



G H Patel College of Engineering & Technology
(A Constituent College of Charutar Vidya mandal University)

DEPARTMENT OF INFORMATION TECHNOLOGY

Mini Project Report

on

Pharmacy Management System

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CERTIFICATE

This is to certify that the Mini Project Report submitted entitled “**Pharmacy Management System**” has been carried out by **Krushil Kapupara(12202080501030)** **Preet Goyani(12202080501041)** **Rajdeep Raval(12202080501046)** under guidance in partial fulfillment for the Degree of Bachelor of Engineering in Information Technology, 6th Semester of G H Patel College of Engineering & Technology, CVM University, Vallabh Vidyanagar during the academic year 2024-25.

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ABSTRACT

This report presents the development and evaluation of a Pharmacy Management System designed to streamline and automate pharmacy operations while enhancing customer convenience. The objective of this project is to facilitate efficient medicine purchases, inventory management, and customer satisfaction through a digital platform.

The system is developed using HTML, Bootstrap, CSS, and JavaScript for the front end, while the back end is powered by PHP and MySQL, hosted on an Apache XAMPP server. The development environment utilized Sublime Text Editor. The system ensures secure drug information management, prevents stock depletion and expiration, and improves pharmacy workflow.

Key functionalities include inventory tracking, customer order management, prescription validation, and automated reporting, ensuring accuracy and efficiency in pharmaceutical operations. The system also enhances the pharmacy team's coordination, improving service quality and overall customer satisfaction. The significance of this system lies in its ability to modernize traditional pharmacy operations, reducing manual workload while ensuring data security, accuracy, and regulatory compliance. Future enhancements may include AI-powered prescription verification, automated restocking alerts, and mobile app integration to further optimize pharmacy management.

In conclusion, the Pharmacy Management System demonstrates the effectiveness of digital solutions in the healthcare sector, offering a user-friendly, efficient, and secure platform for pharmacies and customers alike.

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1 INTRODUCTION

1.1 PROBLEM STATEMENT

Effective medication management is crucial for ensuring patient safety, regulatory compliance, and operational efficiency in healthcare facilities and pharmacies. However, traditional manual methods are prone to errors, leading to issues such as incorrect prescriptions, stock mismanagement, medication shortages, and expired drugs. These inefficiencies can result in adverse health effects, financial losses, and treatment delays. Additionally, the lack of real-time tracking and automation makes it difficult to ensure accurate medication dispensing and inventory control. To address these challenges, there is a need for a digital and automated Medication Management System that streamlines prescription handling, optimizes stock management, reduces human errors, and enhances patient adherence. By integrating modern technologies such as real-time tracking, automated alerts, and secure database management, such a system can improve pharmacy work flows, enhance accuracy, and ensure timely access to essential medications, ultimately leading to better healthcare outcome

1.2 PROJECT OVERVIEW

Medication management is a critical aspect of healthcare, ensuring the safe, accurate, and efficient handling of medications for patients. Traditional methods of medication tracking and inventory management are often manual, time-consuming, and prone to errors, leading to potential risks such as incorrect prescriptions, medication shortages, and expired drugs. This project aims to develop a digital Pharmacy Management System that automates prescription, inventory, and supply chain processes to enhance efficiency, accuracy, and patient safety. The system will provide real-time tracking of medicine stocks, automated alerts for low inventory and expired drugs, and streamlined prescription handling. By integrating database management, automation, and modern security protocols, this system will enable pharmacies, hospitals, and healthcare providers to optimize medication distribution, prevent errors, and ensure regulatory compliance. The primary goal is to enhance patient care and operational efficiency, ultimately contributing to a more reliable and effective healthcare ecosystem.

1.3 AIM & OBJECTIVE OF THE PROJECT

The aim of this project is to develop a robust and scalable Pharmacy Management System that enhances prescription accuracy, inventory management, patient safety, and operational efficiency in pharmacies and healthcare facilities. By automating prescription tracking and verification, the system reduces medication errors and ensures that patients receive the correct medicines. Additionally, it provides real time inventory monitoring and alerts to prevent stock shortages, overstocking, and expired medications, ensuring a seamless supply chain for pharmacies and hospitals.

The system is designed to enhance patient safety and adherence by offering timely reminders and alerts for medication schedules, ensuring that patients follow prescribed treatments correctly. It also automates medicine procurement, supplier management, and sales tracking, streamlining pharmacy operations and reducing manual workload. Furthermore, it maintains a secure and transparent record of medicines, transactions, and prescriptions, ensuring adherence to healthcare regulations and minimizing compliance risks.

By integrating modern technologies such as cloud storage, real-time tracking, and secure databases, the system enhances accessibility and convenience for both healthcare providers and patients. Users can easily access medication history, reports, and automated invoice generation, improving efficiency and accuracy. This project aims to revolutionize pharmaceutical operations, minimize human errors, and contribute to better healthcare outcomes, ultimately creating a more reliable and efficient medication management ecosystem.

2 SYSTEM ANALYSIS

2.1 MOTIVATION

The motivation behind this project stems from the need to enhance medication safety, streamline pharmaceutical operations, and improve patient care through technology-driven solutions. The growing complexity of medication management, including prescription errors, stock mismanagement, and patient non-adherence, highlights the necessity for an automated and efficient system that ensures accuracy, compliance, and accessibility in healthcare.

Furthermore, the project is driven by the vision of empowering pharmacists, healthcare providers, and patients with an intuitive and integrated platform that bridges communication gaps and fosters informed decision-making. In a healthcare landscape increasingly reliant on data accuracy and swift access to information, this system seeks to centralize critical data, facilitate timely interventions, and reduce medication-related risks. By incorporating user-friendly interfaces, secure data handling, and role-based access controls, the solution not only enhances operational work flows but also builds trust and transparency among all stakeholders involved in the medication life cycle.

Traditional methods of managing medications, such as manual record-keeping, paper-based prescriptions, and inventory tracking, are prone to human errors, inefficiencies, and compliance risks. Additionally, pharmacies and healthcare providers often struggle with expired medicines, stock shortages, and administrative burdens, impacting both operational efficiency and patient safety. These challenges call for an innovative, technology-driven approach to optimize medication tracking, dispensing, and monitoring in real-time.

By leveraging modern digital solutions, including cloud-based databases, automated alerts, and real-time tracking, this project aims to develop a comprehensive Pharmacy Management System that minimizes errors, enhances inventory management, and improves patient adherence. The motivation behind this initiative is to transform pharmaceutical operations, ensure regulatory compliance, and contribute to a safer and more efficient healthcare ecosystem.

2.2 LITERATURE STUDY

The increasing reliance on digital solutions in healthcare has transformed the way medications are prescribed, dispensed, and monitored. The integration of technology in pharmaceutical management has significantly improved efficiency, reducing human errors and ensuring timely medication administration. Researchers have highlighted the importance of automation in medication tracking, emphasizing that real-time data collection, digital records, and automated alerts contribute to better healthcare outcomes. According to Sharma et al. (2021), the use of smart medication management systems enhances patient adherence, minimizes prescription errors, and improves overall pharmacy operations.

Existing literature has explored various approaches to medication management, including electronic prescription systems, inventory automation, and patient compliance tracking. Traditional methods of manual record-keeping have been associated with high error rates and inefficiencies, leading to the development of advanced pharmacy management solutions. Research studies indicate that automated medication dispensing, bar code-based tracking, and IoT-enabled monitoring systems improve medication safety and prevent stock-related issues such as overstocking and expiration.

2.2.1 Medication: A Survey

A comprehensive survey conducted by Pruitt et al. (2023) systematically reviewed quantitative methods for evaluating the usability of electronic medication administration records (eMAR) and bar-coded medication administration (BCMA) systems. The study emphasizes the importance of these technologies in enhancing medication safety and reducing errors. By analyzing various evaluation techniques, the research provides insights into effective strategies for assessing and improving the usability of eMAR and BCMA systems, which are critical components of modern medication management practices.

2.2.2 Misleading Medication Content

Misleading medication content poses a significant threat to public health, as inaccurate or incomplete information can lead to improper usage, adverse drug reactions, and decreased treatment effectiveness. With the widespread availability of online resources and unverified platforms, patients are increasingly exposed to false claims, incorrect dosages, or misrepresented drug interactions. This misinformation can cause confusion, foster self-medication without professional guidance, and ultimately compromise patient safety. Addressing this issue requires robust verification mechanisms, credible information sources, and clear communication from healthcare providers to ensure that patients receive accurate, evidence-based guidance on their medications.

3 DESIGN: ANALYSIS & METHODOLOGY

3.1 REQUIREMENT ANALYSIS

3.1.1 System Requirements

3.1.1.1 Hardware Requirements

- Processor: Intel Core i3 or higher
- Speed: 2.4 GHz or above
- Hard Disk: 100 GB or more
- Monitor: 15-inch or larger, LED/LCD
- RAM: 4 GB minimum (8 GB recommended)

3.1.1.2 Software Requirements:

- Operating System: Windows 10/11, Linux, or macOS
- Frontend Technologies: HTML, CSS, JavaScript
- Backend Technologies: PHP
- Database Management System: MySQL
- Web Server: Apache (XAMPP/WAMP)

3.1.1.3 Software Environment

The Pharmacy Management System is developed using PHP as the backend language, HTML, CSS, and JavaScript for the frontend, and MySQL for database management. This stack ensures a robust, scalable, and efficient platform for handling medication records, inventory, and patient prescriptions

3.1.1.4 PHP Features

- Open-Source & Free: PHP is freely available and widely supported.
- Cross-Platform Compatibility: Works on Windows, Linux, and macOS.
- Easy Integration: Compatible with various databases, including MySQL.

- **Fast & Efficient:** PHP scripts execute faster due to minimal memory consumption.
- **Secure:** Provides encryption and security features to protect sensitive medical data.
- **Flexible & Scalable:** Suitable for both small and large scale web applications.
- **Rich Library Support:** Contains built-in functions for handling forms, sessions, and authentication.

3.1.1.5 HTML, CSS, and JavaScript for Frontend

- **User-Friendly Interface:** HTML, CSS, and JavaScript ensure an interactive and visually appealing user interface.
- **Responsive Design:** CSS and frameworks like Bootstrap make the system mobile-friendly.
- **Dynamic Behavior:** JavaScript allows real-time interactions like alerts, validations, and live search.

3.1.1.6 PHP for Backend Development

- **Server-Side Processing:** Handles database interactions securely.
- **Session Management:** Ensures secure login and user authentication.
- **API Integration:** Allows connectivity with external systems like hospital databases.

3.1.1.7 Deployment Options

- **Local Hosting:** Development and testing using XAMPP/WAMP.
- **Cloud Hosting:** Deployment on AWS, Digital Ocean, or shared hosting.
- **Custom Domain:** Secure access via SSL-enabled domains. - time as you make changes to the underlying Python script. This allows for rapid iteration and experimentation during the development process.

3.2 SYSTEM ARCHITECTURE

In this project, a structured Pharmacy Management System is developed to efficiently categorize, track, and process pharmaceutical products while ensuring accurate prescription handling and inventory management. The system is built using HTML, CSS, JavaScript, PHP, and MySQL, providing a user-friendly interface for managing medicines, suppliers, and transactions. Since this problem involves structured medical data, implementing a relational database model in MySQL ensures optimal organization and retrieval of information. The system features user authentication, product categorization, company details, and a cart function to streamline pharmaceutical operations. Secure authentication mechanisms prevent unauthorized access, while automated alerts help manage stock shortages, preventing overstocking and expired medications. The primary goal is to enhance accessibility, minimize human errors, and improve operational efficiency in pharmaceutical management.

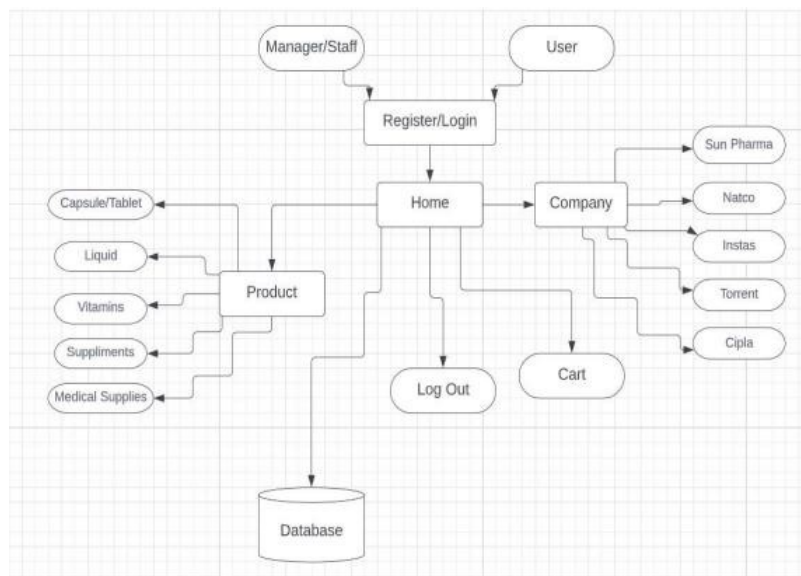


Figure 1 -Architecture Diagram

3.3 FLOW DIAGRAM

- FLOW DIAGRAM OF ADMIN

In this diagram admin must log in first and they can manage the modules based on the requirement. They can view medicine, add medicine, edit products, manage order lists, delete medicine etc.

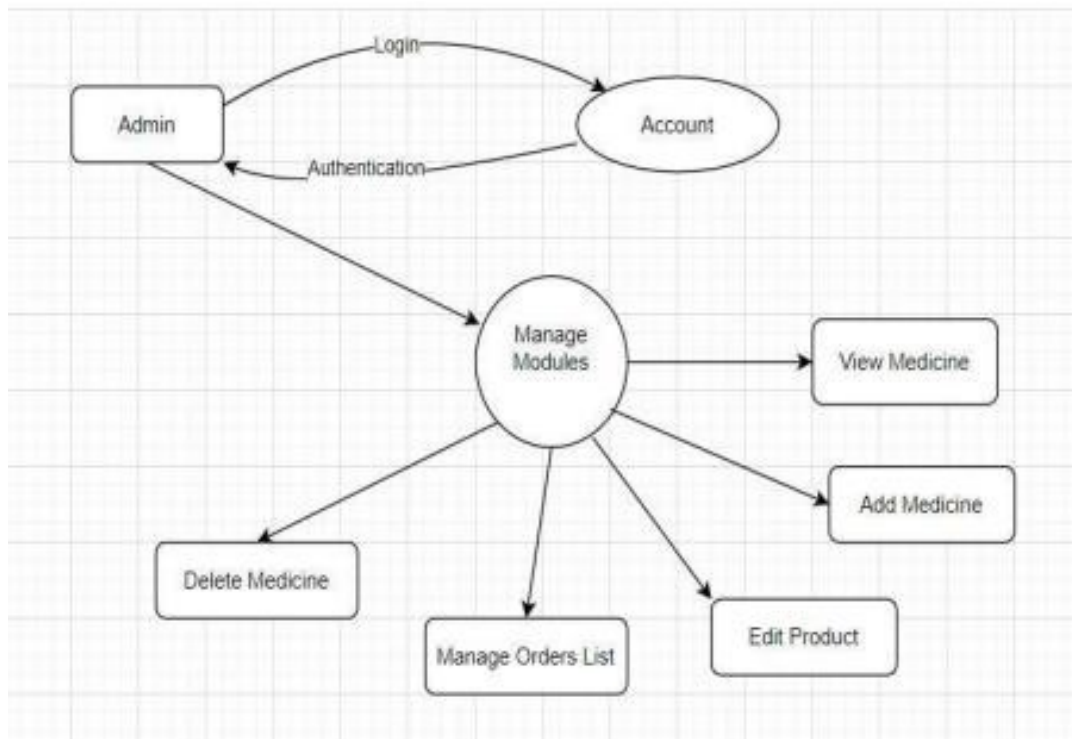


Figure 2- FLOW Diagram for Admin

3.4 Use Case Diagram

- In this ER Diagram there will be two modules which is user and admin/manager in which user will login and see the medicine and can order if they want to and pay the amount and can log out, and in admin/manager they have to login and can see the medicine, add medicine manage order and can log out.

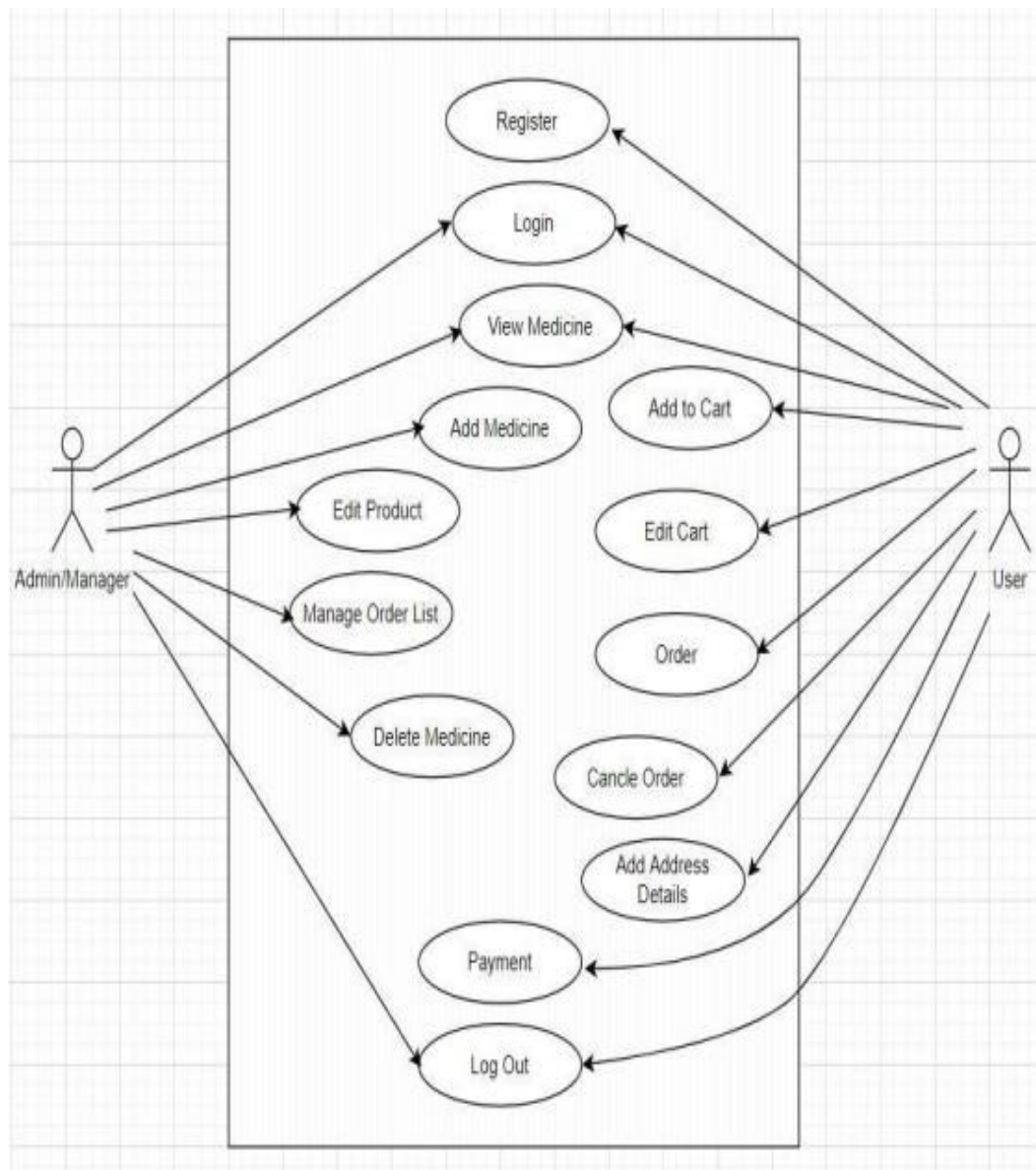


Figure 3- Use Case Diagram

4 SYSTEM OUTPUT

4.1 Login Page

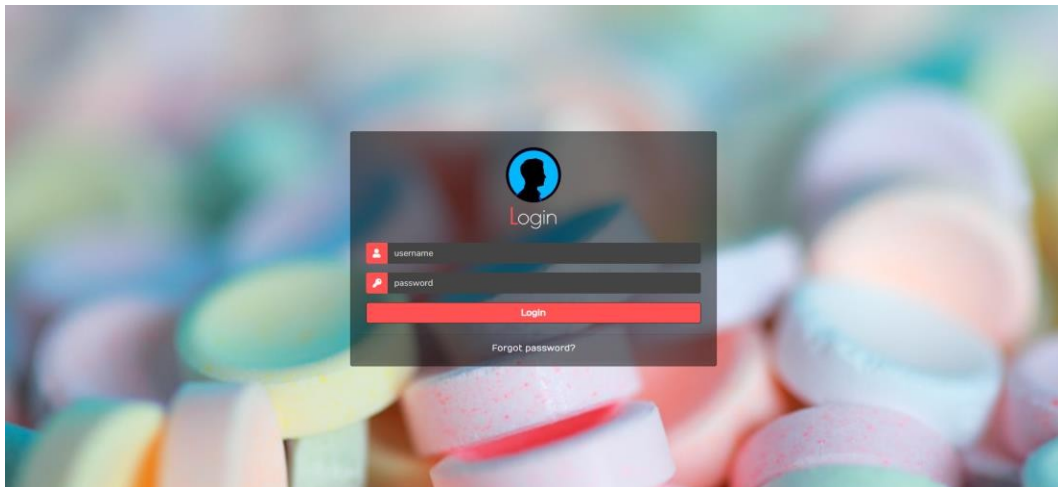


Figure 4.1

4.2 Dashboard

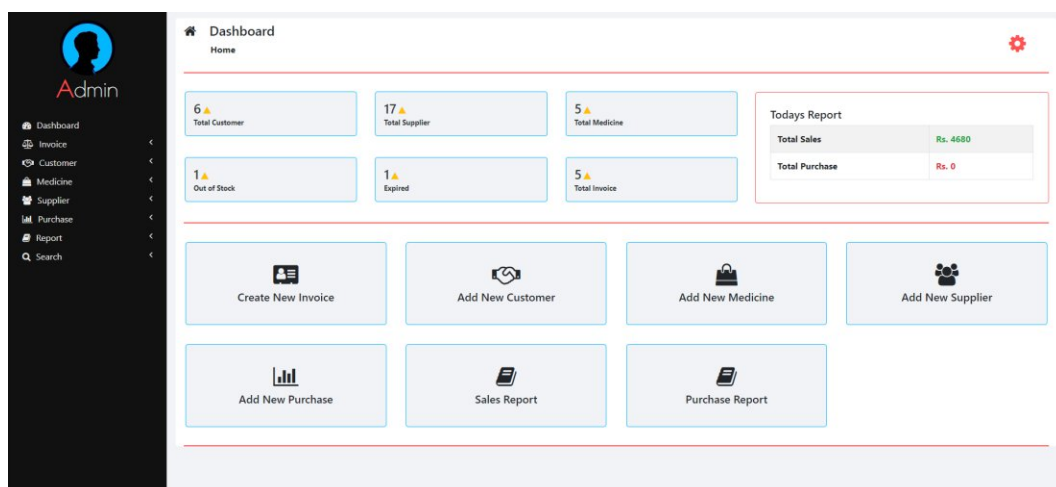


Figure 4.2

4.3 Create New Invoice

New Invoice
Create New Invoice

Customer Name :

Customer Name

New Customer

Address :

Address

Invoice Number :

18

Payment Type :

Cash Payment

Date :

06-04-2025

Contact Number :

Contact Number

Medicine Name	Batch ID	Ava.Qty.	Expiry	Quantity	MRP	Discount(%)	Total	Action
Select Medicine				0		0		<div><div>+</div><div>-</div></div>

Total Amount:

0

Total Discount :

0

Net Total :

0

Save

Paid Amount :

Change :

Figure 4.3

4.4 Add new Customer

Add Customer
Add New Customer

Customer Name :

Name

Contact Number :

Contact Number

Address :

Address

Doctor's Name :

Doctor's Name


Doctor's Address :


Doctor's Address

ADD

Figure 4.4

4.5 Add Medicine

 Add Medicine
Add New Medicine



Medicine Name :

Packing :

Generic Name :


Supplier :


+Add New Supplier

ADD

Figure 4.5

4.6 Add New Supplier

 Add Supplier
Add New Supplier



Supplier Name :

Supplier Email :

Supplier Contact Number :

Supplier Address :

ADD

Figure 4.6

4.7 Add New Purchase

Add Purchase

Add New Purchase

Supplier :

Invoice Number :

Payment Type :

Date :

Supplier Name

Invoice Number

Cash Payment

06-04-2025

+ Add New Supplier

Medicine Name	Packing	Batch ID	Ex. Date (mm/yy)	Quantity	MRP	Rate	Amount	Action
<div>Medicine Name</div>	<div></div>	<div></div>	<div></div>	<div>0</div>	<div></div>	<div></div>	<div></div>	<div>+ -</div>
<div>If new medicine, generic name :<div>Generic Name</div></div>								

Grand Total :

ADD

Figure 4.7

4.8 Sales Report

Sales Report

Showing Sales Report

Start Date :


End Date :

SL	Sales Date	Invoice Number	Customer Name	Total Amount
1	2021-10-19	1	Prakash Bhattarai	30
2	2025-04-06	14	Aditya	780
3	2025-04-06	15	Aditya	1300
4	2025-04-06	16	Aditya	1300
5	2025-04-06	17	Aditya	1300
Total Sales =				4710


Print

Figure 4.8

4.9 Purchase Report


 Purchase Report

Showing Purchase Report



Start Date :

End Date :



SL	Purchase Date	Voucher Number	Invoice No	Supplier Name	Total Amount
1	2025-03-24	1	10	Vaibhav Khunt	500
Total Purchases =					500






Figure 4.9

4.10 Manage Customer

 Manage Customer

Manage Existing Customer



Search :















SL	Customer ID	Customer Name	Contact Number	Address	Doctor's Name	Doctor's Address	Action
1	4	Kiran Suthar	1234567690	Andheri East	Anshari	Andheri East	 
2	6	Aditya	7365687269	Virar West	Xyz	Virar West	 
3	11	Shivam Tiwari	6862369896	Dadar West	Dr Kapoor	Dadar East	 
4	13	Varsha Suthar	7622369694	Rani Station	Dr Ramesh	Rani Station	 
5	14	Prakash Bhattarai	9802851472	Pokhara-16, Dhikidada	Hari Bahadur	Matepani-12	 
6	15	Yas	9897456132	Amrutvel,Amreli	Vaibhav Khunt	Dadava,Amreli	 

Figure 4.10

4.11 Manage Supplier

 **Manage Supplier**
Manage Existing Supplier



Search :













SL	ID	Name	Email	Contact Number	Address	Action
1	1	Desai Pharma	desai@gmail.com	9948724242	Mahim East	 
2	2	BDPL PHARMA	bdpl@gmail.com	8645632963	Santacruz West	 
3	9	Kiran Pharma	kiranpharma@gmail.com	7638683637	Andheri East	 
4	12	SS Distributors	ssdis@gamil.com	3867868752	Matunga West	 
5	30	Vaibhav Khunt	vkhunt@gmail.com	7984175764	Randal Na Dadva	 

Figure 4.11

4.12 Manage Medicine

 **Manage Medicines**
Manage Existing Medicine



Search :













SL.	Medicine Name	Packing	Generic Name	Supplier	Action
1	Nicip Plus	10tab	Paracetamole	BDPL PHARMA	 
2	Crosin	Fatal error : Uncaug	Hdsgvkvajkcbja	Kiran Pharma	 
3	Dolo 650	15tab	paracetamole	BDPL PHARMA	 
4	Gelusil	10tab	mint fla	Desai Pharma	 
5	Paracetamol	10	HUHIKI	Vaibhav Khunt	 

Figure 4.12

4.13 Manage Medicine Stocks

Out Of Stock

 **Manage Medicines Stock**
Manage Existing Medicine Stock



Search :

Out of Stock

Expired






Figure 4.13.1

Expired

 **Manage Medicines Stock**
Manage Existing Medicine Stock



Search :

Out of Stock

Expired




Figure 4.13.2

4.14 Manage Invoice

Manage Invoice

Manage Existing Invoice

Search :

By Invoice Number

By Customer Name

By Invoice Date :

dd-mm-yyyy

SL.	Invoice No	Customer Name	Date	Total Amount	Total Discount	Net Total	Action
1	1	Prakash Bhattarai	2021-10-19	30	0	30	<div><div></div><div></div></div>
2	14	Aditya	2025-04-06	780	0	780	<div><div></div><div></div></div>
3	15	Aditya	2025-04-06	1300	0	1300	<div><div></div><div></div></div>
4	16	Aditya	2025-04-06	1300	0	1300	<div><div></div><div></div></div>
5	17	Aditya	2025-04-06	1300	0	1300	<div><div></div><div></div></div>

Figure 4.14

CONCLUSION

In conclusion, the Pharmacy Management System presents a comprehensive, technology-driven solution aimed at enhancing the safety, accuracy, and efficiency of pharmaceutical operations. By automating critical processes such as prescription validation, inventory tracking, and drug classification, the system reduces the risk of human error, ensures regulatory compliance, and improves overall patient care. The integration of intelligent features like Support Vector Machine (SVM) for decision-making and error detection further strengthens its ability to deliver reliable and data-driven support to healthcare professionals. Additionally, secure access controls, real-time alerts, and structured reporting contribute to a streamlined workflow across all user roles doctors, pharmacists, and patients alike. Ultimately, this system serves as a vital step toward modernizing medication management, promoting better health outcomes, and building a safer, smarter healthcare ecosystem.

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