# PHARMACY MANAGEMENT SYSTEM

A Second Year Project Report
Submitted to the Faculty
of
Bennett University

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# 1. INTRODUCTION

Currently, pharmacies are the backbone of our society as the pandemic has made people rely more and more on medicines to remain healthy. So, pharmacies must manage themselves efficiently to stay functional in this competitive market. The goal of our team is to create an application that manages products, drugs, sorting of drugs, etc. so that the management of the store becomes easier like finding how much stock is left, available medicines, managing receipts, medicine prices, discounts, expiry dates, verifying whether the correct medicine is handed out, etc. The pharmacy administration system is a clinical shop system developed in NetBeans/Eclipse utilizing java programming language. This system supplies you the control over your drug store in the manner that what you can add or get rid of from the pharma store. This application allows the user to control their shop with ease and with greater efficiency. With this, the flow of medicines remains constant, and management of the shop becomes simpler.

## 1.1. Problem Statement

In Order to stay functional currently, Pharmacies need to manage themselves more efficiently to stay relevant in this competitive market and reap some

profit. The goal of our team is to create an application that manages products, drugs, sorting of drugs, etc. so that the management of the store becomes easier like finding how much stock is left, available medicines, managing receipts, medicine prices, discounts, expiry dates, verifying whether the correct medicine is handed out, multi store management etc. The pharmacy management system is intended to increase accuracy, safety, and efficiency in the pharmacy.

## 2. BACKGROUND RESEARCH

A Pharmacy Management System is any system that automates the pharmacy workflow and makes it easier to manage. It includes everything from handling bills, inventory of medicines and other drugs, ordering drugs from suppliers, and many more while complying with the legal policies.

Since the pandemic, pharmacies have become more and more essential to our daily lives than before, which is why we need some form of a pharmacy management system to manage them more efficiently and prevent medicine fraud by checking the expiration of the given medicine and checking it at the time of dispensing.

References:-


- https://www.altexsoft.com/blog/pharmacy-management-system/
- https://en.wikipedia.org/wiki/Pharmacy_management_system#:~:text=The%20pharmacy%20management%20system%2C%20also,medication%20use%20process%20within%20pharmacies.
- https://www.mendeley.com/search/?query=pharmacy+management+system&dgcid=md_homepage

## 2.1. Proposed System

The pharmacy management system aims to serve multiple purposes like safe and effective dispensing of medicines, handling of bills, sorting of drugs, stock inventory, etc.

By using Java and MySQL we are trying to make an application that handles all the above-mentioned issues using classes and storing all the data in a MySQL database to maintain inventory and sorting of drugs according to their expiration dates.

## 2.2. Goals and Objectives

The goal of our project is to make sure that the pharmacy is managed efficiently and remains relevant in this competitive market.

The primary objectives of our project are -

- Inventory management.
- Scheduling orders for medicines that are low in stock/expired.
- Preventing medicine fraud by checking prescription and dispensing the correct drugs.
- Handling bills

| # | Goal or Objective |
|---|---|
| 1 | Making the system extensible – easily updateable and manageable |
| 2 | Making the system easy to use |
| 3 | Making ordering of medicines easy and approachable |
| 4 | Handling bills and discounts on products |
| 5 | Verifying Medicines that are handed out |

# 3. PROJECT PLANNING

## 3.1. Project Setup

| # | Decision Description |
|---|---|
| 1 | Windows 8, Java, Git, etc. |
| 2 | Industry Standards that must be followed. |
| 3 | Special access privileges needed, nondisclosure forms, release to open source, etc. |

## 3.2. Stakeholders

| Stakeholder | Role |
|---|---|
| Anurag Goswami | Mentor |
| Ashima Yadav | Mentor |
| Anurag Goswami, Ashima Yadav | Instructor |
| Aditya Sharma | Team member |
| Siddharth Pratap Singh | Team member |
| Devansh Das | Team member |
| | |

## 3.3. Project Resources

| Resource | Resource Description | Quantity |
|---|---|---|
| Database Server | A database server provided by the sponsoring company. | 1 |
| Capstone Team | Our team of students will be the primary developers of the project. | 3 |
| Anurag Goswami | The mentor who will be able to provide us with technical assistance. | 1 |
| Windows Laptop | Windows OS laptop with Vscode for developing the version of the software. | 3 |

## 3.4. Assumptions

| # | Assumption |
|---|---|
| A1 | The capstone team and mentors will be able to meet face to face once a week. |
| A2 | Eclipse/NetBeans is available |
| A3 | Team will have sufficient time to complete a working model to present by mid-semester |
| A4 | Database will be deployed in time. |
| A5 | The development test data provided will be sufficient to create an accurate prediction of user actions. |
| A6 | The models developed will be easily extended to other forms within the time frame. |

# 4. SYSTEM ANALYSIS AND DESIGN

## 4.1. Overall Description

The pharmacy management system aims to serve multiple purposes like safe and effective dispensing of medicines, handling of bills, sorting of drugs, stock inventory, etc.

By using Java and MySQL we are trying to make an application that handles all the above-mentioned issues using classes and storing all the data in a MySQL database to maintain inventory and sorting of drugs according to their expiration dates.

Our goal is to provide a management suite to pharmacists so that they can manage their pharmacies efficiently. To implement an inventory system for the drugs in the store we will use MySQL to store all the data in a secure database and use java to implement a function that keeps track of the amount left and alerts the end user when the stock falls below a given limit. Handling of bills, Sorting of drugs, efficient delivery of medicines, etc. can be implemented through various functions in java. We can use multiple java classes for managing multiple stores at different locations in a single software.

### 4.2. Users and Roles

| User | Description |
|---|---|
| Developer(Team Members) | A capstone team member or mentor who is tasked with managing the test data, and ultimately generating a firm process for applying these techniques to future user data. This is used for sub-stories and task needed to fulfill the true end user use cases. |
| Microsoft Program Manager | A manager who is working on developing application who will be making design decisions based on the data analysis. |
| Dynamics AX User(Target Users) | An end user will generate data and receipts, that will help us in analyzing And enhancing our product experience |

### 4.3. User Stories (Requirements)

**1.** I as a pharmacy buyer, want to buy some medicines and want to come and check all the types and the number of stocks present in the current situation in the pharmacy system so that I can purchase according to their availability and my demand.

**2.** I as a pharmacist want to check all the stocks present in the current pharmacy system so that in any situation it won't be insufficient for any customer in whatever amount they want to buy.

**3.** I as a pharmacist want to check the discount given on different types of medicines so that they can be compared to every other pharmacy system to make it more convenient, and the best price is given to the customer.

### 4.3.1. Product Backlog Items

| ID | Feature name | Story points |
|---|---|---|
| 5 | Search an item | 3 |
| 4 | Check in inventory | 3 |
| 10 | Sorting of drugs | 3 |
| 17 | Handling bills | 8 |
| 13 | Patient prescription management | 2 |
| 16 | Discounting on item | 2 |

## SPRINT 1

**Estimated User Story Points:** 2
**Actual Completed User Story Points:** 2

| ID | Added | Description | Status | Story Points | Actual Equivalent Story Points | % Completed |
|---|---|---|---|---|---|---|
| 100 | Onset | I as a pharmacy buyer, want to buy some medicines and want to come and check all the types and the number of stocks present in the current situation in the pharmacy system so that I can purchase according to their availability and my demand. | **C** | **2** | **3** | **100%** |

| Acceptance Criteria | | Verification |
|---|---|---|
| **110** | Checking expiry date. | **Create a test case to verify expiry date.** |
| **111** | Certification | **Create test case to verify information is stored in the database about certification.** |
| **112** | Prescription from the doctor | **Create test case to return prescription from the doctor.** |
| **113** | An acknowledgment email shall be sent to the user after submitting the form. | **Create test cases to verify sending of acknowledgement email after successful payment.** |

| ID | Tasks | Resource |
|---|---|---|
| *1* | To check the availability there is a portal and then you must click it | **Team member 1** |
| *2* | *Develop a backend functionality that checks required fields are non-empty when user clicks on register button.* | **Team member 2** |
| *3* | Built a functionality which verifies payment from bank based on credit card details at 1 | **Team member 2** |
| *4* | Built a functionality which stores registration data in the database according to the specifications and sends acknowledgement email to the registered email else display payment failure message. | **Team member 3** |

## SPRINT 2

**Estimated User Story Points:** 8
**Actual Completed User Story Points:** 8

| ID | Added | Description | Status | Story Points | Actual Equivalent Story Points | % Completed |
|---|---|---|---|---|---|---|
| 200 | Onset | I as a pharmacist want to check all the stocks present in the current pharmacy system so that in any situation it won't be insufficient for any customer in whatever amount they want to buy. | **NC** | **8** | | |
| **Acceptance Criteria** | | | **Verification** | | | |
| 210 | The amount is equal as ordered | | Create test cases to verify the amount pay is equal to the amount of order. | | | |
| 211 | The verification is all done | | Create a test case to check verification. | | | |
| 212 | The quality and quantity are good. | | A quality-check run will be there. | | | |
| 213 | System shall ensure that account is debited, cash is dispensed, and card is returned. | | Create test cases to verify the following steps for a transaction: account data is modified, dispenser dispenses the cash, and card is returned. | | | |

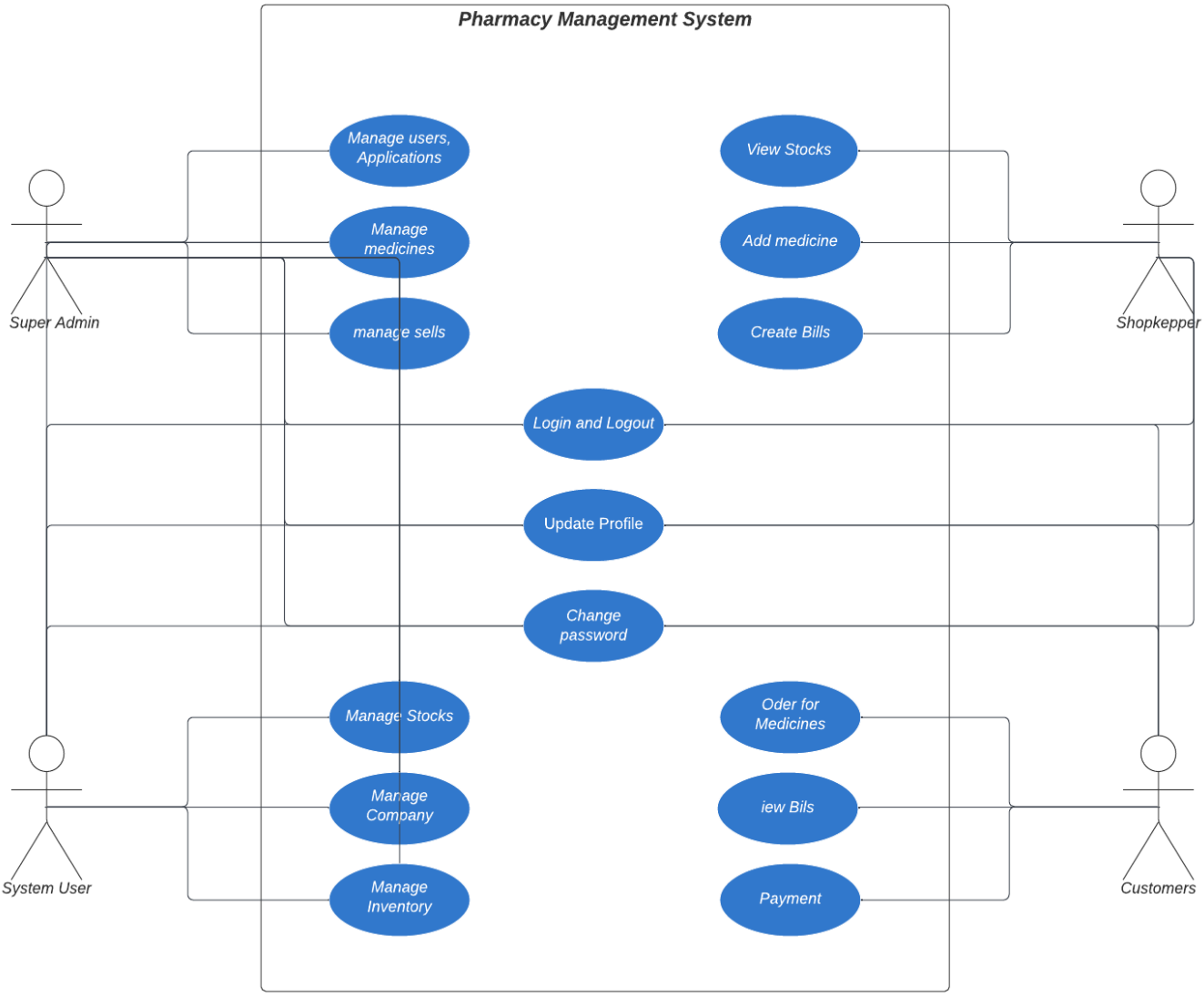
## SPRINT 3

**Estimated User Story Points:** 55
**Actual Completed User Story Points:** N/A

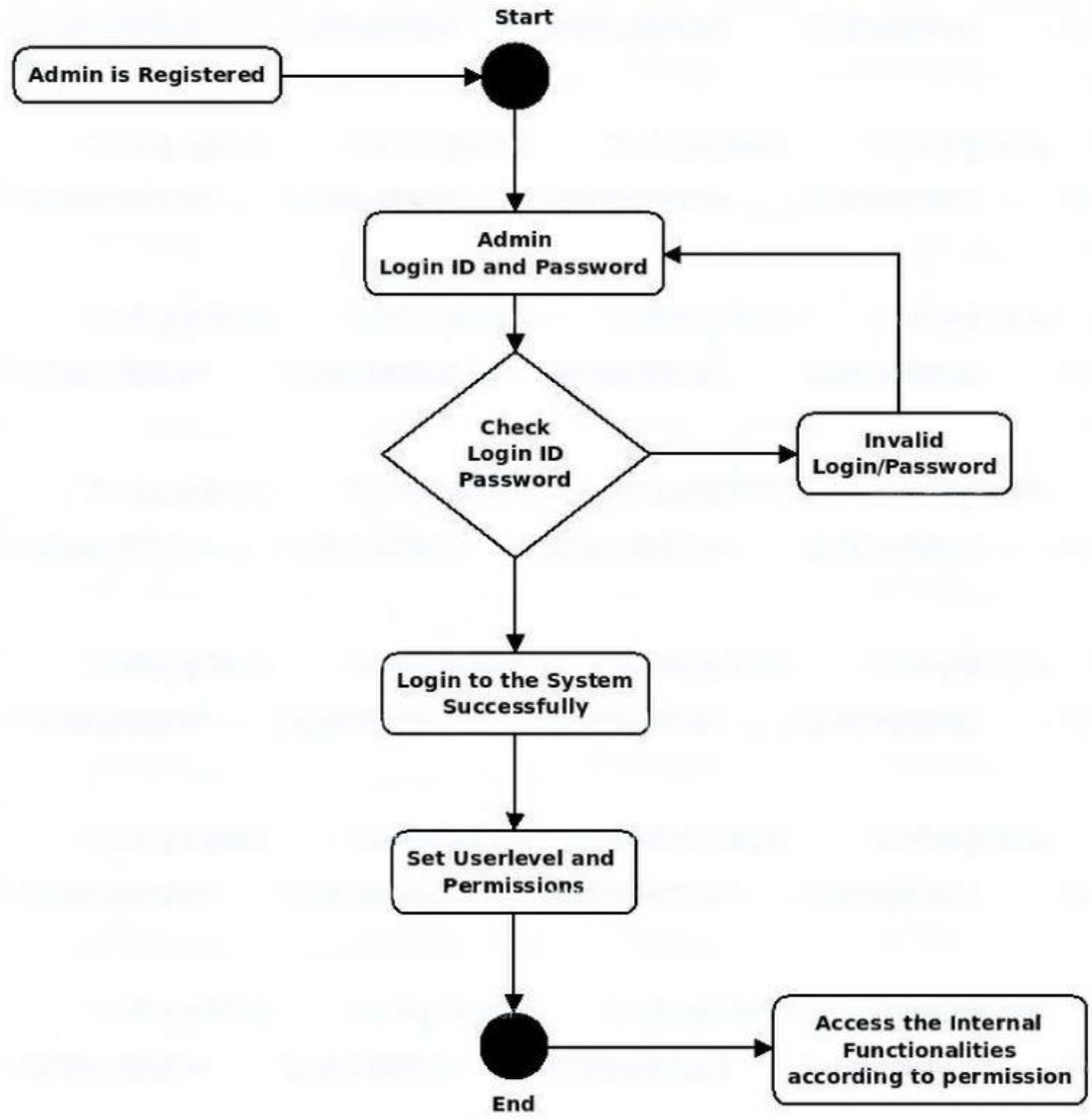
**Main User Story:** "As the HR manager, I want to create a screening quiz so that I can understand whether I want to send possible recruits to the functional manager."

| ID | Added | Description | Status | Story Points | Actual Equivalent Story Points | % Completed |
|---|---|---|---|---|---|---|
| 300 | Onset | **I as a pharmacist want to check the discount given on different types of medicines so that they can be compared to every other pharmacy system to make it more convenient, and the best price is given to the customer.** | **NC** | **8** | | |
| **Acceptance Criteria** | | | **Verification** | | | |
| 310 | Check weather inventory is full or not. | | Create test cases to verify search results by stocks. | | | |
| 311 | Check prices of other pharmacies. | | Create test cases to compare prices of different pharmacies. | | | |
| 312 | Give the best price to the customer after applying the discount. | | Create test cases to give best price and apply discount. | | | |

## 4.4. Design diagrams/ UML diagrams/ Flow Charts/ E-R diagrams



### 4.4.1. Activity Diagram



*Content marked in **brown** shows an example.
** Content marked in **green** shows defaults.

### 4.4.2. Class Diagram