College of Engineering Pune

(An Autonomous Institute of the Govt. of Maharashtra)

Software Engineering Mini Project II
Third Year Computer Engineering

PHARMACY MANAGEMENT SYSTEM

Under the guidance of
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SOFTWARE REQUIREMENTS SPECIFICATION

for

Pharmacy Management System

Prepared by
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College of Engineering,Pune

March 8, 2022

Contents

Revision History

Name	Date	Reason For Changes	Version

1 Introduction

1.1 Purpose

The world changes every-day and there are new medicines discovered. The main problem in a Pharmacy Management System is to keep it updated. Due to the constant advancement in the medical field of the world, it is very difficult to keep the pharmacy management system up-to-date and to keep a track of every medicine available. It is a very tedious updated every now and then. Expiration dates create an issue as well since the pharmacy needs to be careful while distributing medicines in large numbers. job to keep the system proper and error free and to keep the pharmacy working in an efficient and in an orderly manner. Medicines cures diseases and illnesses and hence are very important to be

1.2 Document Conventions

This SRS document has been written following the IEEE SRS standard format.

1.3 Intended Audience and Reading Suggestions

This document is intended for users, testers and developers. The SRS contains details about the features of the website, requirements as well as other non-functional requirements. The users can read the document from beginning to the end or they can follow the Page of Contents to find the section they want to read.

1.4 Project Scope

Pharmacy Database Systems are widely used all around the world and a large dependency exists on these applications. The curiosity of wanting to know the working of these systems and the amount of importance it pays in any medical field lead to the idea of building our way from ground zero to making an application close to the real world software on a small scale.These software's are always on updated by increasing the accuracy of the data or by increasing the connectivity speed or by making it more user friendly. As pharmacy provides medical products that make or break lives, so it is very important that these software's that hold the data of these products are easy to read, write and edit. These are the places where improvement scopes are present.

1.5 References

- Mysql Database Connectivity with Python
- GUI connectivity with Database
- XAMPP Online server for Database
- Youtube

2 Overall Description

2.1 Product Perspective

This Project is a newly developed application which has features that helps in handling large database of Pharmacy without much difficulty.The users of this Pharmacy Management System are the pharmacists who are working in the pharmacy. The pharmacist uses this software to get the details and the reference of customers and hospitals which they provide services to. It is even used to keep a track of medical items such as medicines, sanitation items, etc.

2.2 Product Functions

The project, Pharmacy Management System, covers various functional requirements. Some of them being- log-in, sign-up, profile, etc.

FUNCTION DESCRIPTION

- **Log-in:** The log-in function is used to provide absolute privacy to a customer or a specific hospital by asking its ID- number and name. The whole system is personalized according to the customer/hospital that has logged in.
- **Sign-up:** The sign-up function helps a customer/hospital to create a new account in the system and then move further with the shopping process.
- **Profile:** This function shows all the details of the logged in entry. Details like name, contact number, email-ID, ID, address, etc. are displayed.
- **Edit Profile:** Edits the details if the users need to alter their details. All details except ID of the user can be deleted.
- **Product Buttons:** Product Buttons are products that are segregated into 8 types and their buttons when clicked will display the items for that category that can be there added in the cart. All items are displayed on the main page with a paging system with one page showing 4 items maximum.
- **Cart:** The cart function is like any other cart where the customer's final shopping details are visible. This allows the customer/hospital to review its order and place it and further move towards the payment.

- **Payment:** The completed order will require payment to be considered final and hence this function is used.
- **Log-out/Exit:** This function is used to finally exit the whole system. Once exited, the customer/hospital is automatically logged out as well.

2.3 User Classes and Characteristics

- It can be used by **managers**, **officials**, **doctors** etc. in hospitals to keep track if inventory and the usage of all medicines and products.
- **Customers** can use this application with some further advancements as a buying platform.

2.4 Operating Environment

This application will run on all all kinds of Operating System(Windows,Linux,etc).

2.5 Design and Implementation Constraints

We will create a Pharmacy Management System using mySQL for the back-end and Python (Tkinter Module) for the front-end.

2.6 Assumptions and Dependencies

- Hospital Officials and Customers can only login if we will enter correct randomly generated ID's.
- There should be stable internet Connection.
- There will be Proper Validation for Email and Mobile no.

3 External Interface Requirements

3.1 User Interfaces

- First Window on user interface will be Login and Sign up page for both Customer as well as Hospital login.
- After Making Account the system will generate Random ID's for login.
- After Signing in we will enter the basic layout of the functions which will be available on the main page.
- On the main page itself, there will be different options like editing profile, cart etc.

3.2 Hardware Interfaces

There is no hardware aspect to this project.

3.3 Software Interfaces

- For Front End we will develop a GUI using TKINTER and PYTHON Language.
- For Back End we will create a database of Pharmacy Store using SQL language and coded in MYSQL.

3.4 Communications Interfaces

There is no Communication Interfaces related to this Project.

4 System Features

4.1 Tkinter Buttons

4.1.1 Description and Priority

Tkinter Buttons are basically the interactive buttons that helps in submitting the details of any kind and even makes our GUI more user friendly .

4.1.2 Stimulus/Response Sequences

Whenever user will fill the details and submit the details using tkinter buttons then that changes will reflect in the database and will store permanently there.

4.1.3 Functional Requirements

The project, Pharmacy Management System, covers various functional requirements. Some of them being- log-in, sign-up, profile, etc.

- We need to setup different buttons for login,signup etc.
- There should be proper calculations in the background for Cart and other expiry related info.
- Buttons should be properly setup so that it can Authenticate the user and Hospital properly.

4.2 Mysql Query Execution

4.2.1 Description and Priority

SQl queries are used to fetch the particular information from the Database.It has its own syntax like other programming Languages.

4.2.2 Stimulus/Response Sequences

We have connected our GUI with Mysql so buttons that we are using are internally attached to Queries.Whenever we perform any operation like Adding items in the cart at same time that query will execute in the Background and will perform that specific operation for us.

4.2.3 Functional Requirements

- Proper setup of Buttons with Queries is needed.
- There will be different Queries for different Functionalities and that we need to take care of.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

This application of Pharmacy Management system can smoothly function on any computer with min 4 GB RAM and basic processor.

5.2 Safety Requirements

As we are making our Database on Xampp server which is on localhost,there will be no chances of leaking data and it can there for long time which is good as far as safety is concerned.

5.3 Security Requirements

For Customer as well as Hospital Login,there will be different ID's for every person which is generated while making Accounts.

5.4 Software Quality Attributes

- **AVAILABILITY:** The system is available for the users 24x7.
- **MAINTAINABILITY:**The team work on the maintenance and the update of the system.
- **USABILITY:**The system can be used from anywhere if there will be connectivity to the internet and a device.

5.5 Business Rules

- Both Hospital and Customers can edit their profiles once created.
- Surgical Instruments will only accessible to Hospital.
- Rest all the Categories are accessible to both Hospital and Customers.

6 Other Requirements

6.1 Appendix A: Glossary

The Glossary used in the Document:

- **GUI** :Graphical User Interface
- **SQL** :Structured Query Language.
- **Tkinter**:Tool kit interface.

6.2 Appendix B: Workflow, Planning Cost Estimation

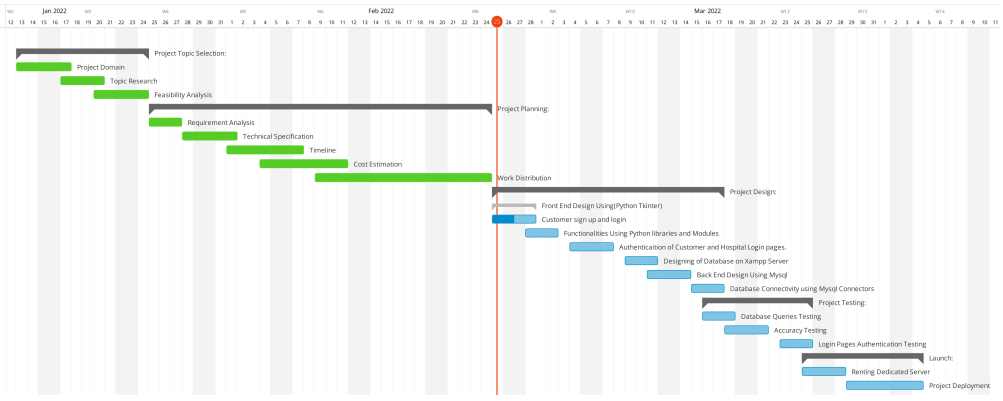

Figure 6.1: Gantt Chart for Planning

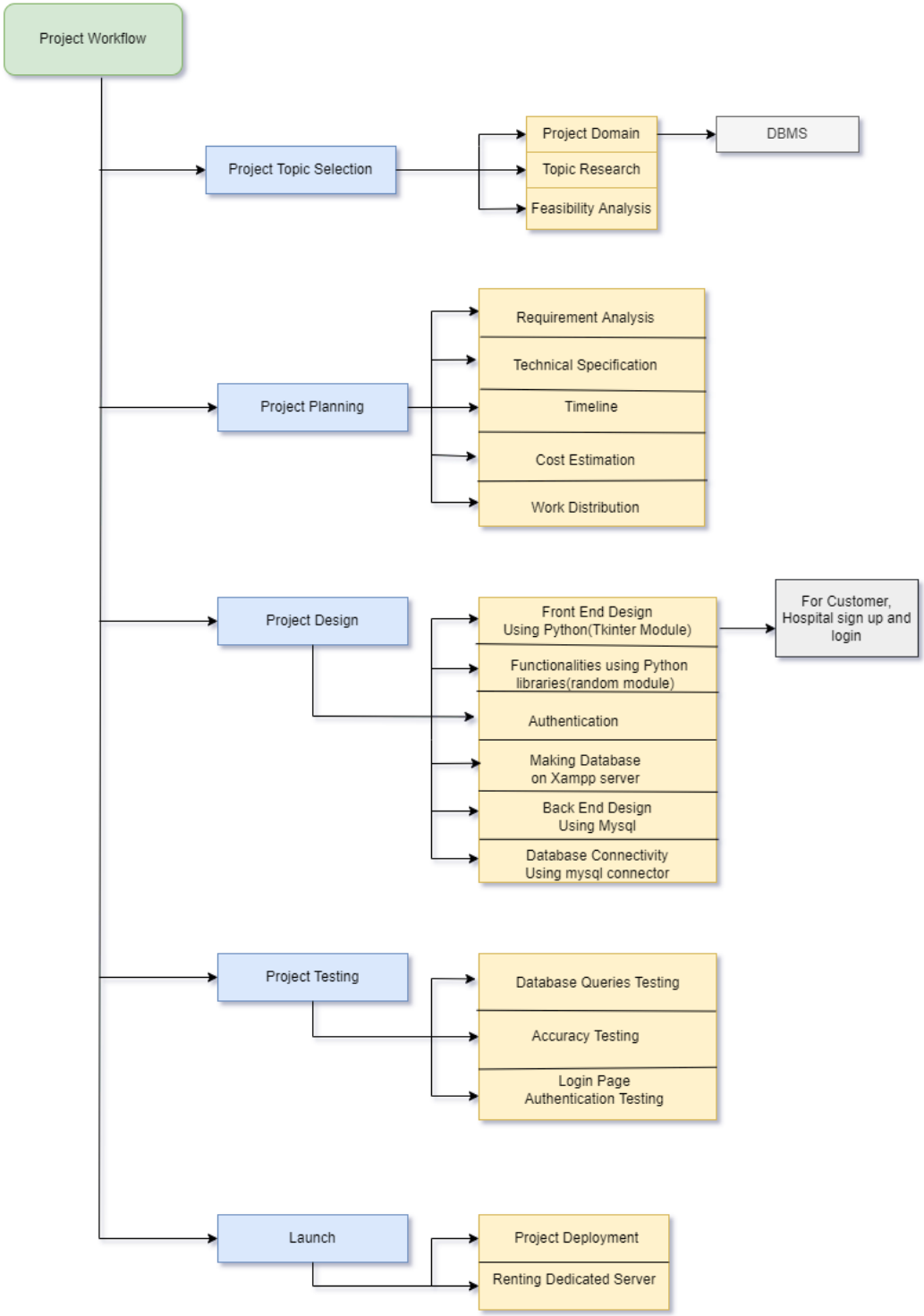

Figure 6.2: Workflow Graph

Pharmacy Management System

Read-only view, generated on 25 Feb 2022

	ACTIVITIES	ASSIGNEE	EH	EC	START	DUE	%
	Project Workflow:		-	-			0%
	Project Topic Selection:		6h	$72,00	13/Jan	24/Jan	100%
2	Project Domain	Vishal Sharma	2h	$24,00	13/Jan	17/Jan	100%
3	Topic Research	Vishal Sharma	2h	$24,00	17/Jan	20/Jan	100%
4	Feasibility Analysis	Sankalp Mahes...	2h	$24,00	20/Jan	24/Jan	100%
	Project Planning:		26h	$312,00	25/Jan	24/Feb	100%
6	Requirement Analysis	Sankalp Mahes...	2h	$24,00	25/Jan	27/Jan	100%
7	Technical Specification	Vishal Sharma	2h	$24,00	28/Jan	01/Feb	100%
8	Timeline	VS, SM	4h	$48,00	01/Feb	07/Feb	100%
9	Cost Estimation	SM, VS	10h	$120,00	04/Feb	11/Feb	100%
10	Work Distribution	SM, VS	8h	$96,00	09/Feb	24/Feb	100%
	Project Design:		18h	$216,00	25/Feb	17/Mar	13%
	Front End Design Using(Pyt...	Vishal Sharma	3h	$36,00	25/Feb	28/Feb	100%
13	Customer sign up and l...	Sankalp Mahes...	3h	$36,00	25/Feb	28/Feb	50%
14	Functionalities Using Python...	Vishal Sharma	4h	$48,00	28/Feb	02/Mar	0%
15	Authenticaition of Customer...	Vishal Sharma	3h	$36,00	04/Mar	07/Mar	0%
16	Designing of Database on X...	Sankalp Mahes...	3h	$36,00	09/Mar	11/Mar	0%
17	Back End Design Using Mysql	Sankalp Mahes...	3h	$36,00	11/Mar	14/Mar	0%
18	Database Connectivity usin...	Vishal Sharma	2h	$24,00	15/Mar	17/Mar	0%
	Project Testing:		14h	$168,00	16/Mar	25/Mar	0%
20	Database Queries Testing	Sankalp Mahes...	4h	$48,00	16/Mar	18/Mar	0%
21	Accuracy Testing	Vishal Sharma	4h	$48,00	18/Mar	21/Mar	0%
22	Login Pages Authentication ...	Vishal Sharma	6h	$72,00	23/Mar	25/Mar	0%
	Launch:		71h	$852,00	25/Mar	04/Apr	0%
24	Renting Dedicated Server	SM, VS	35h	$420,00	25/Mar	28/Mar	0%
25	Project Deployment	SM, VS	36h	$432,00	29/Mar	04/Apr	0%

Figure 6.3: Cost Estimation

Synopsis

1.1 Problem Statement

The world changes every-day and there are new medicines discovered. The main problem in a Pharmacy Management System is to keep it updated. Due to the constant advancement in the medical field of the world, it is very difficult to keep the pharmacy management system up-to-date and to keep a track of every medicine available. It is a very tedious job to keep the system proper and error free and to keep the pharmacy working in an efficient and in an orderly manner. Medicines cures diseases and illnesses and hence are very important to be updated every now and then. Expiration dates create an issue as well since the pharmacy needs to be careful while distributing medicines in large numbers.

1.2 Functional requirements of the system

The project, Pharmacy Management System, covers various functional requirements. Some of them being- log-in, sign-up, profile, etc.

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4.	Edit Profile	Edits the details if the users need to alter their details. All details except ID of the user can be deleted.
5.	Product Buttons	There are products that are segregated into 8 types and their buttons when clicked will display the items for that category that can be added in the cart. All items are displayed on the main page with a paging system with one page showing 4 items maximum.
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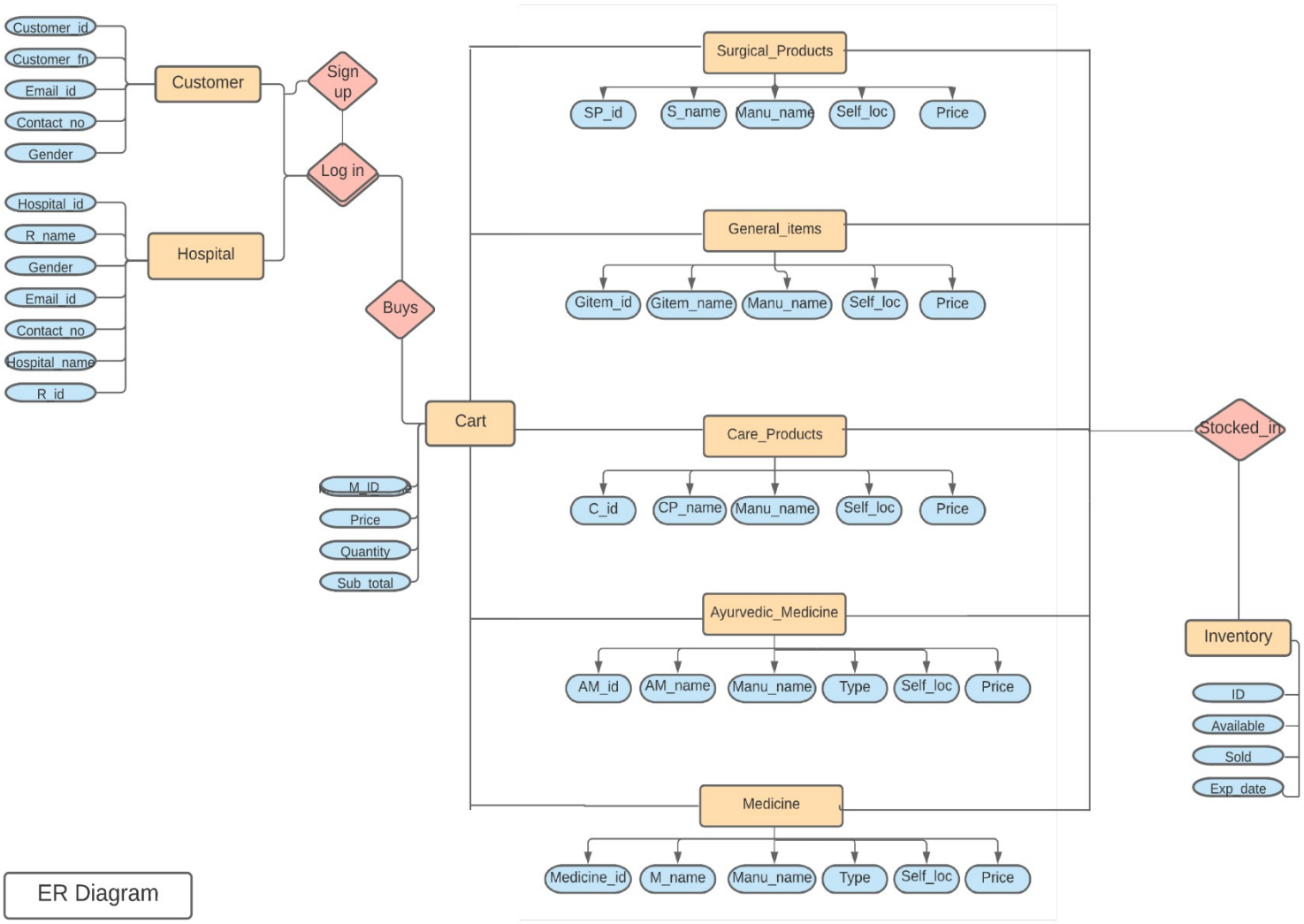
7.	Log-out/Exit	This function is used to finally exit the whole system. Once exited, the customer/hospital is automatically logged out as well.

2.1 ER Model



2.2 Reduction of ER model to Relational Model

- temp_cart (M_ID, Price, Quantity, Sub_total)
- ayurvedic_med (AM_id, AM_name, Man_name, Type, Self_loc, Price)
- care_products (C_id, CP_name, Manu_name, Self_loc, Price)
- customer (Customer_id, Customer_fn, Customer_ln, Email_id, Contact_no, Gender)
- general_items (GItem_id, GItem_name, Manu_name, Self_loc, Price)
- medicine (Medicine_id, Pres_no, M_name, Manu_name, Type, Self_loc, Price, Prescription)
- hospital (Hospital_id, Hospital_name, R_name, R_id, Email_id, Contact_no, Gender)
- inventory (ID, Available, Sold, Exp_date)
- surgical_products (SP_id, S_name, Man_name, Self_loca, Price)

Functional Dependencies: -

1) **Customer**
   (Customer_id)+ = {Customer_fn, Email_id, Contact_no, Gender}

2) **Hospital**
   (Hospital_id, R_id)+ = {Hospital_name, R_name, Gender, Email_id, Contact_no,}

3) **Medicine**
   (Medicine_id)+ = {M_name, Manu_name, Type, Self_loc, Price}

4) **Ayurvedic_Medicine**
   (AM_id)+ = {AM_name, Manu_name, Type, Self_loc, Price}

5) **Care_Products**
   (C_id)+ = {c_name, Manu_name, Self_loc, Price}

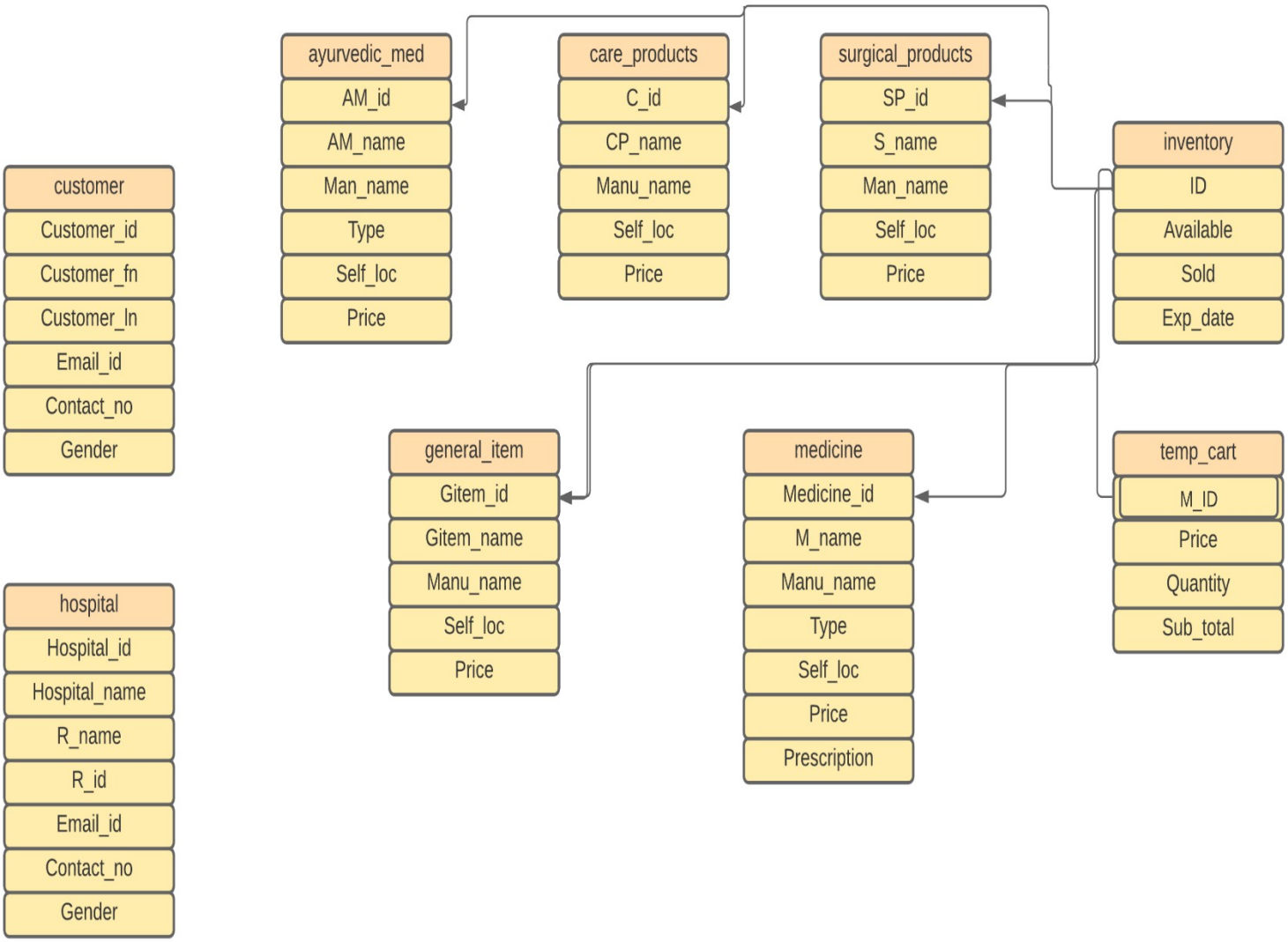
6) **General_items**
   (Gitem_id)+ = {Gitem_name, Manu_name, Self_loc, Price}

7) **Surgical_Products**
   (SP_id)+ = {s_name, Manu_name, Self_loc, Price}

8) **Cart**
   (M_ID)+ = {Price, Quantity, Sub_total}

9) **Ayurvedic_Medicine**
   (ID)+ = {Available, Sold, Exp_date}

2.3 Schema Diagram



Normalization techniques applied on relational model:

- A Relation Will be 1NF if it contains an atomic value. It should not contain repeating Groups.

In our case 1NF is not satisfied as there are excess null valued data.

- temp_cart (M_ID, Price, Quantity, Sub_total)
- ayurvedic_med (AM_id, AM_name, Man_name, Type, Self_loc, Price)
- care_products (C_id, CP_name, Manu_name, Self_loc, Price)
- customer (Customer_id, Customer_fn, Customer_ln, Email_id, Contact_no, Gender)
- general_items (GItem_id, GItem_name, Manu_name, Self_loc, Price)
- medicine (Medicine_id, Pres_no, M_name, Manu_name, Type, Self_loc, Price, Prescription)
- hospital (Hospital_id, Hospital_name, R_name, R_id, Email_id, Contact_no, Gender)
- inventory (C_id,Medicine_id,PM_id,SC_id,HH_id,Genral_id,SE_id, Available, Sold, Exp_date)
- surgical_products (SP_id, S_name, Man_name, Self_loca, Price)

Here in the inventory table , we have id of all categories and when id of one value in used to keep track of its stock , all other colums of id will have null value, therefore increasing useless data.

This is NF1 normalised by creating a single ID general in the inventory table for all products in the pharmacy. It reduces all the null values of the table.

- temp_cart (M_ID, Price, Quantity, Sub_total)

- ayurvedic_med (AM_id, AM_name, Man_name, Type, Self_loc, Price)
- care_products (C_id, CP_name, Manu_name, Self_loc, Price)
- customer (Customer_id, Customer_fn, Customer_ln, Email_id, Contact_no, Gender)
- general_items (GItem_id, GItem_name, Manu_name, Self_loc, Price)
- medicine (Medicine_id, Pres_no, M_name, Manu_name, Type, Self_loc, Price, Prescription)
- hospital (Hospital_id, Hospital_name, R_name, R_id, Email_id, Contact_no, Gender)
- inventory (ID, Available, Sold, Exp_date)
- surgical_products (SP_id, S_name, Man_name, Self_loca, Price)

- A Relation Will be 2NF Only if it is 1NF and and it is Fully Functional Dependent on the Primary Key.

-In our case each and every Attribute is Fully Functional Dependent on the

respective Primary Key. So, 2NF is Satisfied and hence, there will be no

Decomposition of the tables.

- A Relation will be in 3NF if it is in 2NF and no transitive dependency exists.

-In our case no transition dependency exists. So, 3NF is Satisfied. Hence,there will be no Decomposition of the tables.

- A Relation will be BCNF if it is in 3NF and For Each Functional Dependency ($X \rightarrow Y$),X is a Super Key.

-In our case BCNF is Satisfied. Hence there will be no Decomposition of the

tables further.

Therefore all tables after normalisation are :-

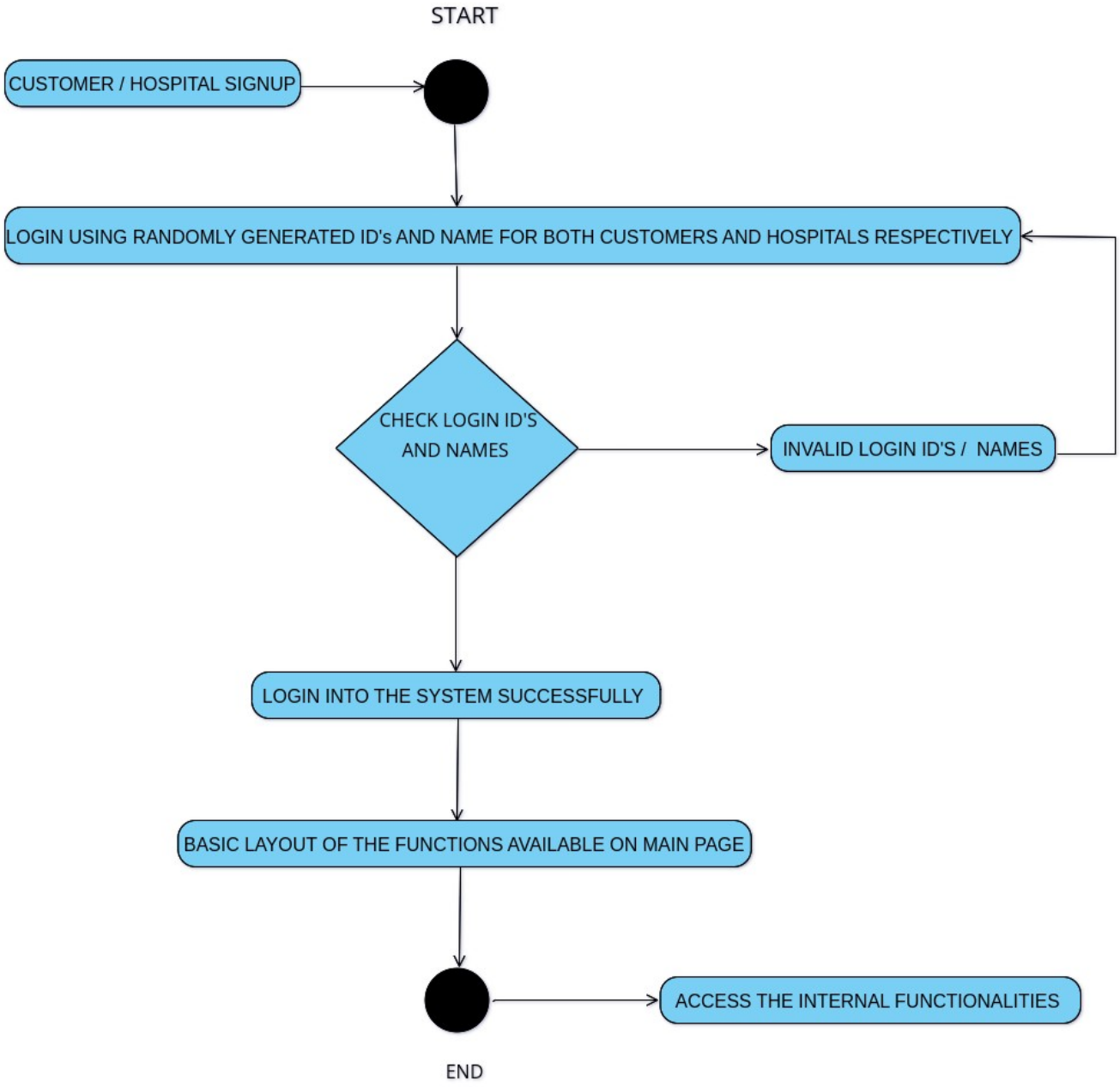
- temp_cart (M_ID, Price, Quantity, Sub_total)
- ayurvedic_med (AM_id, AM_name, Man_name, Type, Self_loc, Price)
- care_products (C_id, CP_name, Manu_name, Self_loc, Price)
- customer (Customer_id, Customer_fn, Customer_ln, Email_id, Contact_no, Gender)
- general_items (GItem_id, GItem_name, Manu_name, Self_loc, Price)
- medicine (Medicine_id, Pres_no, M_name, Manu_name, Type, Self_loc, Price, Prescription)
- hospital (Hospital_id, Hospital_name, R_name, R_id, Email_id, Contact_no, Gender)
- inventory (ID, Available, Sold, Exp_date)
- surgical_products (SP_id, S_name, Man_name, Self_loca, Price)

Software Requirements: Python 3.7+(libraries use- tkinter, mysql connector), Mysql Server

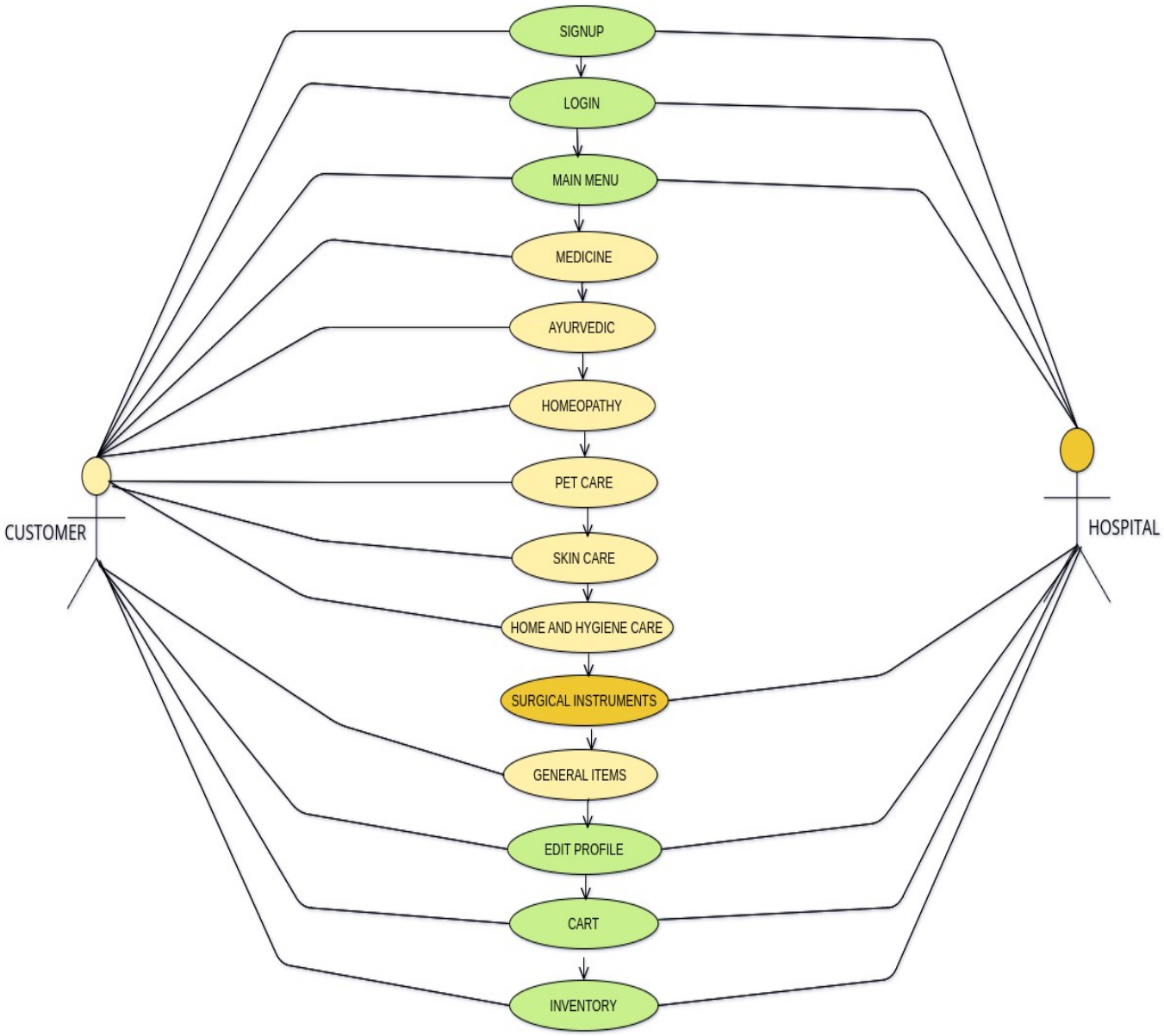
Hardware Requirements: 2.0 GHz processor, minimum 2048 MB RAM, 30 GB Storage

UML Diagrams

Activity-Diagram:

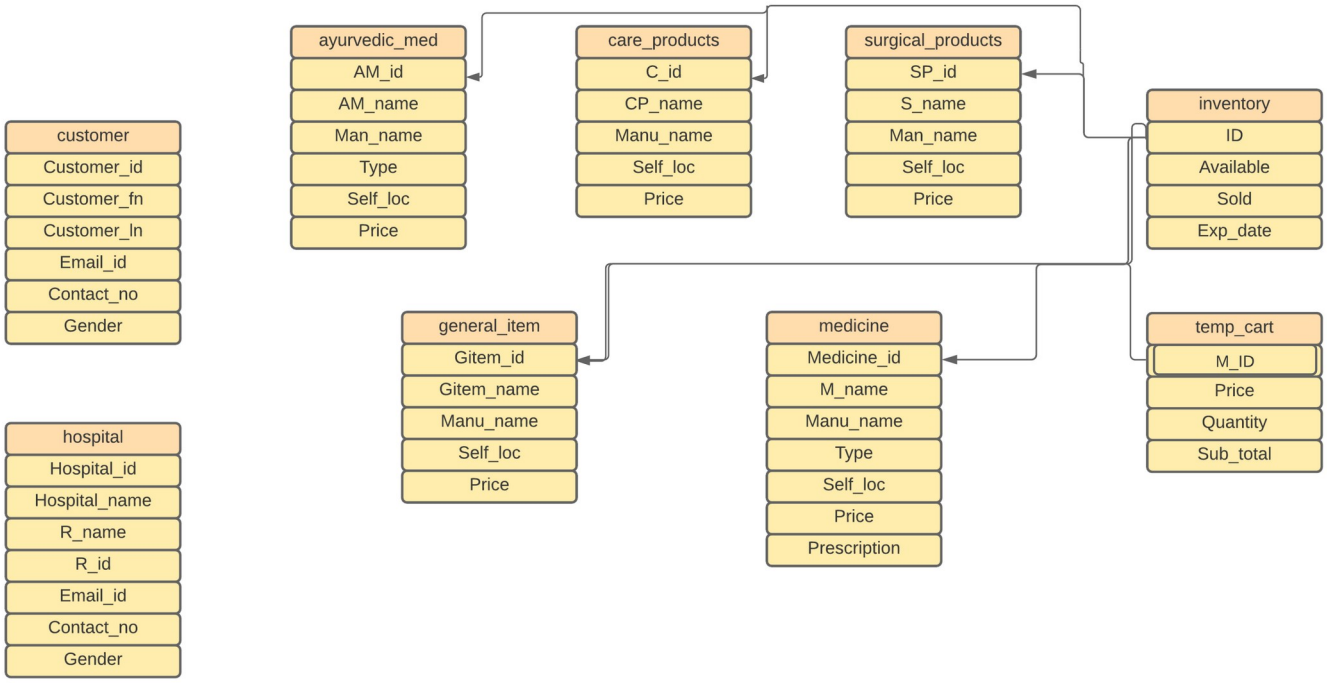


Use-Case Diagram:



Use Case Diagram

Class Diagram:



Advantages of our project over existing projects:

- The user interface is more accessible/ minimalistic.
- Wide range of medicines and surgical instruments.
- Keeps track of prescribed medicines and its expiry dates.

Disadvantages of our project over existing projects:

- We have not implemented a fully functional website.
- We are not letting user to create a password instead we are providing a randomly generated customer ID.
- Consumer data privacy maybe a problem in online pharmacy system.

CONCLUSION AND FUTURE SCOPE :

Final statements on the overall work done on the project and the future scope it has.

- To conclude, we would like to state that we successfully implemented the idea that we had for a pharmacy database working. It has been done on a smaller scale as compared to the real world applications and therefore it has a window of improvement where a larger database can be used.

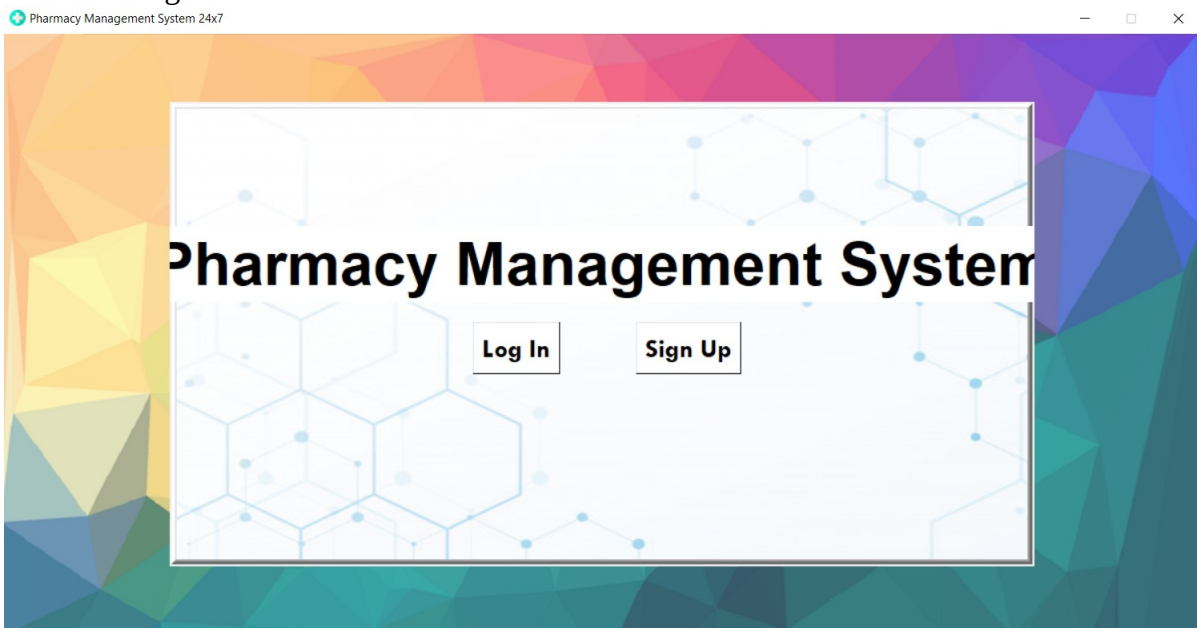
- Future improvements can be the addition of other categories of medication for example the addition of a special section for virus prevention products, physiotherapy products, dental products etc.

- The software works close to the real world and has an easy to understand UI for all types usage like pharmacies, hospitals, clinics etc.

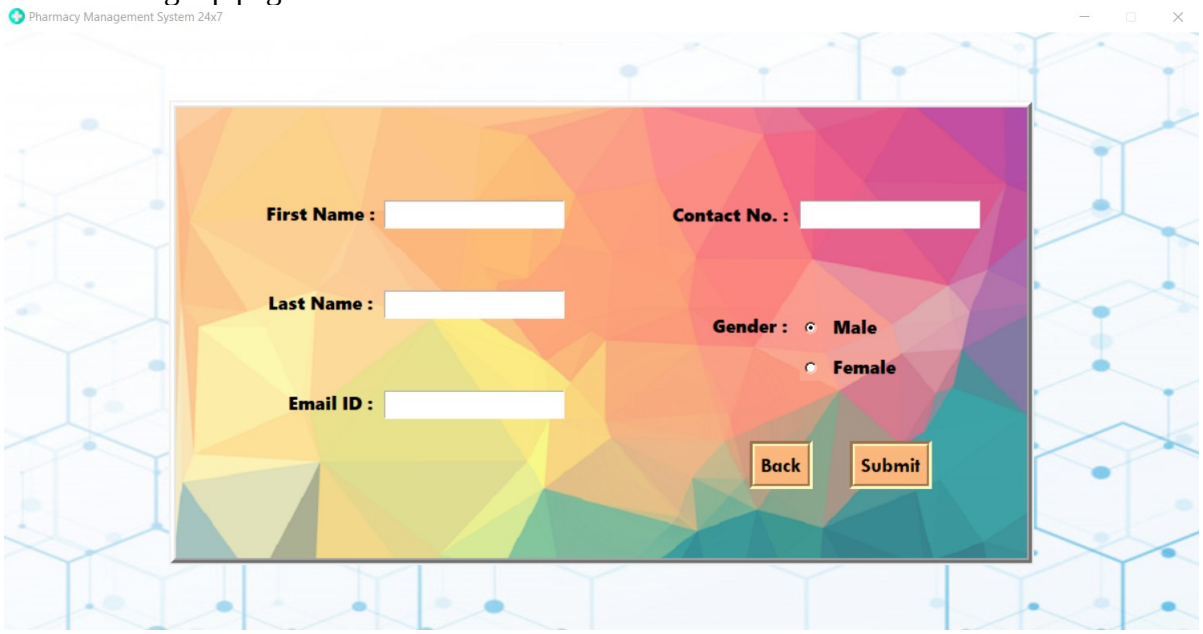
HELP MANUAL :

Pharmacy Management System

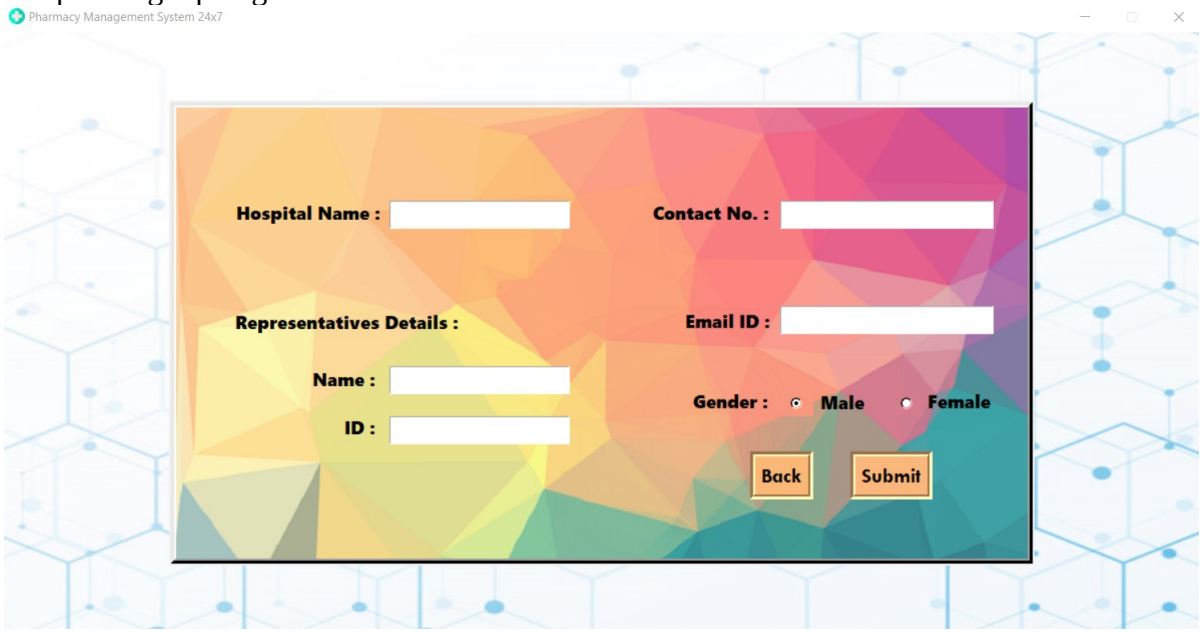
Welcome Page-



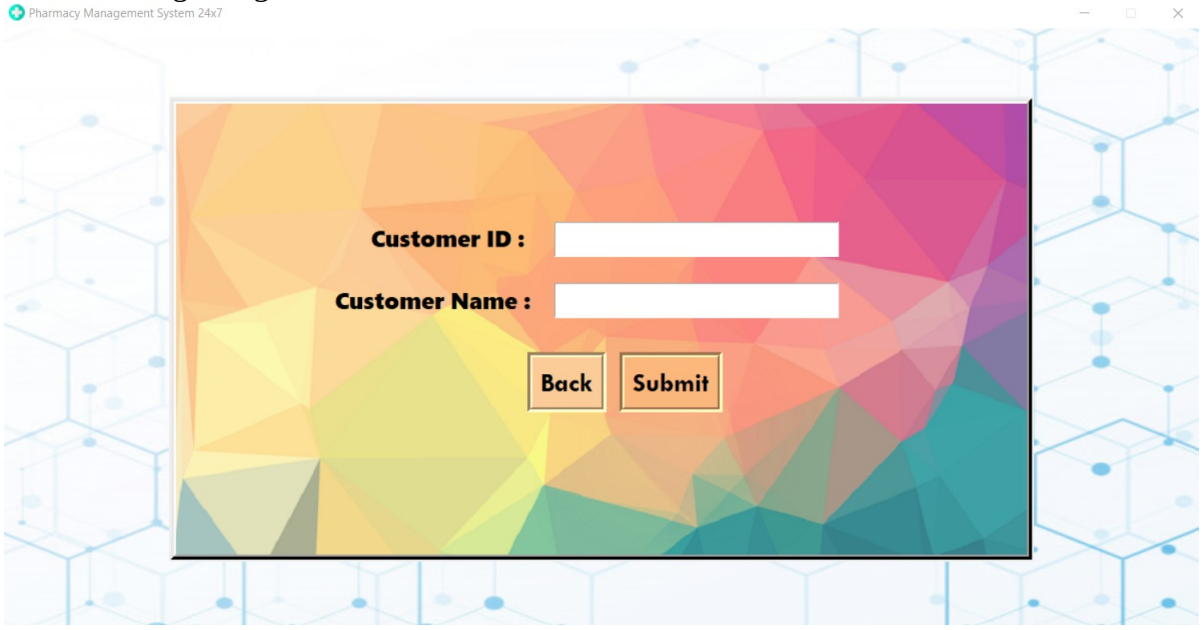
Customer Signup page-



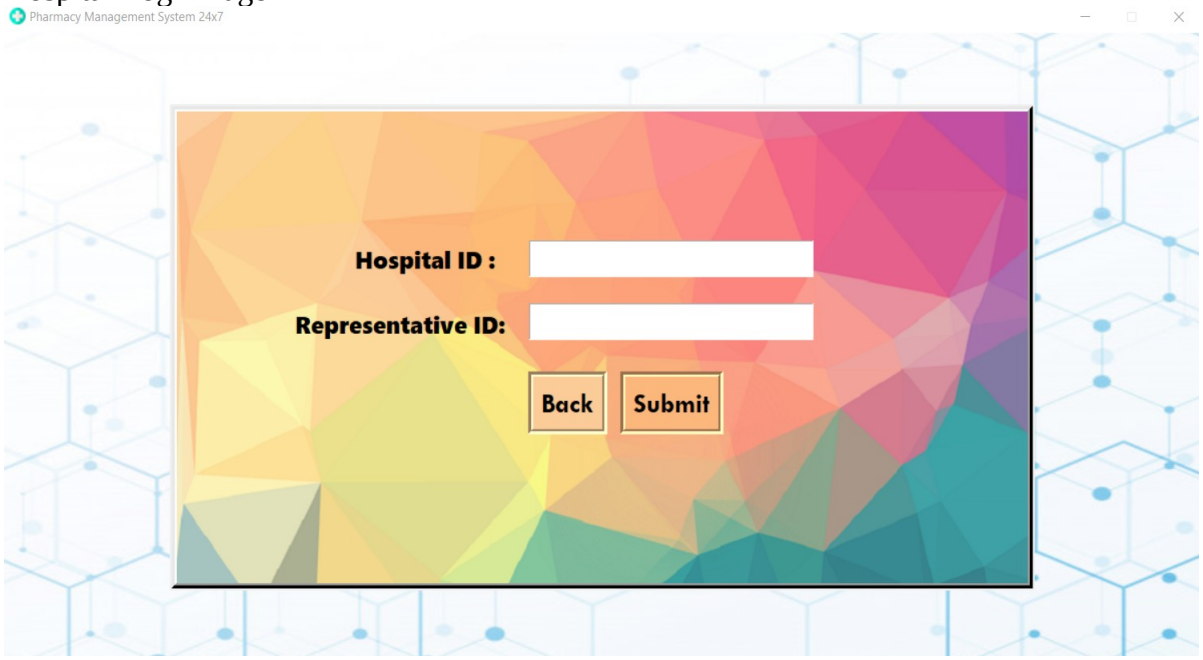
Hospital Signup Page-



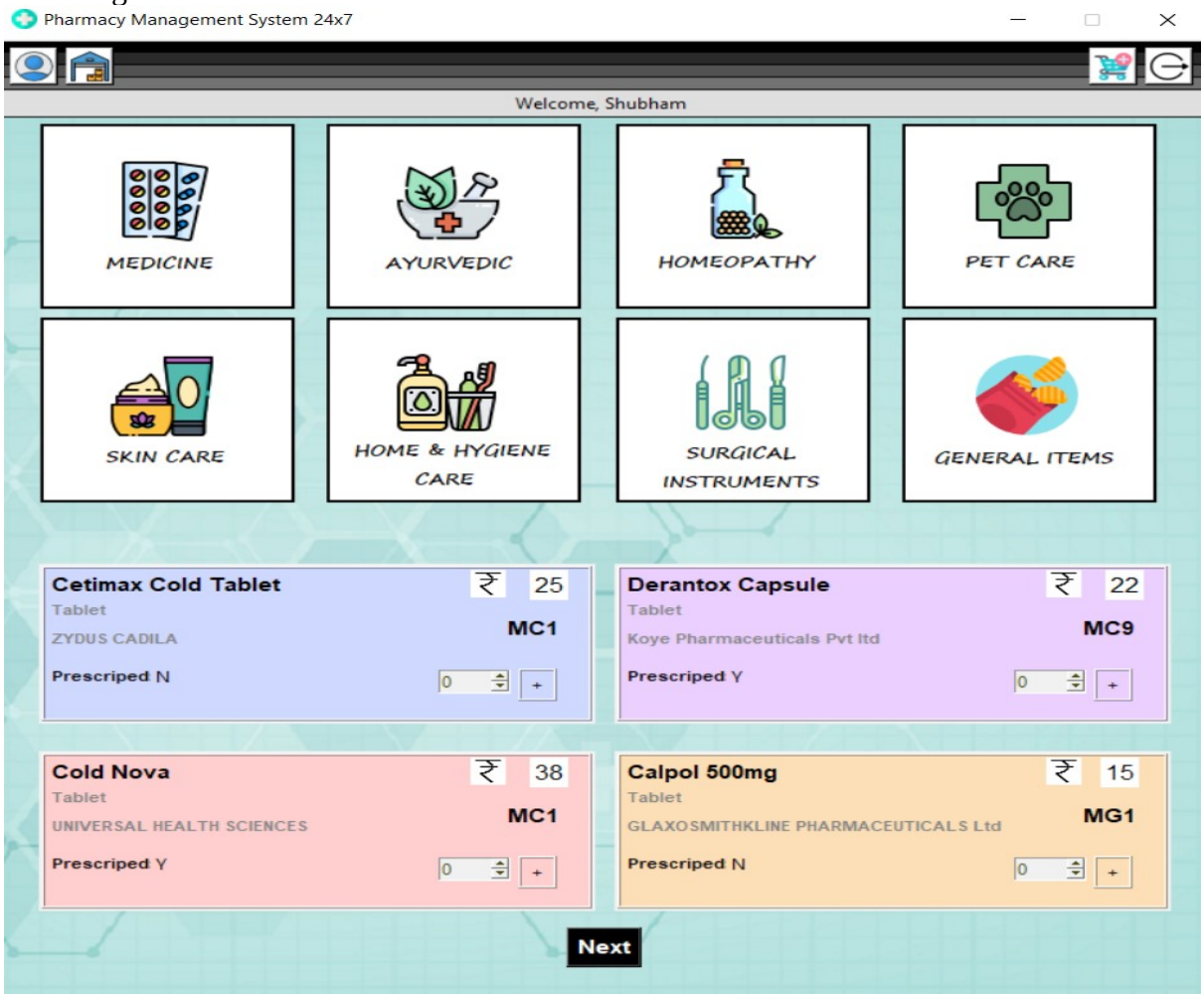
Customer Login Page-



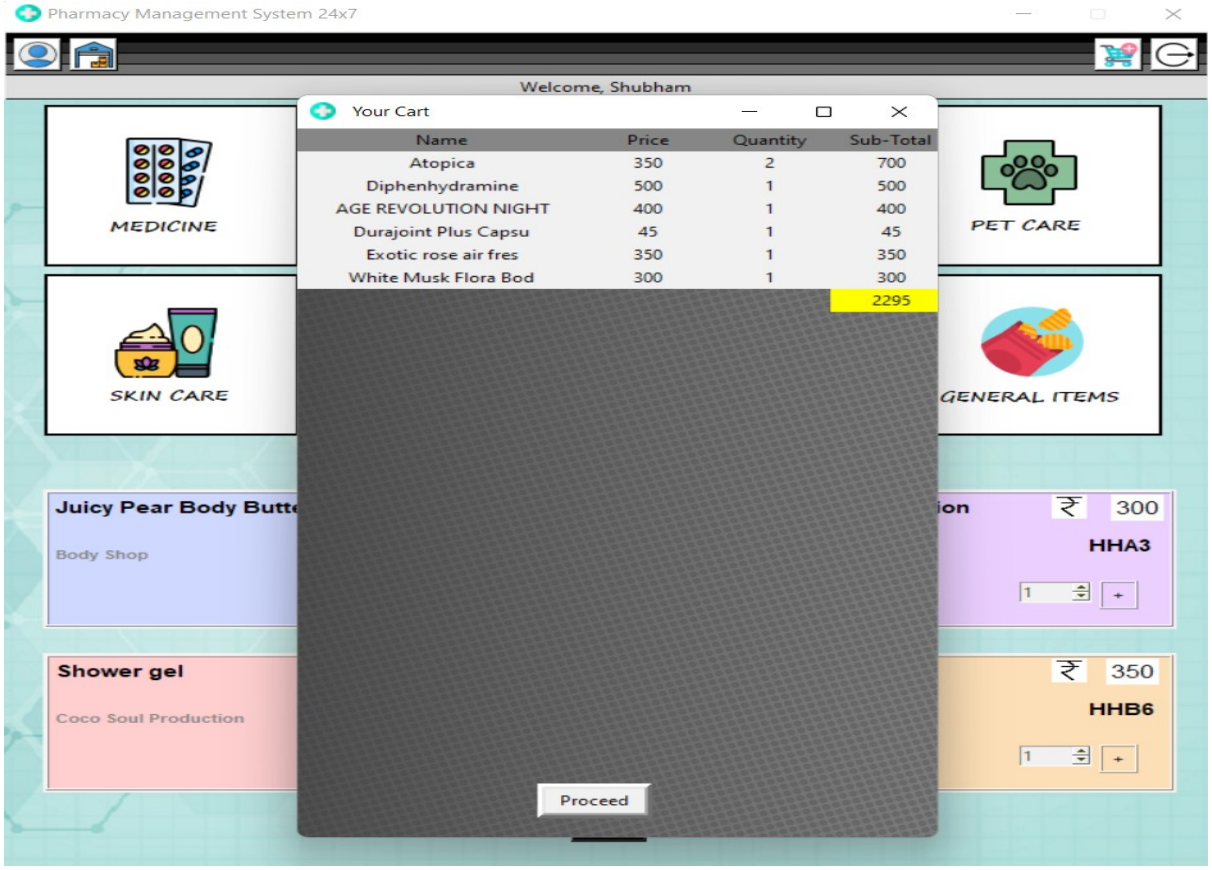
Hospital Login Page-



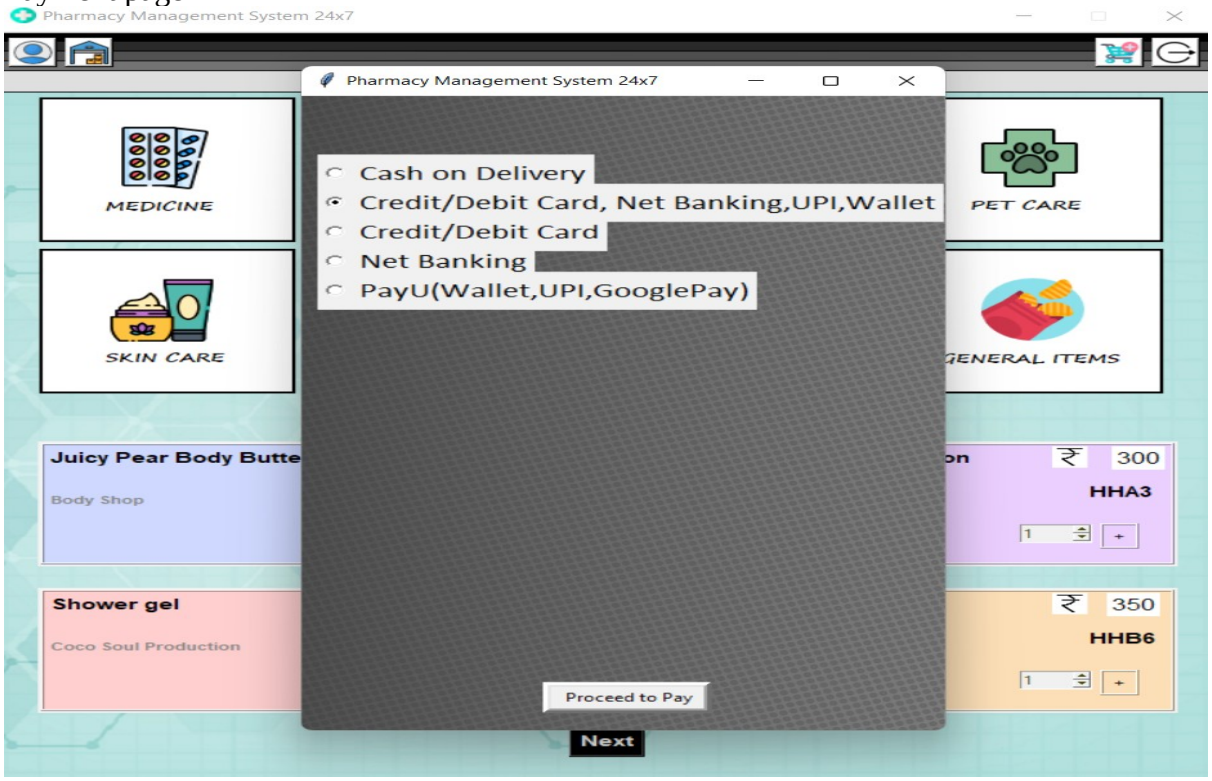
Main Page-



Cart-



Payment page-



Profile-

Stocks-