PHARMACY PRODUCT INVENTORY AND SALES MANAGEMENT SOFTWARE USING JAVA

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Abstract: The Pharmaceutical Inventory and Sales Management System is a comprehensive software application designed to streamline and automate the operations of a pharmacy. This system aims to enhance efficiency, accuracy, and customer service by managing various pharmacy-related activities such as inventory control, drug dispensing, sales processing, and report generation. It ensures proper stock management by tracking medicine quantities, expiry dates, and supplier information. The system also supports secure storage of patient prescriptions and purchase histories, aiding in better healthcare delivery and regulatory compliance.

Keywords: Pharmacy, Inventory Management, Prescription, Billing System, CRUD Operations.

1. INTRODUCTION

Pharmacies play a critical role in the healthcare system by ensuring the safe and timely distribution of medications to patients. As the demand for efficient healthcare services continues to grow, the need for advanced technological solutions to manage pharmacy operations has become increasingly important. Traditional methods of managing pharmacy tasks such as inventory tracking, billing, and prescription handling are often time-consuming, error-prone, and inefficient. The Pharmacy Management System (PMS) is a digital solution developed to address these challenges by automating and organizing the day-to-day operations of a pharmacy. This system is designed to manage drug inventory, handle customer and prescription records, process transactions, and generate reports.

This is the web application named PHARMA+ (e-commerce website) developed using technologies HTML&CSS, Bootstrap, JS(JavaScript) in the front end and java, spring, spring boot int the middle wear & MySQL database as the backend. The application mainly has two modules Admin and Customer. Admin can perform all the CRUD operations such as insert product, update product, delete product, view all products, view all customers. When it comes to customer module, customer can view all the products which they want to purchase and also, they can add the products, view the cart and they can even delete it if needed. After adding the products to cart, customer can do the payment and the bill will be generated also the customer can print the bill if needed. But to perform all these operations the customer should compulsorily login.

2. LITERATURE SURVEY

1. **Goyal & Gupta (2017):** This paper presents the architecture and implementation of an online pharmacy system that manages sales, inventory, and billing using PHP and MySQL. It emphasizes basic functionality like user authentication, medicine catalog management, and order processing. Useful for understanding fundamental components in pharmacy software.
2. **Srinivas & Priya (2019):** Focuses on an IoT-integrated pharmacy model for remote drug monitoring and automated inventory restocking. Introduces smart shelves and RFID for stock management. Offers insights for adding modern tech like IoT to pharmacy systems.
3. **Al-Khalifa & Al-Razgan (2016):** An overview of the pharmacy information systems adopted in healthcare centres in Saudi Arabia. Discusses different system architectures and common pitfalls in government hospitals. Good for understanding real-world deployment scenarios and challenges.
4. **Chakraborty & Kumar (2020):** Explores AI-based prescription validation and drug recommendation in pharmacies. Uses natural language processing to detect anomalies in prescriptions. Important for extending pharmacy systems with intelligent features.
5. **WHO eHealth Reports (2016):** A global perspective on the implementation and challenges of electronic health and pharmacy records. Provides regulatory guidelines, interoperability standards, and data security recommendations. Useful for policy compliance and standardization aspects of pharmacy systems.

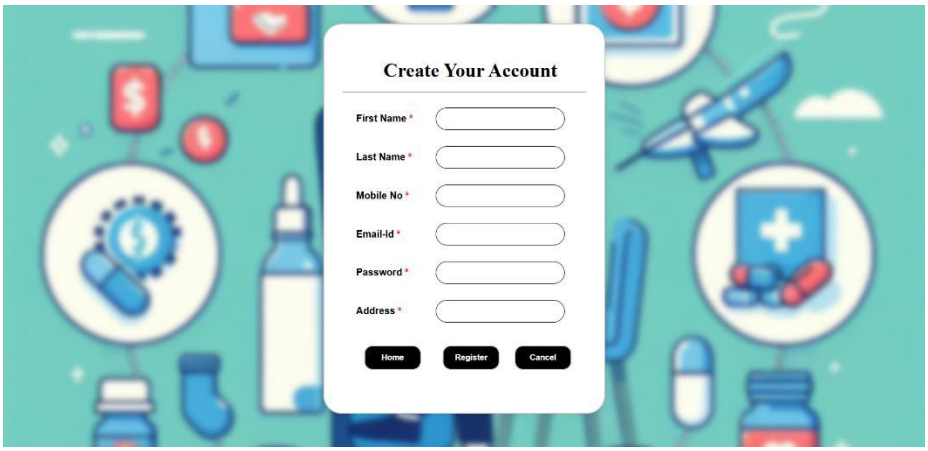
3. PROPOSED SYSTEM

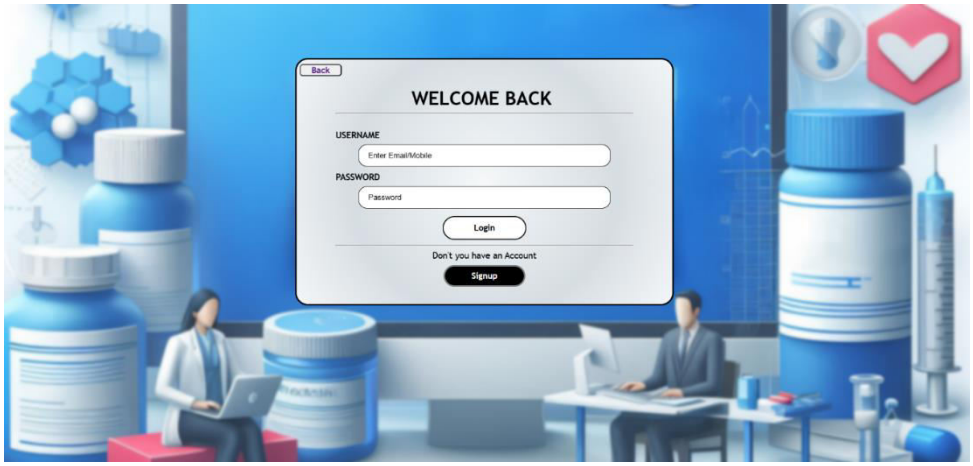
The proposed system of Pharmaceutical Inventory and Sales Management System is a web application that aims to overcome the limitations of the existing system and provide a better online shopping experience for users.

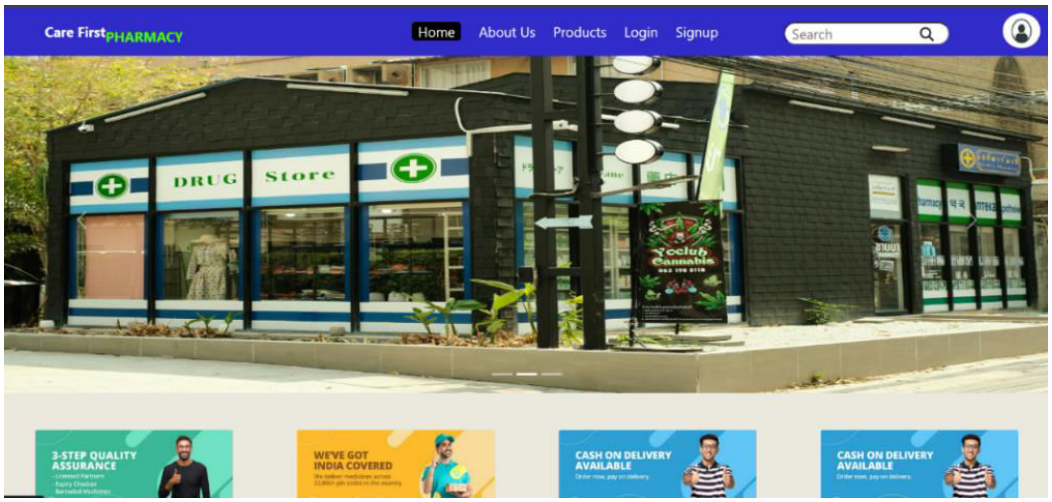
The web application will be developed using HTML&CSS, Bootstrap, JavaScript in front-end and Java, Spring, Spring Boot in middle wear and MySQL database as backend. The proposed system will have the following features:

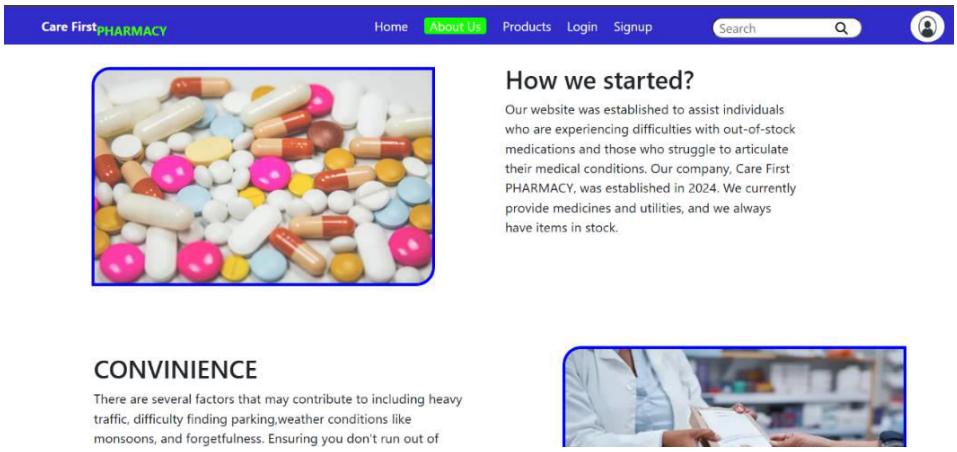
- The web application will have a user-friendly interface.
- The web application will have good interface that attracts the customer.
- The web application will have a secure login and registration system for users.
- Options to view shopping cart and also remove the products functionality.
- The web application will have cash on delivery option.
- The web application will have printing bill option.

4. OUTPUT SCREENS





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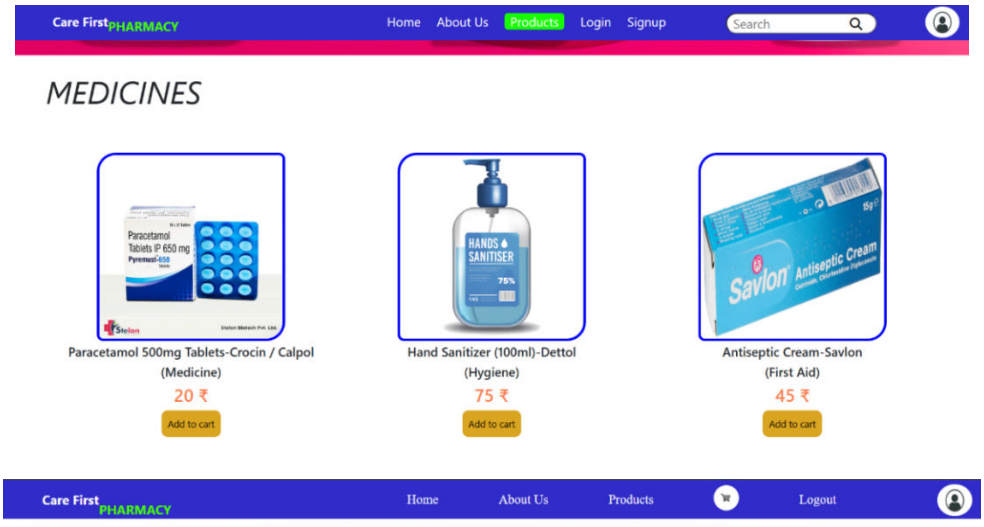
How we started?
Our website was established to assist individuals who are experiencing difficulties with out-of-stock medications and those who struggle to articulate their medical conditions. Our company, Care First PHARMACY, was established in 2024. We currently provide medicines and utilities, and we always have items in stock.
CONVINIENCE
There are several factors that may contribute to including heavy traffic, difficulty finding parking,weather conditions like monsoons, and forgetfulness. Ensuring you don't run out of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MEDICINES
Paracetamol 500mg Tablets-Crocin / Calpol
(Medicine)
20 ₹
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Hand Sanitizer (100ml)-Dettol
(Hygiene)
75 ₹
Add to cart
Antiseptic Cream-Savlon
(First Aid)
45 ₹
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Product
Price
Quantity
Total
Remove
Hand Sanitizer (100ml)
75.0
1
75.0
Delete
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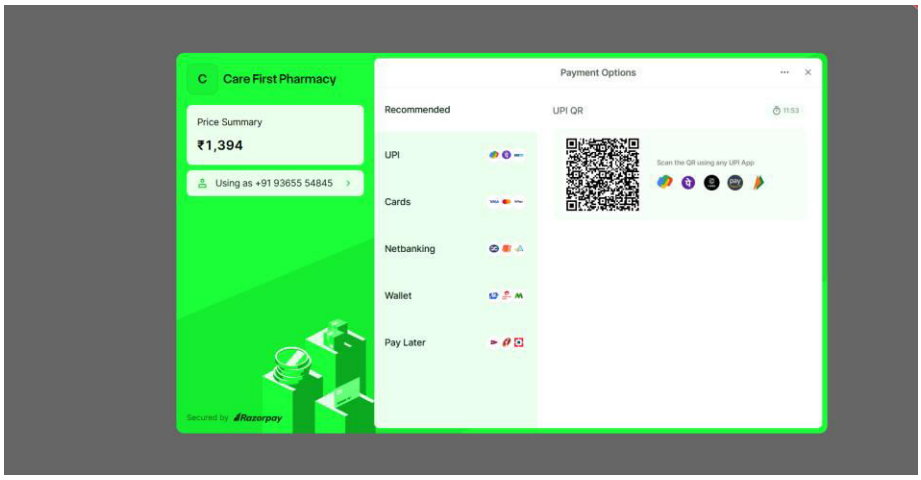
20.0
1
20.0
Delete


Payment mode
RazorPay
Cash On Delivery
Submit
Jane Doe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Price Summary
₹1,394
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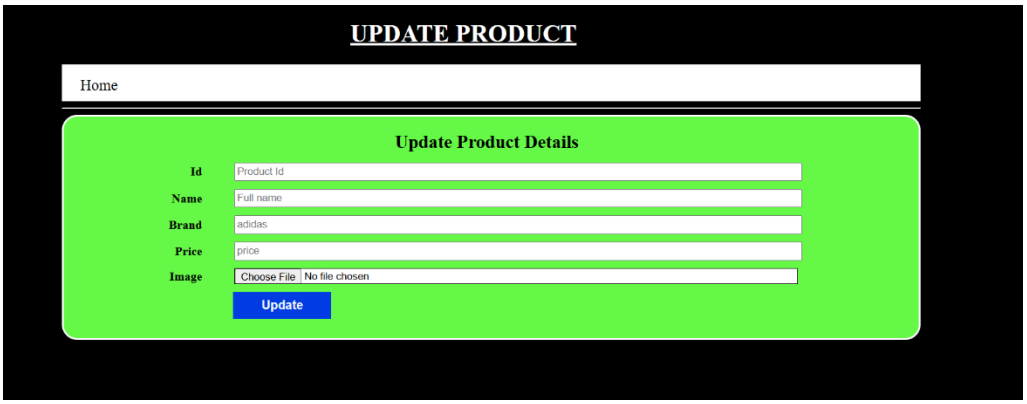
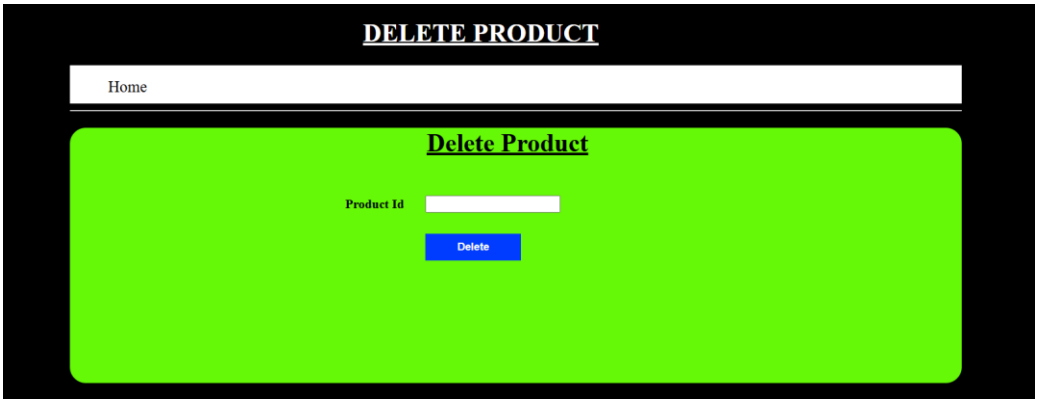
Admin Cart Table

Product ID	Product Brand	Product Image	Product Name	Price	Quantity
3	Crocin / Calpol		Paracetamol 500mg Tablets	20	50





Home

Customer Details

CUSTOMER ID ID	CUSTOMER FIRST NAME	CUSTOMER LAST NAME	E-MAIL	MOBILE-NO
1	sai	raj	test@gmail.com	9365554845

5. CONCLUSION

This project helps user to buy things online. The application mainly has two modules Admin and Customer. Admin can perform all the CRUD operations such as insert product, update product, delete product, view all products, view all customers. When it comes to customer module, customer can view all the products which they want to purchase and also, they can add the products, view the cart and they can even delete it if needed. After adding the products to cart, customer can do the payment and the bill will be generated also the customer can print the bill if needed. But to perform all these operations the customer should compulsorily login.

6. FURTHER ENHANCEMENT

The Pharmaceutical Inventory and Sales Management System holds significant potential for future enhancements to meet the evolving needs of the healthcare and pharmaceutical industries. One major advancement lies in integrating the system with electronic prescription (e-prescription) and electronic medical record (EMR) platforms, enabling seamless communication between doctors, pharmacies, and patients while reducing errors and improving patient safety. The incorporation of artificial intelligence (AI) can further enhance functionality by providing intelligent drug recommendations, identifying harmful drug interactions, and supporting clinical decisions. Mobile application development is another promising area, allowing customers to manage prescriptions, receive reminders, and place orders conveniently. These future developments can collectively transform the system into a comprehensive, intelligent, and patient-centric solution.

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