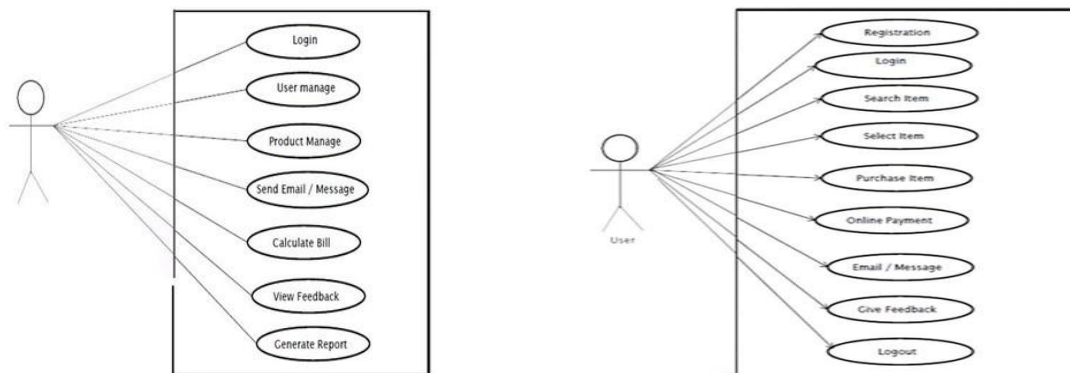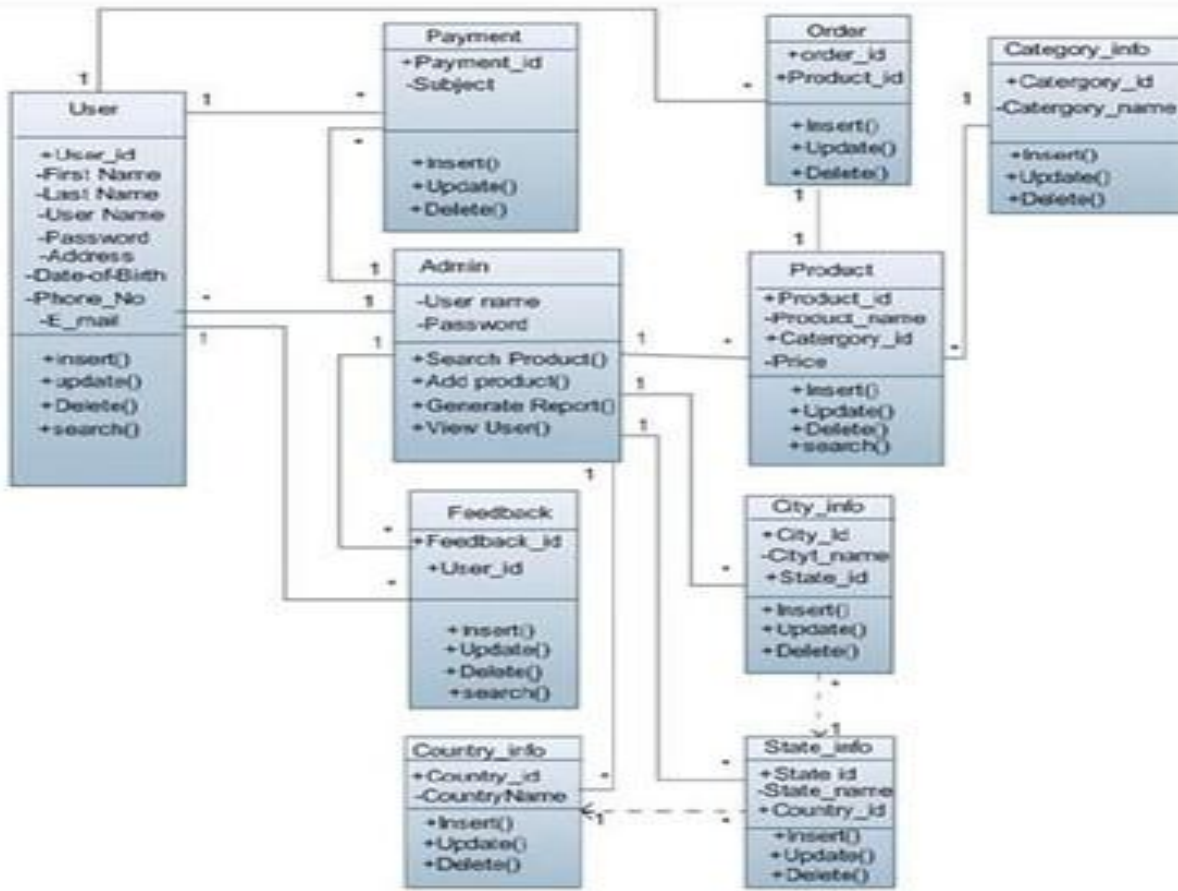
2.5 Use Case Diagram

Figure1: Admin use case

2.6 Class Diagram

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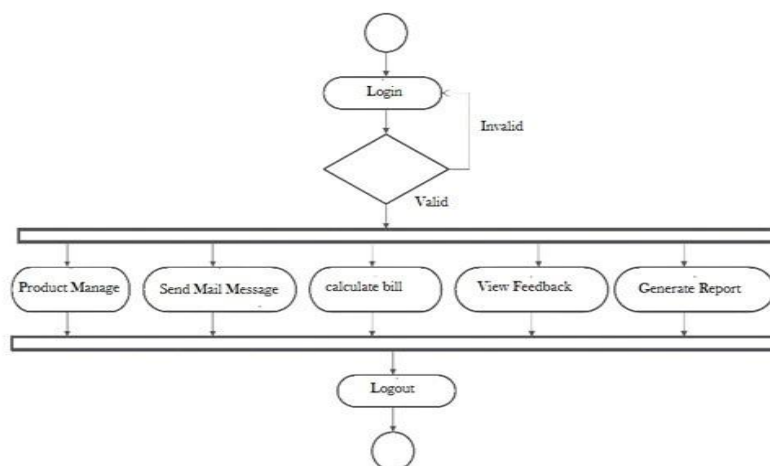

Figure 2: Class Diagram

2.7 User Registration

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2.8 Checkout form

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3. Technology Description

3.1 REACT JS

React JS is a highly popular JavaScript library maintained by Facebook for building dynamic and interactive user interfaces. It uses a component-based architecture, allowing developers to create reusable, self-contained components that encapsulate their structure, style, and behavior. React's declarative approach simplifies UI development by letting developers describe what the UI should look like for a given state, with React handling the updates efficiently through its virtual DOM. This virtual DOM optimizes performance by minimizing direct manipulations to the actual DOM, only updating parts that have changed. React also simplifies state management, with each component maintaining its own state and automatically re-rendering on state changes. The rich ecosystem of tools and libraries, such as React Router for routing and Redux for state management, along with strong community support, makes ReactJS a robust, efficient, and flexible choice for creating scalable and maintainable web applications.

3.2 Firebase

Firebase is a comprehensive platform that provides various services such as a real-time database, authentication, cloud messaging, and hosting, which streamline backend development. This allows developers to focus more on the frontend and improving user experience. Its seamless integration with popular frameworks like React and Angular further boosts productivity and speeds up the development process.

3.3 Tailwind CSS

Tailwind CSS is a utility-first CSS framework designed for building modern web interfaces. It provides a comprehensive set of pre-designed utility classes that allow developers to style their HTML without leaving the markup.Tailwind's approach emphasizes flexibility and speed, enabling rapid development and consistent UI design across projects.

3.4 EMAIL JS

Email JS is a JavaScript library that enables sending emails directly from client-side code, such as JavaScript, without requiring a backend server. It simplifies the process of integrating email functionality into web applications, allowing developers to send transactional emails and notifications seamlessly.

3.5 API Fetching

For searching products on an e-Commerce website, API fetching involves sending a search query to the server's product database via an API endpoint. The server processes the query, retrieves relevant products, and sends the results back to the client-side application. Frontend frameworks like React or Vue.js can then display the products to the user. Equations and formulae should be typed in Mathtype, and numbered consecutively with Arabic numerals in parentheses on the right hand side of the page (if referred to explicitly in the text). They should also be separated from the surrounding text by one space.

4. Future Scope

The project encompasses:
- Implementation of diverse product databases with scalable storage solutions.
- Integration of multilingual support to ensure comprehension across different languages.
- Enhancement of user-friendliness and clarity through the addition of additional graphics.
- Implementation of online document management and backup functionalities for version control and data security.
- Integration of secure user authentication and authorization mechanisms.
- Implementation of advanced search and filtering options for efficient data retrieval.
- Incorporation of real-time analytics and reporting features for data-driven decision-making.
- Integration with third-party services for additional functionalities such as payment processing or social media integration.

5. Conclusion

During the development of this software package, we have made a conscious effort to utilize available tools, techniques, and resources effectively. Our primary goals were to ensure the system is user-friendly, cost-effective, and flexible. By focusing on these aspects, we aim to create a system that meets the needs of its users and is widely acceptable. However, as with any development process, there are inherent challenges and shortcomings. Despite our best efforts, this system is not without its limitations.

6. References

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