FINAL SEMESTER ASSESSMENT
(FSA) B.TECH. (CSE)
VI SEMESTER

UE18CS355 – OBJECT ORIENTED ANALYSIS AND DESIGN WITH SOFTWARE ENGINEERING LABORATORY

PROJECT REPORT

ON

PHARMACY MANAGEMENT SYSTEM

SUBMITTED BY

NAME	SRN
P SAI KISHORE REDDY	PES2201800096
MANNE VASANTH	PES2201800425
LEKHA SURESH	PES2201800469

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
EC CAMPUS,
BENGALURU – 560100, KARNATAKA,
INDIA

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ABSTRACT :

The pharmacy management system is built for the sake of ensuring effective and clear data saving and manipulating as well as neat work on the pharmacy medical products. This refers to the pharmacy management system project that highly minimizes time and resource by which, searching the medicine data you can get the data in the quickest time. And almost the resources are wisely used since most actions are done on the pharmacy system. Some of the resources minimized include paper, manpower and related things. The other thing is for storing data in a secure way. A summarized list of drugs dispensed to patients can be viewed for monitoring purposes. Also PMS will be able to generate reports on the list of drugs dispensed in the polyclinic for a given time period.If the stock is empty, the pharmacist will need to replenish the drugs.

Chapter-1: SOFTWARE REQUIREMENT SPECIFICATION:

1.1: Introduction

1.1.1: Purpose

The project starts by adding a dealer and by adding details of customers. The user can now purchase new medicines by the desired dealer and then can sell them to the customer. The purchasing and selling of medicines is reflected in the inventory section. The main aim of the Pharmacy Management project is to add and sell medicines. We aim to easy the work and improve the efficiency of the pharmacies.

1.1.2: Intended Audience

This project is a prototype for the flight management system and it is restricted within the college premises. This has been implemented under the guidance of college professors. This document is intended to be used by prospective users of the proposed pharmacy management system; these are the doctor, cashier, administrator and customers.

This document contains the “overall description” section which contains the perspective, functions, design, functions etc, intended to give a brief aspect of the pharmacy management system. This is followed by External Interface requirements containing communication, software and user interfaces which tells us about the various interfaces we associate with. The document follows with analysis models such as the uml models. Next in the document is the system features which explains in details the features of our pharmacy management system.

1.1.3: Product Scope

This software is been developed to ease the process of managing the sale of pharmaceutical products in a pharmacy and also to better manage the records about these products. Information about medical items can be found within this web application. The application helps people working in pharmacies as salespeople to easily navigate through the sale of these products even if they have little or no information about them. This is possible as the application provides a platform where additional helpful information describing the medical items can be added for ease of sale of these items. This therefore means that the pharmacies can be able to employ an individual who is computer literate rather than one who is literate on pharmaceutical products. This therefore, shows that the application ensures employment to non-experienced salespeople on these products.

With the development of specific and potent synthetic drugs, the emphasis of the pharmacist's responsibility has moved substantially towards the utilization of scientific knowledge in the proper use of modern medicines and the protection of the public against dangers that are inherent in their use. Pharmacists are employed in regulatory control and drug management, community pharmacy, hospital pharmacy, the pharmaceutical industry, academic activities, training of other health workers, and research. In all these fields, their aim is to ensure optimum drug therapy, both by contributing to the preparation, supply and control of medicines and associated products, and by providing information and advice to those who prescribe or use pharmaceutical products.

1.1.4: References

1. Learn JavaFX 8: Building User Experience and Interfaces with Java 8 Book by Kishori Sharan

2. Fundamentals of database systems by ramez elmarsi and shamkant b.navathe

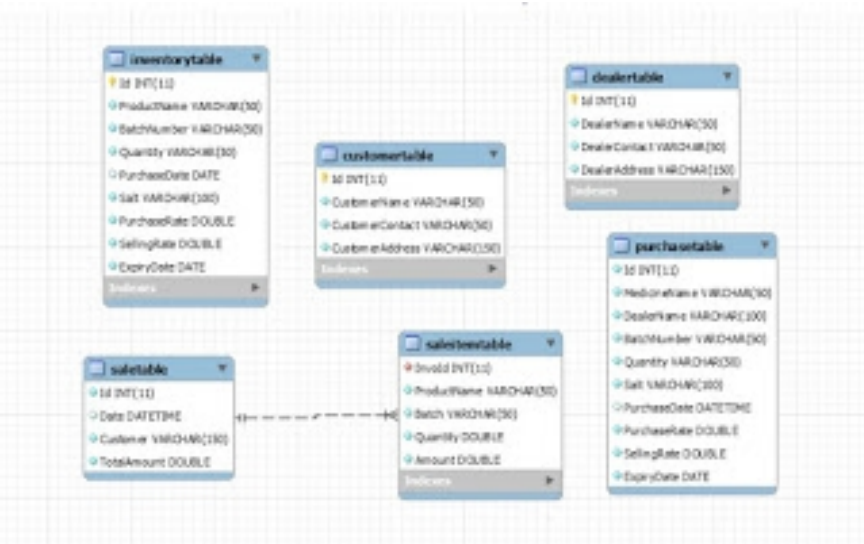
1.2. Overall Description

1.2.1 Product Perspective

Our Pharmacy Management Project contains 5 modules:

1. **Sale counter:** user can make sales for the added medicines.
2. **Purchase:** use can add new medicines or increase the quantity of existing medicines.
3. **Add customer:** add a new customer to the database.
4. **Add dealer:** a new dealer, the database.
5. **Inventory:** reflect all the available quantity of the medicines

1.2.2 Product Functions



The pharmacy management system provides functions on identification of medication dosages instruction, minimize human errors in medication safety, facilitate accessibility of drugs' information and information management among employees, provide optimal drugs movement in pharmacy units, enable reports within a significantly short period of time, despite simultaneous usage of databases for the purpose stated above. The system will solve the problem of the current system by minimizing time wastage and reducing resources which simply change manual based systems to computerized systems.

1. Store Medicine data's
2. Search Medicine data effectively
3. Update, delete, and Edit medicine information
4. Generate report on medicine Prepare bill for the medicine
5. Gives navigation or information for pharmacy organization

1.2.3 Operating Environment

1) Distributed database
2) Client/server system
3) Operating system: Windows.
4) Database: Mysql database
5) Platform: JavaFX

1.2.4 Design and Implementation Constraints

The designer normally will work under following constraints:
1. Hardware: The existing hardware will obviously affect the system design.
2. Software: The available software (operating system, utilities, language etc.) in the market will constrain the design.
3. Budget: The budget allocated for the project will affect the scope and depth of design.
4. Time-scale: The new system may be required by a particular time (e.g. the start of a financial year). This may put a constraint on the designer to find the best design.
5. Interface with other systems: The new system may require some data from another computerized system or may provide data to another system in which case the files must be compatible in format and the system must operate with a certain processing cycle.

1.2.6 Assumptions and Dependencies

Let us assume that this is a distributed pharmacy management system and it is used in the following application:

1. A request for ordering of medicines from the pharmacy .
2. Calculation of medicine prices and calculating appropriate total bill for each customer.
3. Assuming both the transactions are single transactions

1.3 External Interface Requirements

1.3.1 User Interfaces

1. Front-end software: JavaFX
2. Back-end software: MySQL

1.3.2 Software Interfaces

The database system together with interfaces would run on a window based system. MySQL will be used to query the data.

a. Operating system :
We have chosen Windows operating system for its best support and user friendliness.

b. Database :
To save the drugs, dosage and customer details we have chosen MySQL database.

1.3.3 Hardware Interfaces

On the client side interface, the proposed system will require a device with a proper screen resolution and an equivalent amount of hardware requirements such as RAM. The software shall be well equipped enough to interact with hardware components of a system like its mouse and the keyboard. A coloured monitor screen, network card and a WIFI router is also needed. On the server side the software will be hosted on a web server. Windows a browser which supports CGI, HTML & Javascript.

Hardware requirements:

System : Pentium Dual Core.

Hard Disk : 120 GB.

Ram : 1 GB

1.4. System Features

1.4.1 SQL Database

1.4.1.1 Description and Priority

The pharmacy management system maintains information on drugs, drug dosage, pricing and availability. Of course, this project has a high priority because managing our health is very important and this project helps us do it very easily and efficiently.

1.4.1.2 Stimulus/Response Sequences

1. Search for medicines.
2. Displays the requested medicine and places the order.
3. It displays the bill of the order.

1.4.1.3 Functional Requirements

The user must have the basic knowledge to operate an android or a PC. The user must also have an internet connection in order to place the order.The pharmacist must also have internet connection to receive the order.

1.4.2 Client Server System

1.4.2.1 Description and Priority

The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).

1.4.2.1 Stimulus/Response Sequences

1. Some sites are client sites and others are server sites.
2. All the data resides at the server sites.
3. All applications execute at the client sites

1.4.2.2 Functional Requirements

The client(users) must have the basic knowledge to operate an android or a PC. The user must also have an internet connection in order to place the order.The server(pharmacist) should receive orders through the internet .

1.5. Other Nonfunctional Requirements

1.5.1 Performance Requirements

Performance: The pharmacy management system operates its function in a small amount of time which is less than a few seconds and can be accessed by one user at a time or concurrently. When the system may be busy due to malfunction operation it may wait up to a few minutes.

1. E-R Diagram

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- entities: Which specify distinct real-world items in an application.
- attributes: Which specify properties of an entity and relationships.
- relationships: Which connect entities and represent meaningful dependencies between them.

2. Normalisation

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored. If a database is not properly designed it can give rise to modification anomalies. Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database. Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

1.5.2 Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

1.5.3 Security Requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

1.5.4 Software Quality Attributes

1. AVAILABILITY: The medicines should be available when the customers are placing the order.
2. CORRECTNESS: The medicines should be given correctly to the customer.
3. MAINTAINABILITY: The pharmacy should maintain the stock of the different medicines based on the purchase rate.

1.5.5 Business Rules

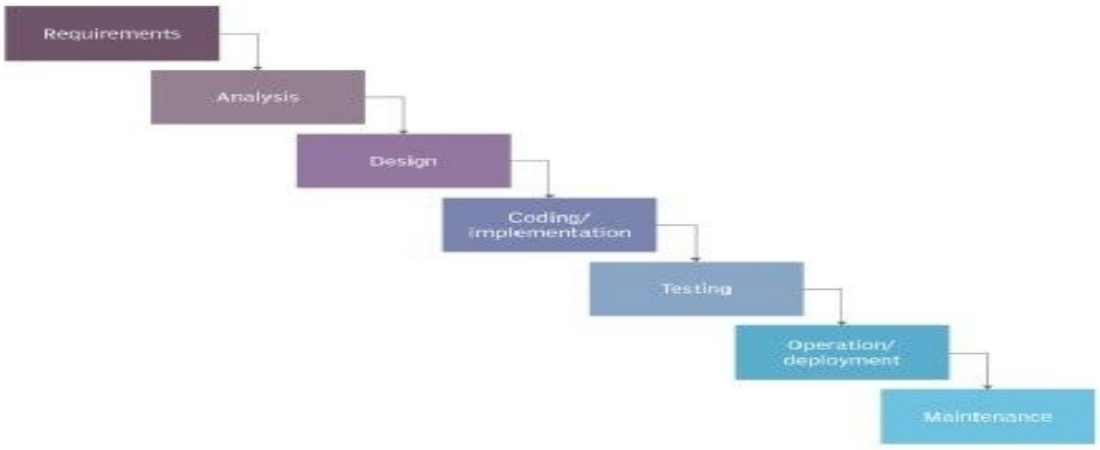
I. The software creators should not be held responsible for the failures created by the malfunctioning of the hardware system .
II. The warranty is only valid for the specified amount of time mentioned during the purchase.
III. Any maintenance series required post the expiration of warranty is subject to a fee.
IV. The creators are not to be held responsible for any improper use made by the users' end.

CHAPTER-2: PROJECT PLAN:

2.1. Lifecycle to be followed for the execution of the project and advantages of the chosen model.

Project Walkthrough:

- Create a sellers account
- Create a customers account
- Add medicines by purchasing
- View the changes in inventory
- Sell the medicines in the sale counter



■ Major System Design Activities:

Several development activities are carried out during structured design. They are data base design, implementation planning, system test preparation, system interface specification, and user documentation.

1.Data base design: This activity deals with the design of the physical database. A key is to determine how the access paths art to be implemented.

2.Program design: In conjunction with database design is a decision on the programming language to be used and the flowcharting, coding, and debugging procedure prior to conversion. The operating system limits the programming languages that will run of the system.

3.System and program test preparation: Each aspect of the system has a separate test requirement. System testing is done after all programming and testing completed the test

cases cover every aspect of the proposed system, actual operations, user interface and so on. System and program test requirements become a part of design specifications - a pre requisite to implementation.

■ Advantages:

General features, such as reports and inputs are identified first. Then each is studied individually and in more detail. Hence, the structured design partitions a program into small, independent modules. They are arranged in a hierarchy that approximates a model of the business area and is organized in a top-down manner. Thus, structured design is an attempt to minimize the complexity and make a problem manageable by subdividing it into smaller segments, which is called Modularization or decomposition. In this way, structuring minimizes intuitive reasoning and promotes maintainable provable systems.The primary advantages of this design are as follows:

1.Critical interfaces are tested first.

2.Early versions of the design, though incomplete, are useful enough to resemble the real system.

3.Structuring the design, perse, provides control and improves morale.

The procedural characteristics define the order that determines processing

■ Deliverables:

1) Software Requirements Specification. (SRS)
2) Estimated Timeline and Tools Requirement Specification.
3) Document Design.
4) Planning The Project.
5) Project Management Planning and Risks Management.6) Software Configuration.
7) Testing The Software.

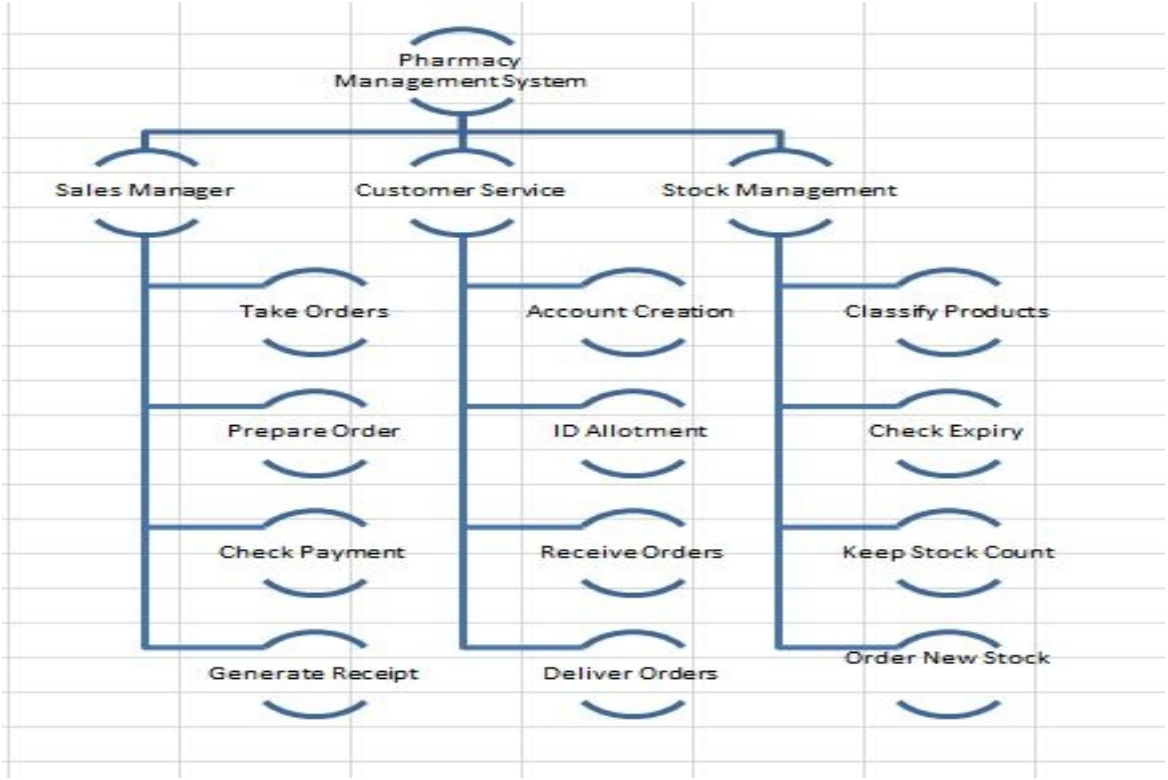
■ Reused Components:

1) Medicine Details.
2) Payment option
3) Delivery location information
4) Utilities and stock details

■ Built Components:

1) Customer Login Page.
2) Customer Signup page
3) Pharmacist Account.
4) Customer Registration
5) Customer Details.
6) Bill generation
7) Sales Data
8) Transaction

➢ Create a WBS for the entire functionalities in detail.

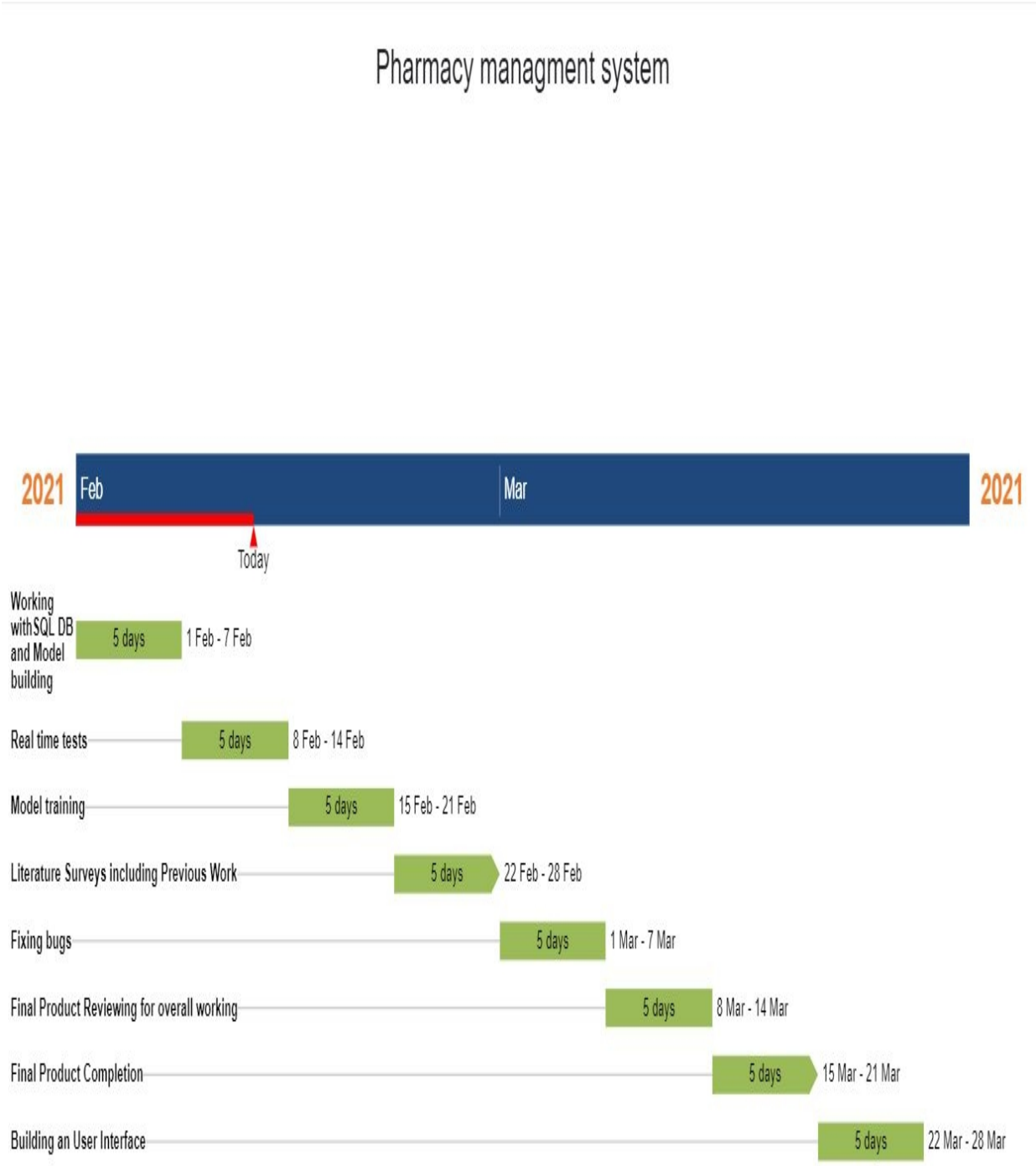


- **Do a rough estimate of effort required to accomplish each task in terms of person months.**

1. Literature Surveys including Previous Work- Sai kishore reddy, Manne Vasanth, Lekha Suresh(1 weeks)
2. Working withSQL DB and Model building -Sai Kishore(1 weeks)
3. Model training -Sai Kishore(1 week)
4. Building an User Interface-Manne Vasanth(1 weeks)
5. Real time tests -Manne Vasanth(1 week)
6. Fixing bugs-Lekha Suresh(1 week)
7. Final Product Reviewing for overall working-Lekha Suresh(1 week)
8. Final Product Completion-Sai Kishore, Manne Vasanth, Lekha Suresh (1 weeks)

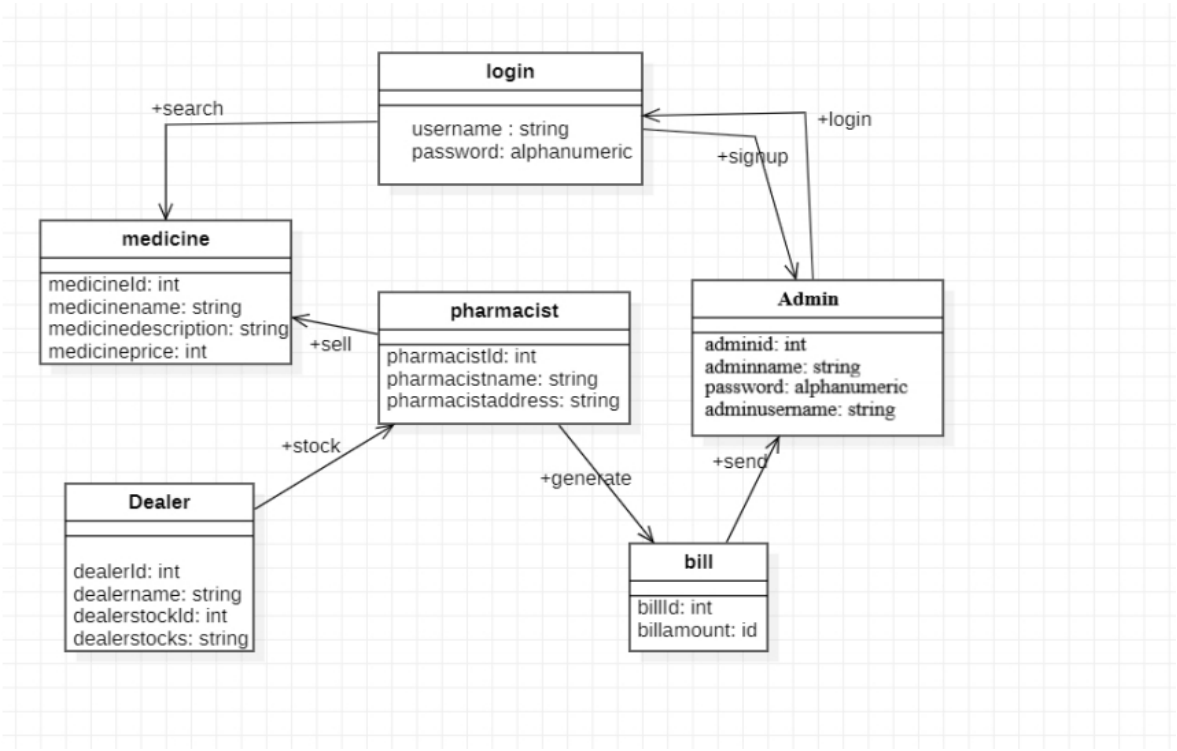
Effort, E = a*(KLOC)^b Person Months
As we are using the organic model,
a=2.4, b=1.05, c=2.5, d=0.38
Therefore, Effort E = 2.4*(2.5)^1.05
Effort, E = 6.28 Person Months
Time for development (Tdev) = c*(efforts)^d Months
therefore , Tdev = 2.5*(6.28)^0.38Tdev = 5.025 Months

- **Create the Gantt Chart for scheduling.**



CHAPTER-3: DESIGN DIAGRAMS

3.1: Class Diagram

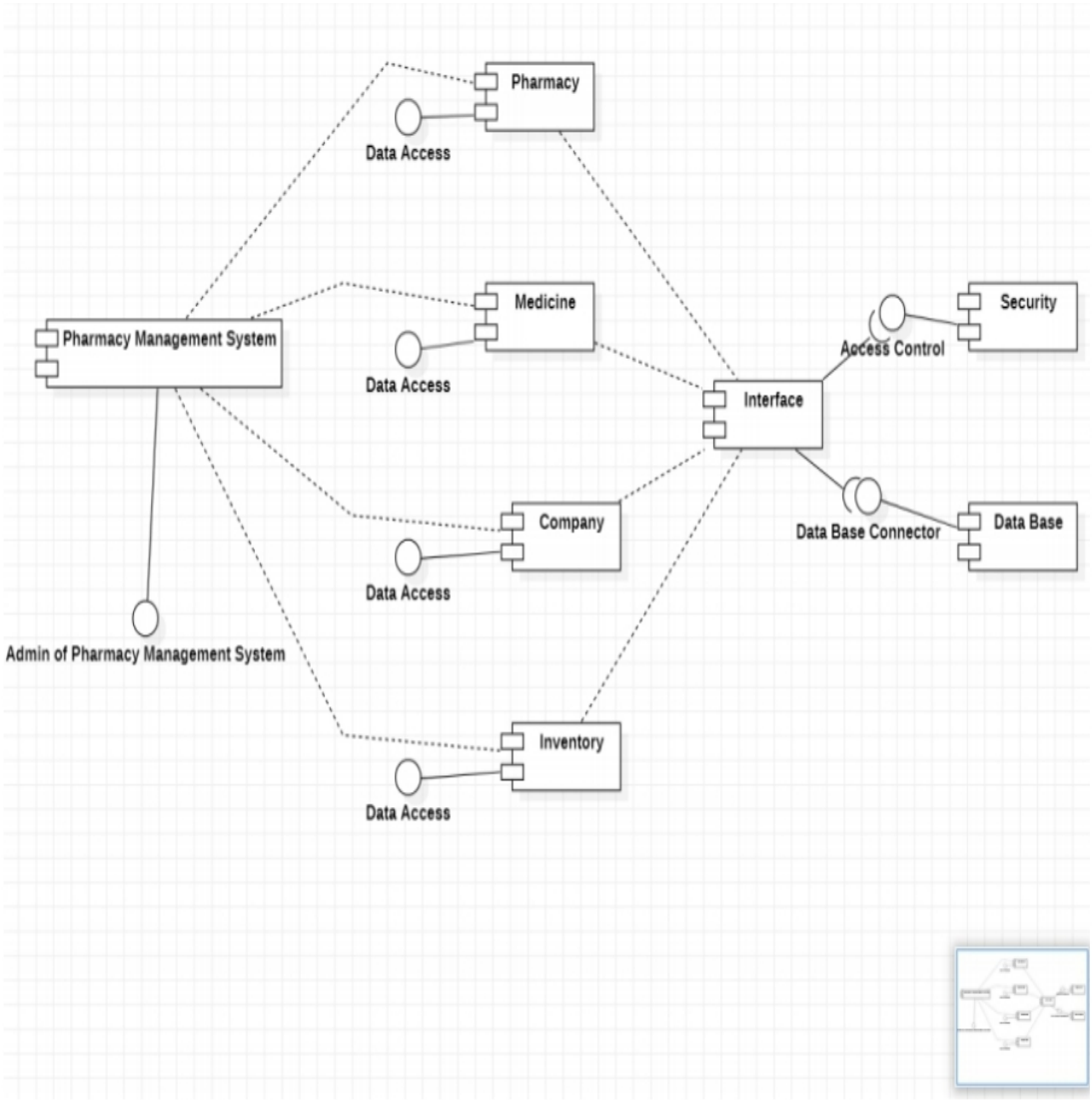


A **Class Diagram** in Software engineering is a static structure that gives an overview of a software system by displaying classes, attributes, operations, and their relationships between each other. This Diagram includes the class name, attributes, and operation in separate designated compartments.

Class Diagram defines the types of objects in the system and the different types of relationships that exist among them. It gives a high-level view of an application. This modeling method can run with almost all Object-Oriented Methods. A class can refer to another class. A class can have its objects or may inherit from other classes.

The various classes present in our project are library, member,user ,staff ,book issued,books ,journal faculty ,student .All these classes have their attributes and operations to perform . A few of the operations are add book,remove book, search by id, search by name,pay fine,issue ,return etc .There also exists relationships between these classes , such generalization , aggregation , multiplicity , association and etc.

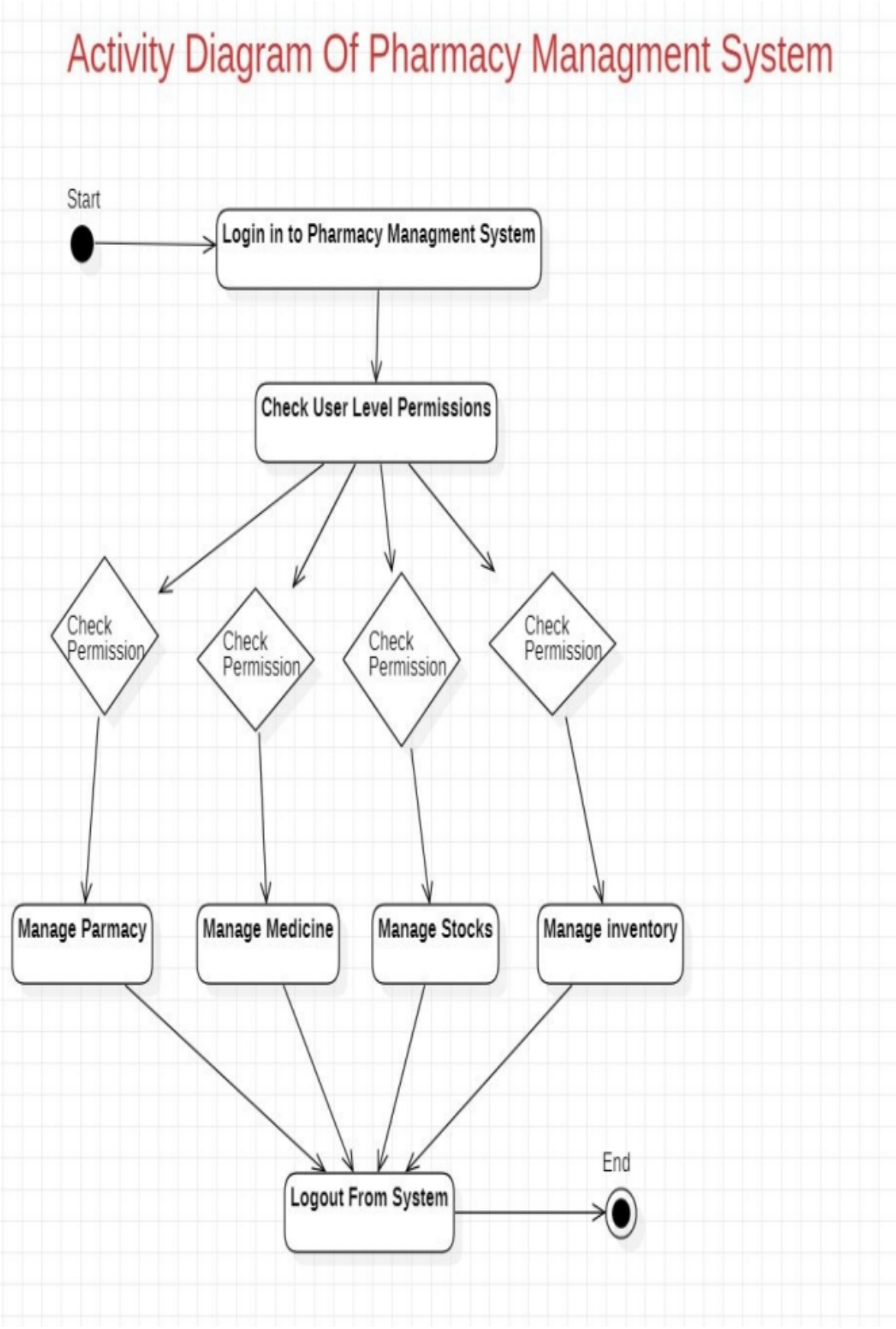
3.2: Component Diagram



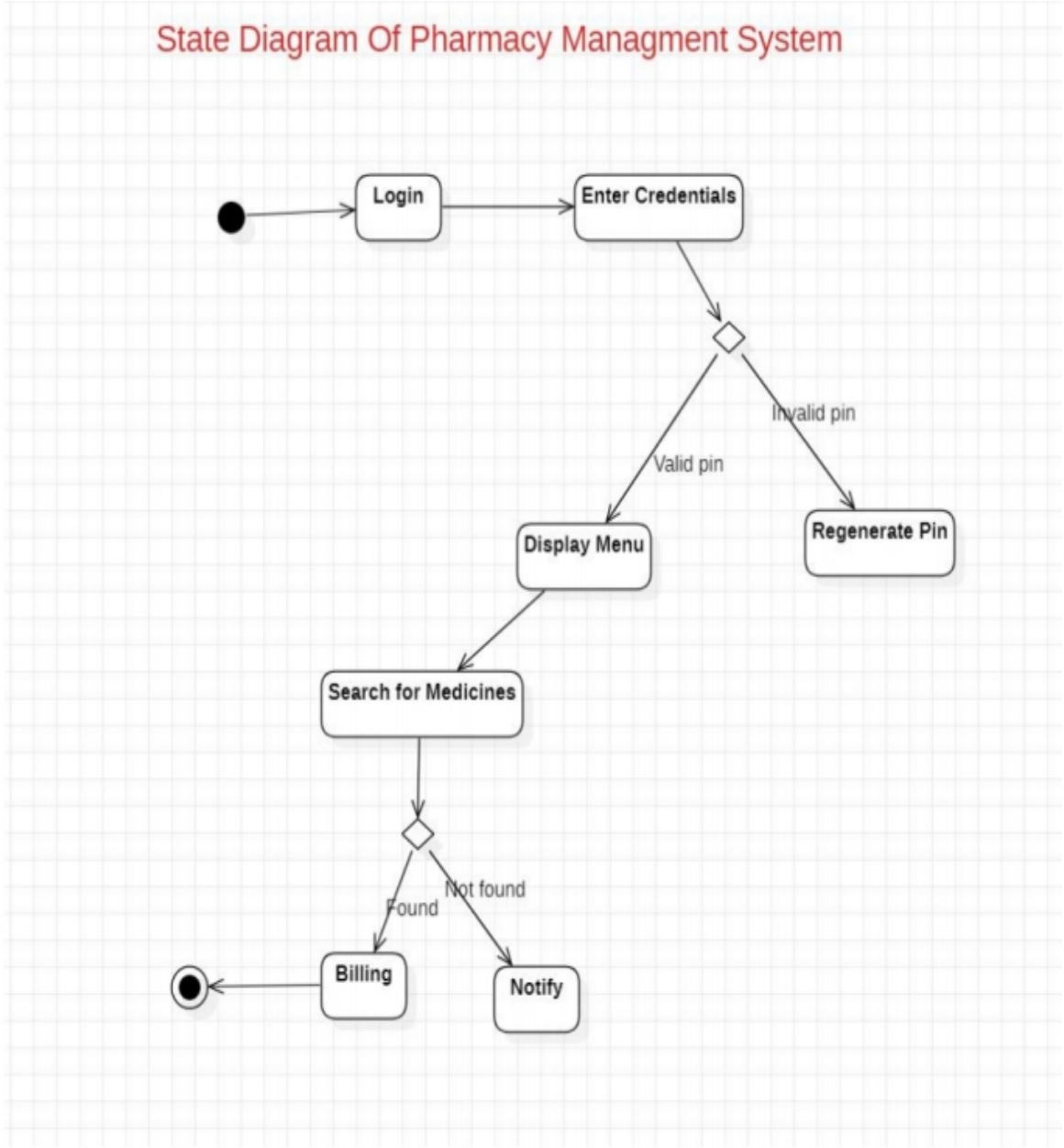
The above diagram is a representation of all the present components and how they are connected with each other.

As we can see there are components such as the library database, which is connected to an interface, via which multiple actions could be performed. The search component would check if the book exists in the database or not, the transaction component is responsible for the issue/return/fine calculation. The member component indicates that, only members can do a transaction (members include students, staff etc).

3.3: Activity Diagram



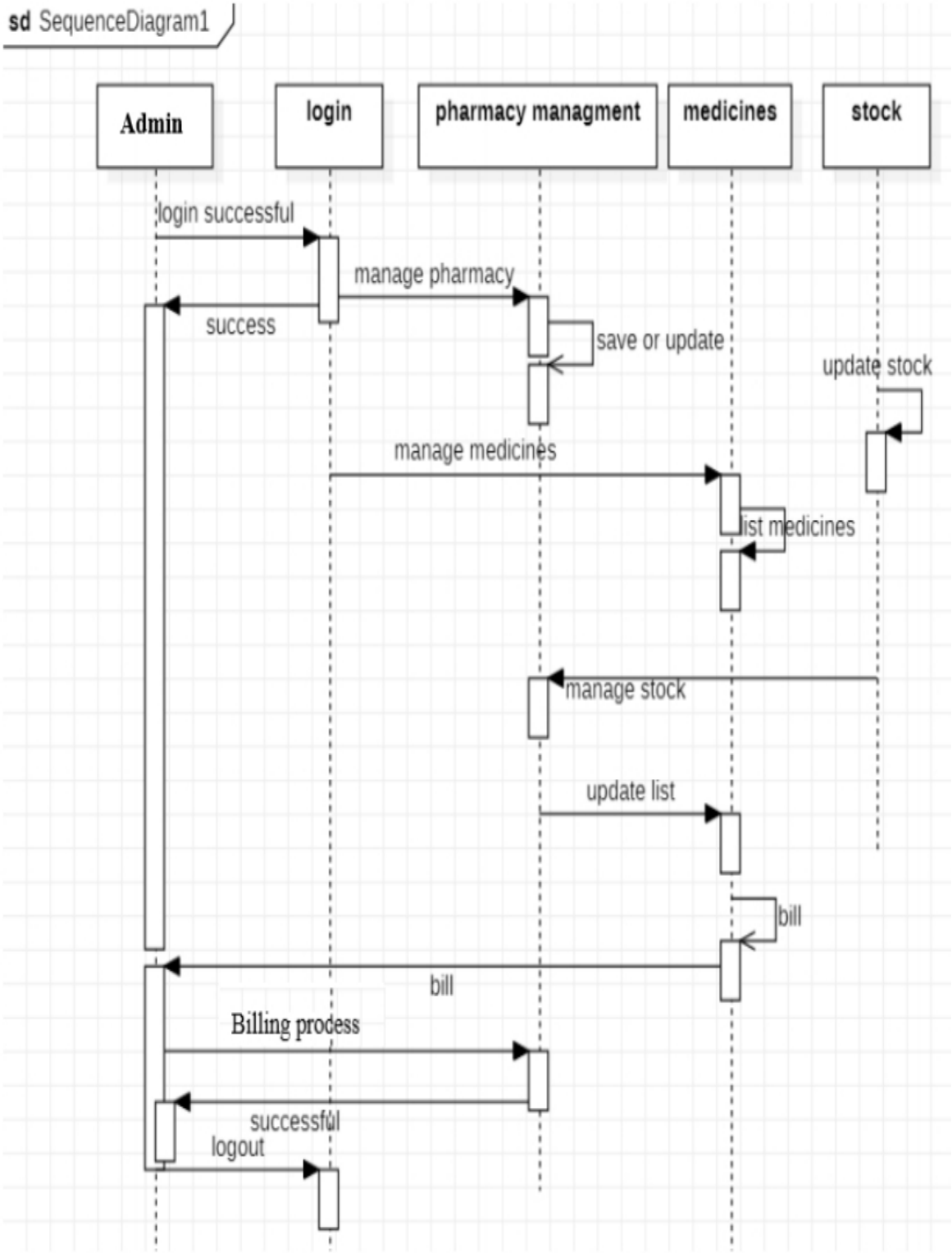
3.4: State Diagram



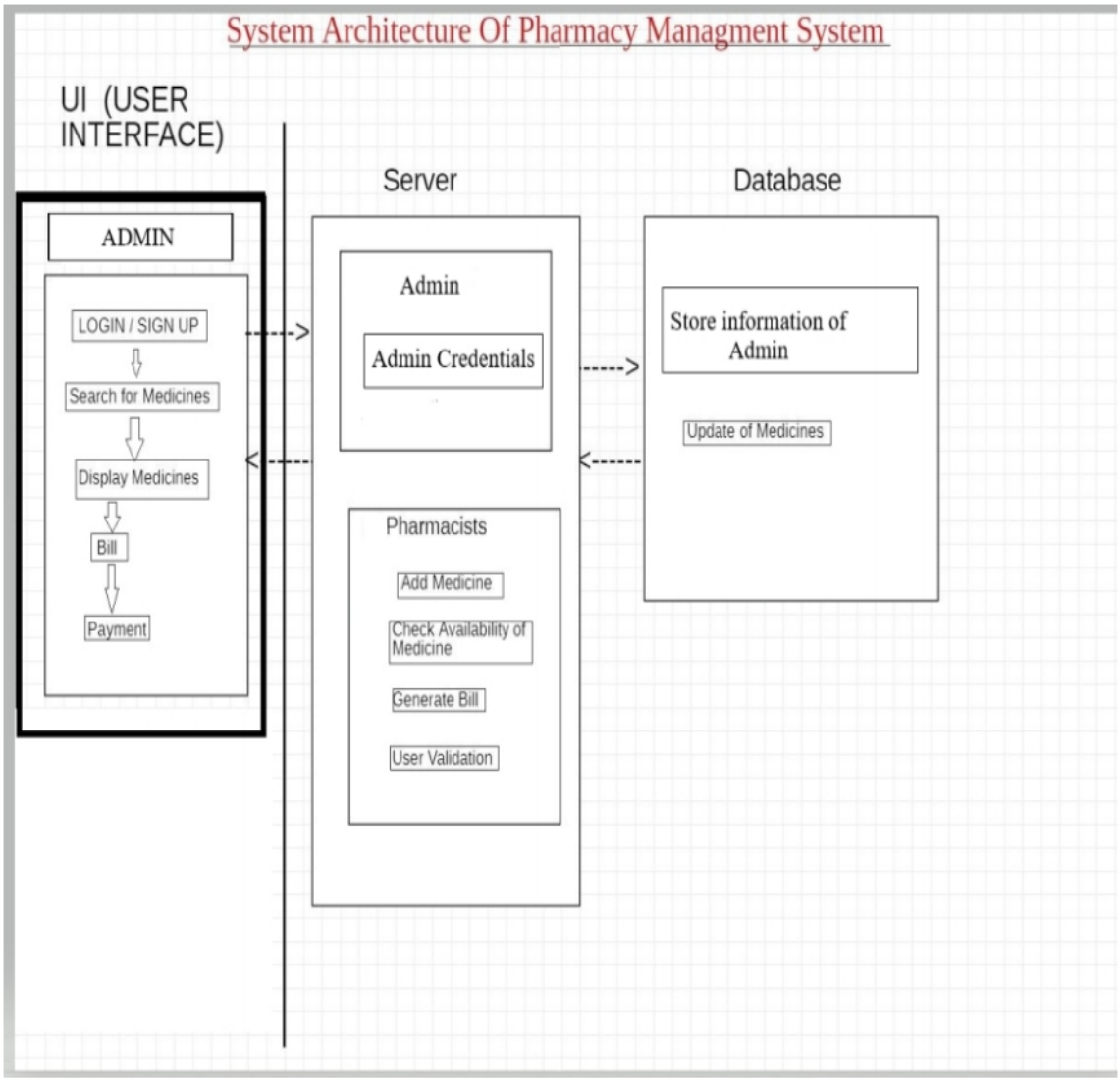
A state diagram is used to represent the condition of the system or part of the system at finite instances of time. It's a behavioral diagram and it represents the behavior using finite state transitions. State diagrams are also referred to as State machines and State-chart Diagrams.

Some states that are present in our library are idle state ,new state, calculate fine, validate member, issue book ,return book etc . a user can move from one state to another only if he/she satisfies the conditions required. In this diagram the initial state is the shaded circle and the double circle represents the final state.

3.5: Sequence Diagram



3.6: System Architecture Diagram



CHAPTER 4: MODULE DESCRIPTION

I. Login :

Provide the correct login credentials of the account and u will be logged into the account. If u provide wrong credentials then you will not be logged into account. You can change the password of the account after logging into the account.

II. Add / Remove Company :

Once the admin is logged into the account he can add or remove a company. The pharmacy store gets the stock from the company. The company will provide the stock to the store. Admin can Add a new company by adding the company name , Address , Mobile number and he can purchase stock from the company by providing the details of the drug and the amount of quantity. If he wants to close the connection or wants to end the connection with the company he can remove the company from the companies list.

III. Sales :

The customer wants some medicines. He purchases the drugs required to him , and Admin will generate the bill of the medicines that the customer wants to buy . The bill details will be stored into the database. The admin can check the sales of all the other people who sold the medicines in the store. He can check at what time the other people logged into the account .

IV. Drug Details:

This section contains the information regarding the drugs. Admin can check the details of the drugs that are present in the store. Admin can edit the price of the Drugs that are in the store . He can check the expired drugs that are in the store, so that he can replace the expired drugs with the new drugs. He can renew the validity of the Drug after changing the expired drugs. He can check the stock availability of the drugs in the store. If any Drug is going to be finished he gets to know that the stock is going to be over. So he can buy new stock of the medicine that is going to be finished and maintain the stock. Admin can Add a new Drug that he bought from the company. He can modify the details of the Drug. He can check the list of all Drugs present in the store .

V. Purchase Drugs:

Admin will check the stock present in the store. If any drug is going to complete , he purchase the Stock from the company and add the drug details . Admin can select the company from which he wants to buy the stock to refill the stock in the store.

VI. Add / Delete users:

Admin can add new users to the store and he can update the details of the user.

CHAPTER 5: TEST CASES

TEST CASES

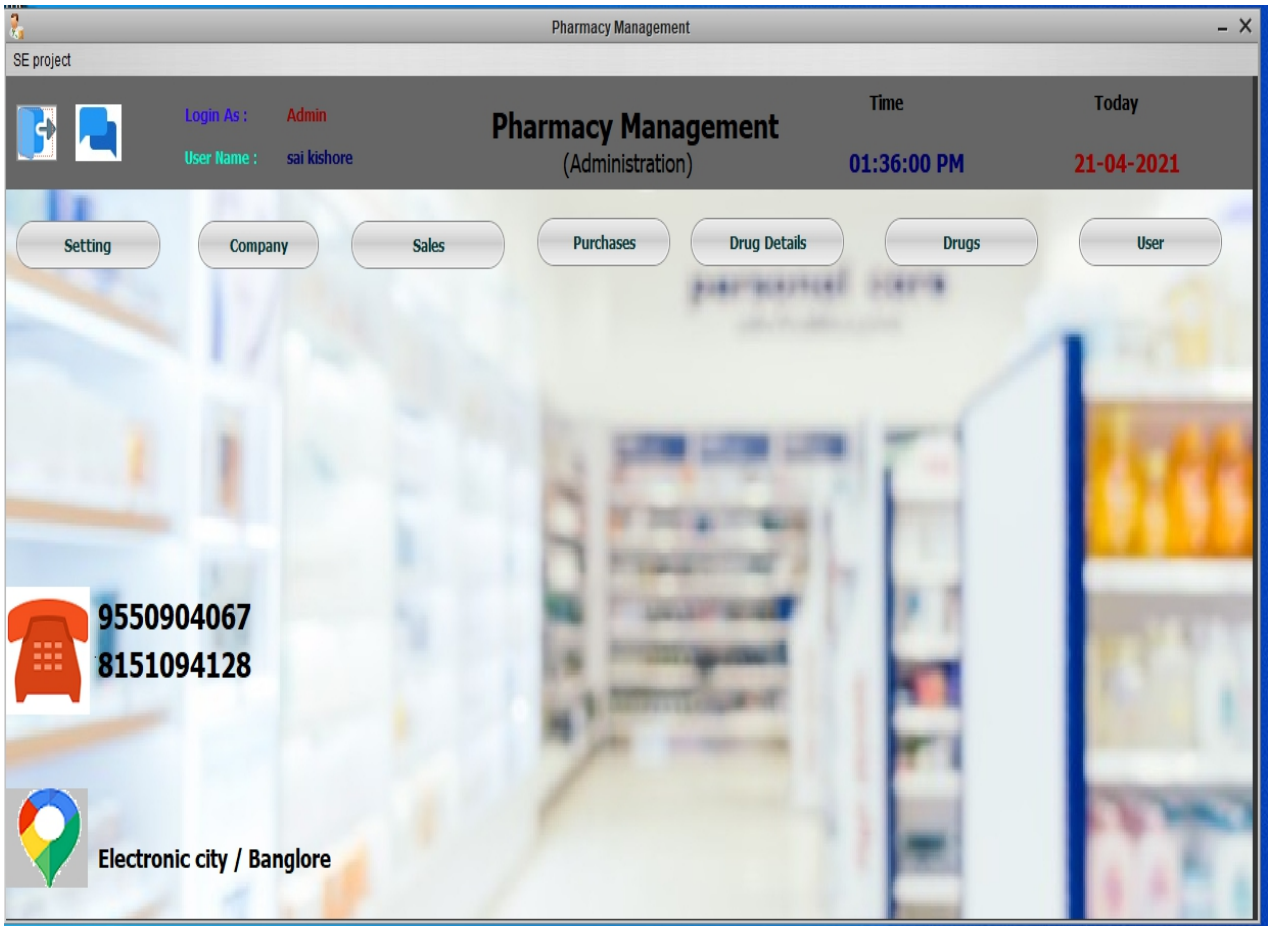
Test Case ID	Name of Module	Test Case Description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result
UT_01	Login	Logging in into admin account	Server is up and running	Login info. Be entered into the field specified	User Id: 1 Password: 9550904067	Admin dashboard visible	Admin dashboard is visible	PASS
UT_02	Login	Logging into admin account	Server is up and running	Wrong info be entered into the field specified	User Id: 1 Password: 1234	Alert for wrong password	Alert for wrong password	PASS
UT_03	Login	Logging into not existing account	Server is up and running	Entering the details of not existing account	Username: 1234 Password: 123456	Account doesn't exist	Account doesn't exist	PASS
UT_04	Sign Up	Adding new account	Server is up and running	Adding user Id and password	User Id : 3 Password: rootadmin	Creates new account	Creates new account	PASS
UT_05	Sign Up	Adding new account	Server is up and running	Adding user Id and Password	User Id : 3 Password: 12345	Password should be of minimun length 6	Password should be of minimun length 6	PASS
UT_06	Sign up	Adding new account	Server is up and running	Adding user Id and Password	User Id : 3 Password: 123456 DOB : not entered any details	Complete ur application message should appear	Complete ur application message should appear	PASS
UT_07	Delete user	Deleting the user	Server is up and running and logged into account	Deleting the user	Select the user to be deleted	Selected user need to be deleted	Selected user to be deleted	PASS
UT_08	Update details	Update the user details	Server is up and running and logged into	Update the details	Address and some details has been changed	The address should modify	The address is modified	PASS

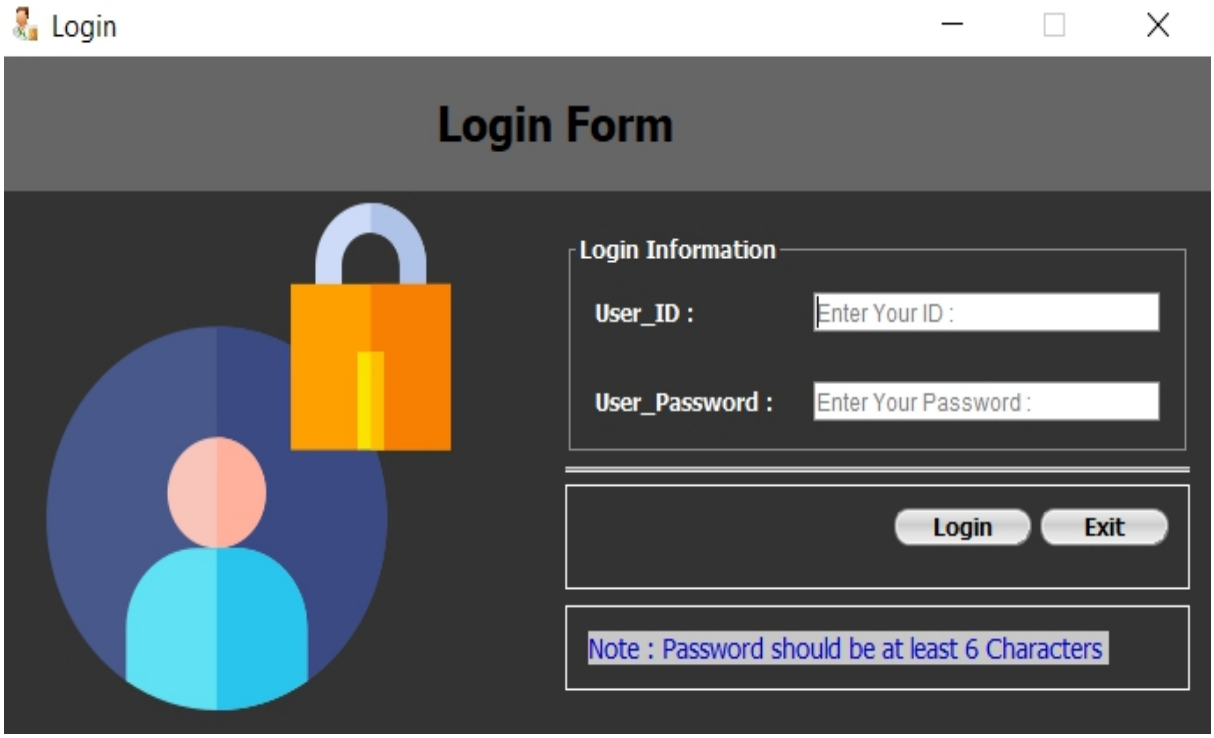
			account					
UT_09	change password	Change the password	Open the settings and change password	Change the password	Old_ password: 9550904067 New_password : 9550196021 Confirm_new_ password: 9550196021	The password should be changed	The password has been changed	PASS
UT_10	Login details	Login details form	Server is up and running and logged into account	Shows the login timings	Logout and login to the account	It should displays all the login information timings	Displayed the timings of the logged into account	PASS
UT_11	Add company	Add new company	Logged into account	Adding a new company	Company name: pharma Company address: banglore Company Phone: 9550904067	It should add the company	It added the new company	PASS
UT_12	Add company	Add new company	Logged into account	Adding a new company	Company name: pharma Company address: Company Phone: 9550904067	It shouldn't add the company	It didn't add the new company	PASS
UT_13	Delete company	Deleting the company	Logged into account and go to the end with company form	Deleting the company	Company name: yelanka	It should delete the company details	It deleted the company details	PASS
UT_14	Update company	Updating the company details	Open the updates section in the company	Updating the company details	Company name: electronic city Company_Address : Banglore Company Phone: 99554404933	Should update company information	Updated the company information	PASS
UT_15	Update company details	Updating the company details	Open the updates section in the	Updating the company details	Company name: electronic city Company_Add	It should display complete the information	It displayed the complete	PASS

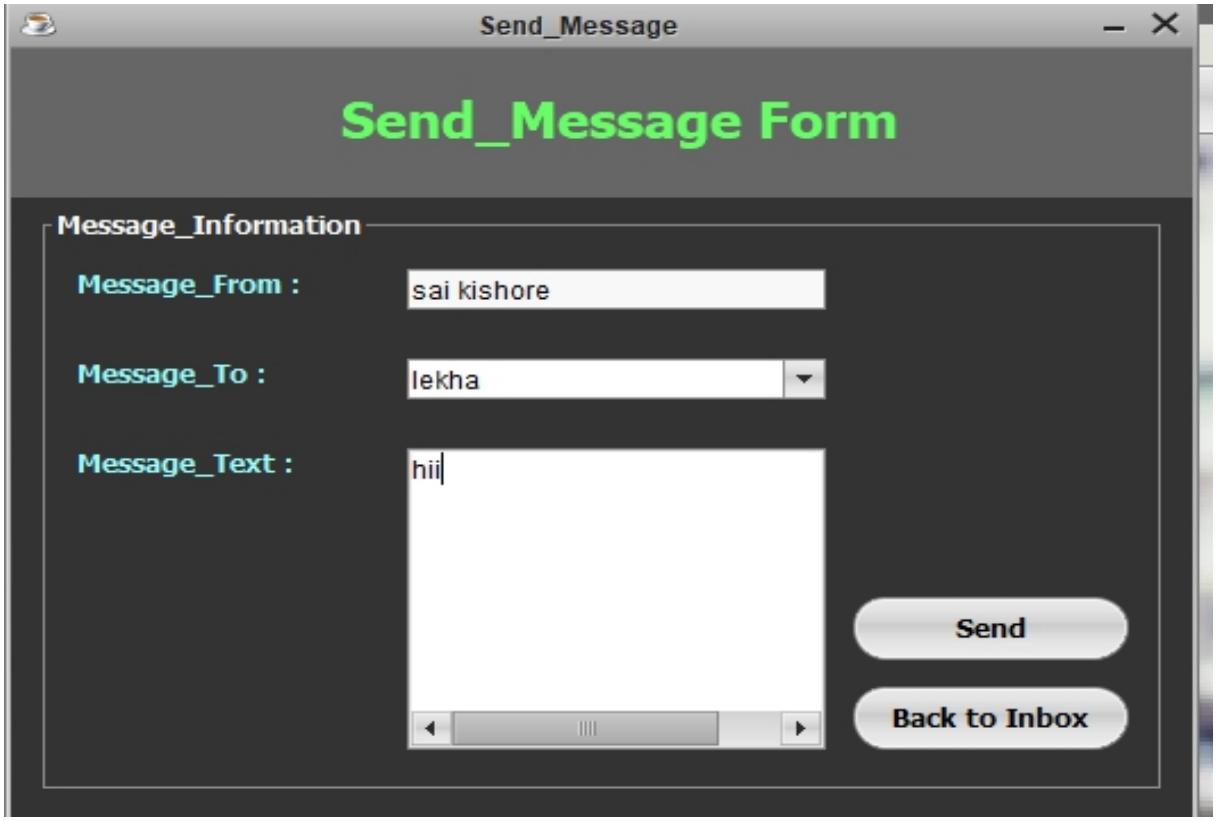
			company		ress : Company Phone: 99554404933		the informati on	
UT_16	Sales bill	Billing of the medicine	Open the billing section	Calculating the bill	Barcode : fsdjkbdfjkffds Quantit : 14	It should generate the bill amount	If generate d the bill	PASS
UT_17	Out of stock	Display the medicines stock has finished	Open the bill and add the drug which is out of stock	It should display drug is out of stock	Barcode : fsdjkbdfjkffds Quantit : 14	It should display drug is out of stock	It displaye d drug is out of stock	PASS
UT_18	Shift sales	Display the sales form	Open the shift sales	It display the sales of the each admin	User name: Kishore reddy	It should display the sales form	It displaye d the sales form	PASS
UT_19	Buy drug	Buy drugs from the company	Open the buy drugs from purchases	It displays a form to buy drug	Drug code: Fsdjkbdfjkffds Drug name: Declofine	It should buy drugs from the company	It bought drugs from the company	PASS
UT_20	Check places	Check the place of the drug	Open the check place	It should display the place of the drug	Drug code: fsdjkbdfjkffds	It should display the drug place	It displaye d the drug place	PASS
UT_21	Edit price	Edit the price of the	Edit the price of the drug.	We enter the drug code and new price	Drug code: Fsdjkbdfjkffds New Price: 12	It should edit the price of the drug	It edited the price	PASS
UT_22	Expired drugs	Display the expired drugs	The drug is in the shop	We check the expiered drugs	Expire date : Providing the expirary date of a yesterday	IT should display the drug expired	It displaye d the drug expired	PASS
UT_23	Finished	Display the Drugs almost finished	The drug should be less	We check the availability of drugs	Entering the drug quantity less	It should display the quantity is less	It displaye d the quantity is less	PASS
UT_24	Add drug	Add the drug	Provide the details of the drugs	We provide the drug and quantity	Drug name: Declofien Drug Type: Bills Drug barcode: Fsdjkbdfjkffds	It should add drugs	It add the drugs	PASS

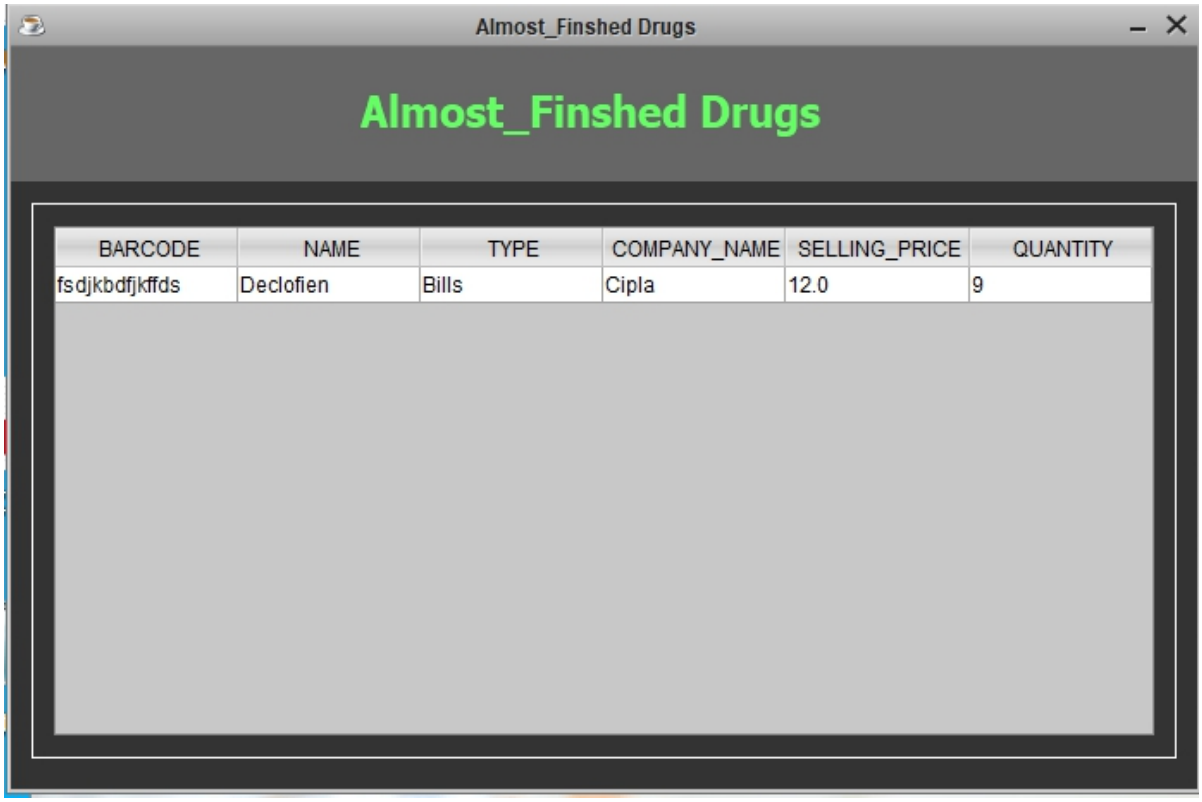
UT_25	Search drug	Search the drug	Drug information should be available	Enter the drug barcode	Drug Barcode: Fsdjkbdfjkffds	It should display the drug information	It displayed the drug information	PASS
UT_26	Drug list	Display the drugs avaailable	Drug information should be available	Click on the drug list	Click on drug list	If should display all the drugs information	If displayed all the information	PASS
UT_27	Send message	Send message	2 members should be available	Click on send message and enter to whom u want to send and text message	Message TO: Vasanth Message_Text: Hi vasanth	It should send message to vasanth	It has send message to vasanth	PASS

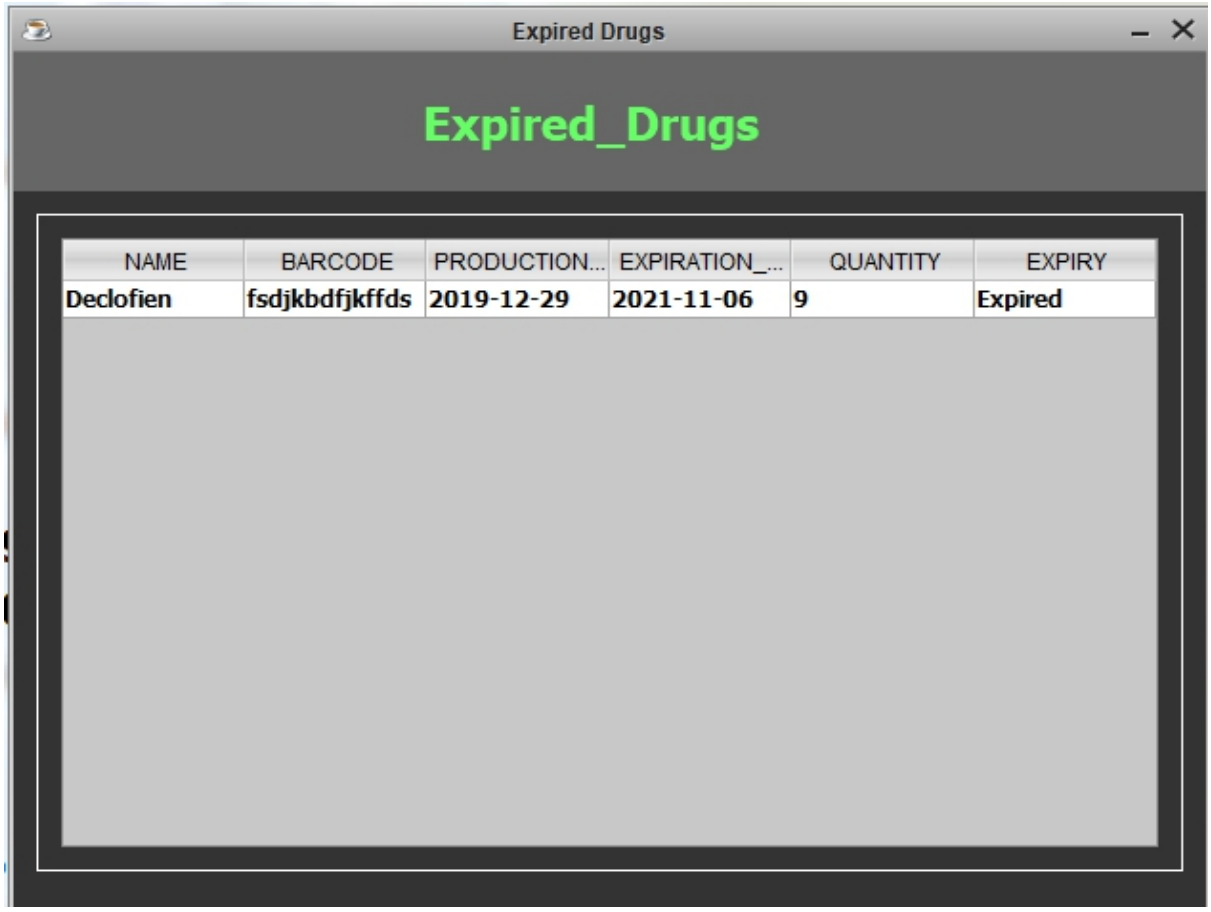
CHAPTER 6: SCREENSHOTS

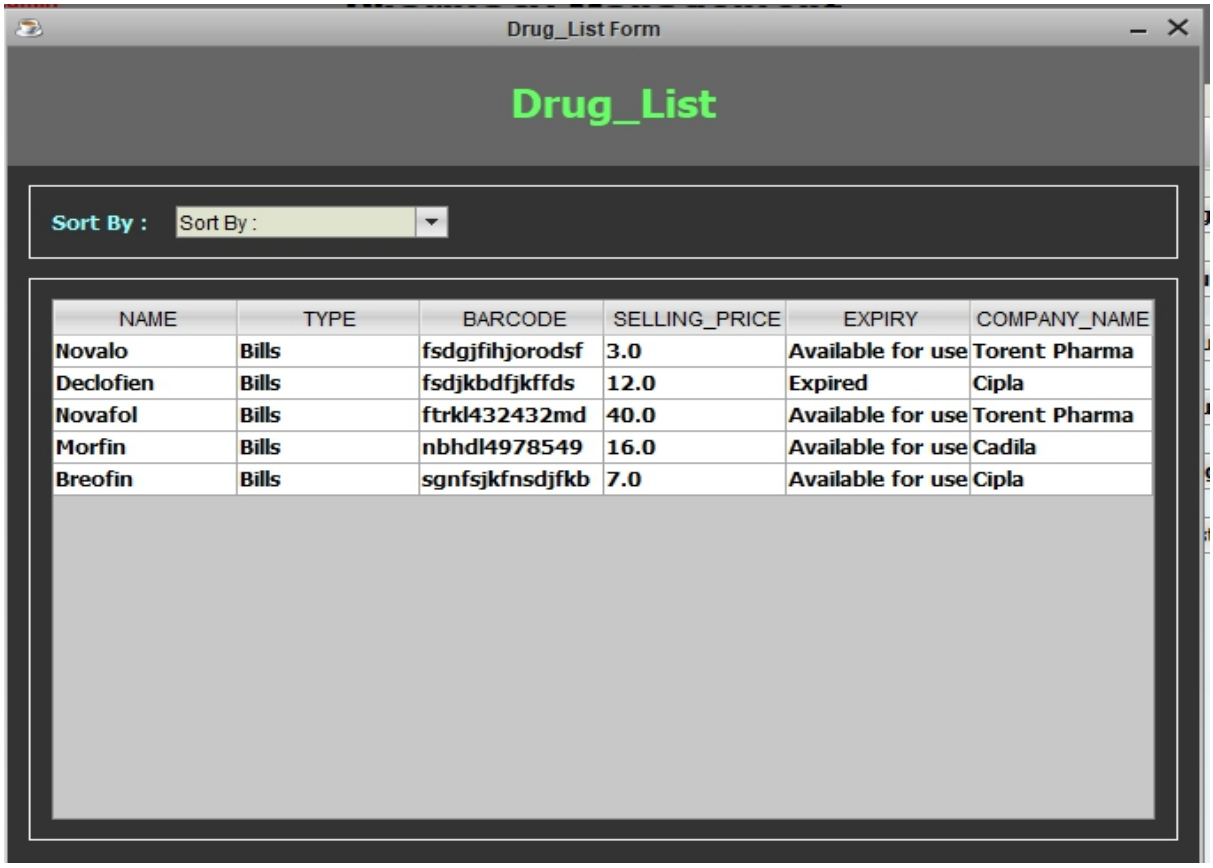


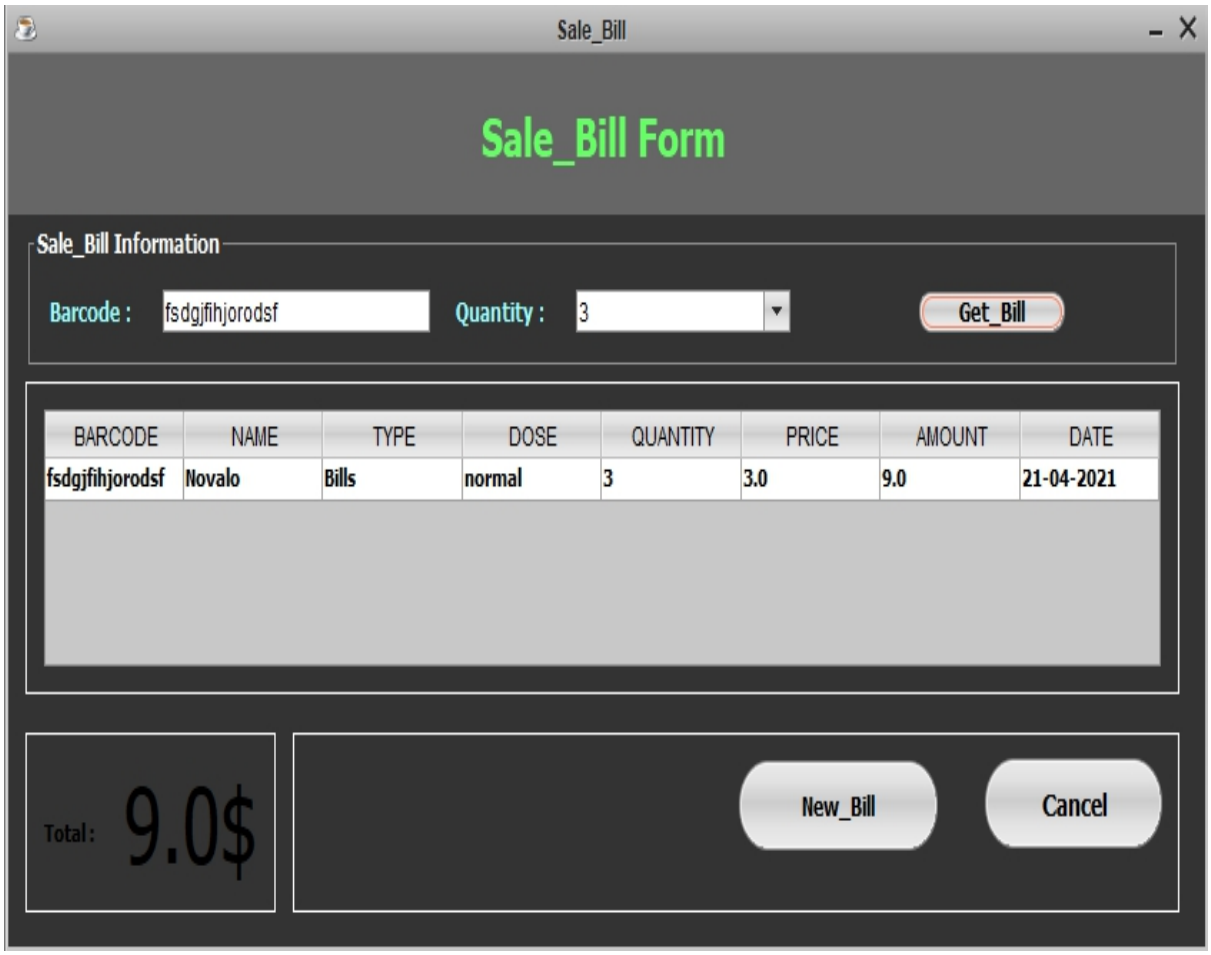

Login
Login Form
Login Information
User_ID :
Enter Your ID :
User_Password :
Enter Your Password :
Login
Exit
Note : Password should be at least 6 Characters


Send_Message
Send_Message Form
Message_Information
Message_From :
sai kishore
Message_To :
lekha
Message_Text :
hii
Send
Back to Inbox


Almost_Finshed Drugs
Almost_Finshed Drugs
BARCODE
NAME
TYPE
COMPANY_NAME
SELLING_PRICE
QUANTITY
fsdjkbdfjkffds
Declofien
Bills
Cipla
12.0
9


Expired Drugs
Expired_Drugs
NAME
BARCODE
PRODUCTION...
EXPIRATION_...
QUANTITY
EXPIRY
Declofien
fsdjkbdfjkffds
2019-12-29
2021-11-06
9
Expired


Drug_List Form
Drug_List
Sort By :
Sort By :
NAME TYPE BARCODE SELLING_PRICE EXPIRY COMPANY_NAME
Novalo Bills fsdgjfihjorodsf 3.0 Available for use Torent Pharma
Declofien Bills fsdjkbdfjkffds 12.0 Expired Cipla
Novafol Bills ftrkl432432md 40.0 Available for use Torent Pharma
Morfin Bills nbhdl4978549 16.0 Available for use Cadila
Breofin Bills sgnfsjkfnsdjfkb 7.0 Available for use Cipla


Sale_Bill
Sale_Bill Form
Sale_Bill Information
Barcode :
fsdgjfihjorodsf
Quantity :
3
Get_Bill
BARCODE NAME TYPE DOSE QUANTITY PRICE AMOUNT DATE
fsdgjfihjorodsf Novalo Bills normal 3 3.0 9.0 21-04-2021
Total :
9.0$
New_Bill
Cancel