Project Synopsis: ShopInn

Project Definition

The ShopInn is an e-commerce application that is a comprehensive solution designed to enhance the online shopping experience for end-users while providing robust management tools for sellers. This application is being developed using cutting-edge technologies including React for the front-end and Spring Boot for the back-end. The primary aim of the project is to offer a seamless, user-friendly platform where customers can easily browse, search for, and purchase products, while sellers can manage their product listings and monitor their sales. Additionally, the application includes a powerful administrative interface for analyzing sales data, overseeing platform operations, and ensuring compliance with business requirements. The system integrates with external payment gateways such as Razorpay, ensuring secure and efficient transaction processing.

Core Modules/Functionalities

The E-Commerce Application is comprised of several core modules that collectively provide a comprehensive online shopping experience. Each module is designed to meet specific business requirements while ensuring ease of use and reliability.

1. User Registration and Authentication: This module ensures that users, including customers and sellers, can register on the platform securely. The authentication process involves secure login mechanisms, password encryption, and the implementation of user roles to manage access rights. Users can log in using their credentials, which are securely stored in the database.

2. Product Browsing and Searching: This module enables users to explore a wide range of products available on the platform. Users can browse products by categories, utilize search functionality to find specific items, and access detailed product descriptions. The user interface is designed to be responsive and intuitive, ensuring that users have a smooth browsing experience on any device.

3. Shopping Cart Management: This module allows users to add products to a virtual shopping cart. Users can view the contents of their cart, modify quantities, or remove items as needed. The cart is persistently managed throughout the session, ensuring that users do not lose their selections during navigation.

4. Order Placement and Checkout: The checkout module provides a streamlined process for finalizing purchases. Users can proceed to checkout, where they will provide shipping details and choose a payment method. The system integrates with external payment gateways like Razorpay to handle transactions securely. Upon successful order placement, users receive a confirmation email with order details and tracking information.

5. Order History and Tracking: This feature allows users to access their order history and track the status of their current orders. The system maintains detailed records of all transactions, enabling users to review past purchases and check delivery statuses at any time.

6. Seller Panel: The seller panel is a dedicated interface for sellers to manage their product listings. Sellers can add new products, update existing listings, and categorize their offerings for better organization. The panel also provides tools for tracking sales performance and receiving customer feedback.

7. Admin Panel: The admin panel is designed for platform administrators to oversee operations. Administrators have access to comprehensive analytics tools that allow them to monitor sales trends, analyze user behavior, and manage accounts. The admin panel also includes features for reviewing customer feedback, managing seller accounts, and ensuring compliance with regulations.

Team Composition

The development of this e-commerce application is being undertaken by a team of four skilled professionals. The team members bring diverse expertise in front-end development, back-end development, database management, and project coordination. Each member is responsible for specific aspects of the project, ensuring that all components are developed with high quality and efficiency.

Team Members:

- **Priyanshu Shukla [240340120141]**
- **Rahul Mishra [240340120142]**
- **Sagar Negi [240340120161]**
- **Varun Khadse [240340120220]**

Technology Stack

The e-commerce application is built using a modern technology stack that ensures scalability, security, and maintainability. The primary technologies and tools used in the development of this application include:

- Front-End: React is utilized for building the user interface, providing a dynamic and responsive experience for users. React's component-based architecture allows for reusable UI elements and a consistent look and feel across the platform.

- Back-End: Spring Boot is employed for the back-end development, offering a robust framework for building RESTful APIs and handling business logic. Spring Boot's ability to

create stand-alone, production-grade applications with minimal configuration makes it ideal for this project.

- Database: MySQL is used for data storage, ensuring reliable and efficient management of user information, product details, and transaction records. The database is designed to handle a large volume of data while maintaining high performance.

- External Services: Razorpay is integrated for payment processing, providing secure and seamless transactions. The system may also integrate with other third-party services for shipping and customer reviews, depending on future requirements.

- Communication: RESTful APIs facilitate communication between the front-end and back-end, ensuring smooth data flow and interaction across the system.

- Security: Security is implemented through Spring Security , and authentication is done through JWT authentication. Role based authentication is implemented so that sensitive data is kept secured and user can only access the relevant data for them.