A
MINOR PROJECT REPORT

Submitted for the partial fulfillment of

BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING

Submitted by

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Under the Guidance
of
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ACKNOWLEDGEMENT

I would like to place on record my deep sense of gratitude to Prof. HIMANSHU MITTAL and VARTIKA SRIVASTAVA, faculty ,Jaypee Institute of Information Technology, India for their generous guidance, help and useful suggestions.

I also wish to extend my thanks to my classmates for their insightful comments and constructive suggestions to improve the quality of this project work.

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ABSTRACT

The project **'MEDICAL SOLUTIONS'** is an initiative to help pharmacists have their business under one common entity. The product aims to have all the features operational in a drug store(or any general store of that kind) under one roof so that any end user is able to simplify his business needs and at the same time keep a record for his/her frequented customers.

At the same moment of time,the pharmacist can add customers to his database and provide them with userid's and auto-generated passwords through which the customers of that particular pharmacist can avail their specified services.

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ABBREVATIONS

1. OS: Operating System
2. Admin: Administrator

   He has the authority to add/delete users, add/update/delete vendors, add/update/delete inventory
3. GB: Gigabytes
4. RAM: Random Access Memory
5. RAT: Rationale
6. DEP: Dependency
7. DESC: Description

Chapter 1: INTRODUCTION

MEDICAL SOLUTIONS is a web application which provides online medical services to everyone at their doorstep. The System consists of two parts-Admin login and Customer login.

When the admin logs in, he/she is redirected to the admin window wherein are various aspects of a pharmaceutical shop. The pharmacist (admin) can add different vendors, add items to his stock, and generate bills for his /her customers based on the customer user-id.

When the customer logs in, he/she would be redirected to a different window wherein the various functionalities are for a customer .The customer would be able to view the bills, the purchased medicines, nearby chemist shops, etc.

Since this is a data-centric product it will need somewhere to store the data. For that, a database will be used. All of the database communication will go over the Internet.

Chapter 2: BACKGROUND STUDY

Every now and then, we all happen to go to a pharmacist. There is a huge stock of drugs/medicines and other products available at the shop. The products are of different brands, are supplied by different vendors to that particular pharmacist. It becomes tedious for the pharmacist to keep a record of the products he purchases from various vendors Also, there are so many customers a pharmacist has to entertain. It is not possible for him/her to remember the medicines being given to each and every patient frequently.

So here arises a problem. There needs to be a common framework wherein the pharmacist can keep all his records and thus reduce the tediousness of his work.

Also, there needs to be a portal for the customers where they can access their account details such as the details of the medicines bought and nearby chemists, etc.

So, Medical Solutions is a step forward in this direction. The project aims to overcome this issue and provide the pharmacist and customers with a product satisfying the above mentioned issues.

Chapter 3: Requirement analysis

3.1 Hardware & Software Requirements:

Minimum hardware and software components required to develop the software are as mentioned below:

Components	Minimum Requirements	Recommended Requirements
Processor	PC with a 450MHz or faster processor (Intel Pentium IV or greater)	PC with 800MHz or faster processor
RAM	512MB	2GB or more
Operating System	2000/XP/7 or higher	Windows XP/7 or higher
Internet Connection Speed	128kbps (narrowband)	500kbps (broadband, such as: DSL, cable modem, T1 or faster)
Video Card	16-bit (high-color) or greater	24-bit (true-color) or greater
Screen Resolution	800x600	1024x768 or greater
Adobe Flash	Flash 10.1	Latest version
Web Browser	Any Browser	Internet Explorer(9 and above),Google Chrome,Firefox,Safari

3.1.1 Software

This software require minimum amount of software application that are required to run this website .Some of this application are :-

- **Geo tagging**

  This application is needed to set the map application active and page on the website active .So that customer and medical shop can see near by places and the ways of there need.

- **Browser application**

  We need the appropriate browser window to store the cookies data so that sessions and time interval can be managed in the appropriate way.

3.1.2 Hardware

Similar to the software we need a minimal amount of hardware system to run this website successfully.

- **Network Connection**

  We need a strong, redundant and safe network connection as this website run on web server which need a regular connection with the host server.

- **Hardware Unit**

  We need a hardware unit to run this website as we need a system with a compatible OS to run the website at the admin and the customer side.

- **Secure System**

  We need a secure system to run this website at admin or store level as we are maintaining the sessions in the website which will make you login until you log out at the definite time.

3.2 Functional Requirement

Various functionalities of this web application are defined under different modules. These are as follows:

3.2.1 Admin

- **Medicine management module**

  Function in this module is adding, delete and update medicine from the list and class of the medicine.

- **Selling process module**

  Record the medicines that sell to the customer. Give the quantity of the type of medicine that more frequently buy by the customer.

- **User authentication module**

  The authentications are dividing to two conditions, customer authentication and administrator authentication. Administrator can view all the process includes, selling transaction, reports, medicine stock and manipulate list of medicine. The customer can only display the list of pharmacy and the map of pharmacy and the medicines bought and bills generated.

- **Statistic of medicine sale module**

  Display the statistic for medicine selling in a grid view and showing the net sales and profits earned.

- **Add User Module**

  When the admin adds the new user, a sms would be sent to the phone number specified by the customer showing his/her userid and auto-generated password.

- **Invoice Module**

  On the arrival of the customer, the pharmacist would generate bills for the customer selecting various medicines as prescribed in the prescription. He shall be able to print it as well as save it at his end in .pdf format

3.2.2 Customer

- **Invoice show module**

  The logged in customer can see his/her invoice generated in the past and can print it.

- **See nearby chemists**

  The customer can see the nearby chemists through maps. Blue markers show the saved locations while red markers show the unsaved locations.

- **Search for medicine**

  The customer, on selecting a particular medicine can see the list of chemists having that medicine in their stock.

3.3 Non- Functional Requirement

- **Performance Requirements**

  The software is web-based and run from a web server. Initial load time depends on the media from which the product is run. Once the product is loaded, it runs completely within the computer's memory.

- **Safety and Security Requirements**

❖ System-Server Security

SUMMARY: Security of the communication between the system and server.

SCALE: The messages should be encrypted for log-in communications, so others cannot get user-name and password from those messages.

METER: Attempts to get user-name and password through obtained messages on 1000 log-in session during testing.

MUST: 100% of the Communication Messages in the communication of a log-in session should be encrypted.

COMMUNICATION MESSAGE: Defined: Every exchanged of information between client and server.

❖ Admin Account Security

SUMMARY: Security of accounts.

SCALE: If an admin tries to log in to the web portal with a non-existing account then the admin should not be logged in. The admin should be notified about log-in failure.

METER: 1000 attempts to log-in with a non-existing user account during testing.

MUST: 100% of the time

❖ Software Quality Attributes

The requirements in this section specify the required availability and maintainability of the software system.

❖ Availability

SUMMARY: The availability of the system when it is used.

SCALE: The average system availability (not considering network failing).

METER: Measurements obtained from 1000 hours of usage during testing.

MUST: More than 98% of the time.

PLAN: More than 99% of the time.

WISH: 100% of the time.

❖ Internet Connection

DESC: The application should be connected to the Internet.

RAT: In order for the application to communicate with the database.

DEP: none

❖ Maintainability

TITLE: Application extendibility

DESC: The application should be easy to extend. The code should be written in a way that it favors implementation of new functions.

RAT: In order for future functions to be implemented easily to the application.

DEP: none

❖ Portability

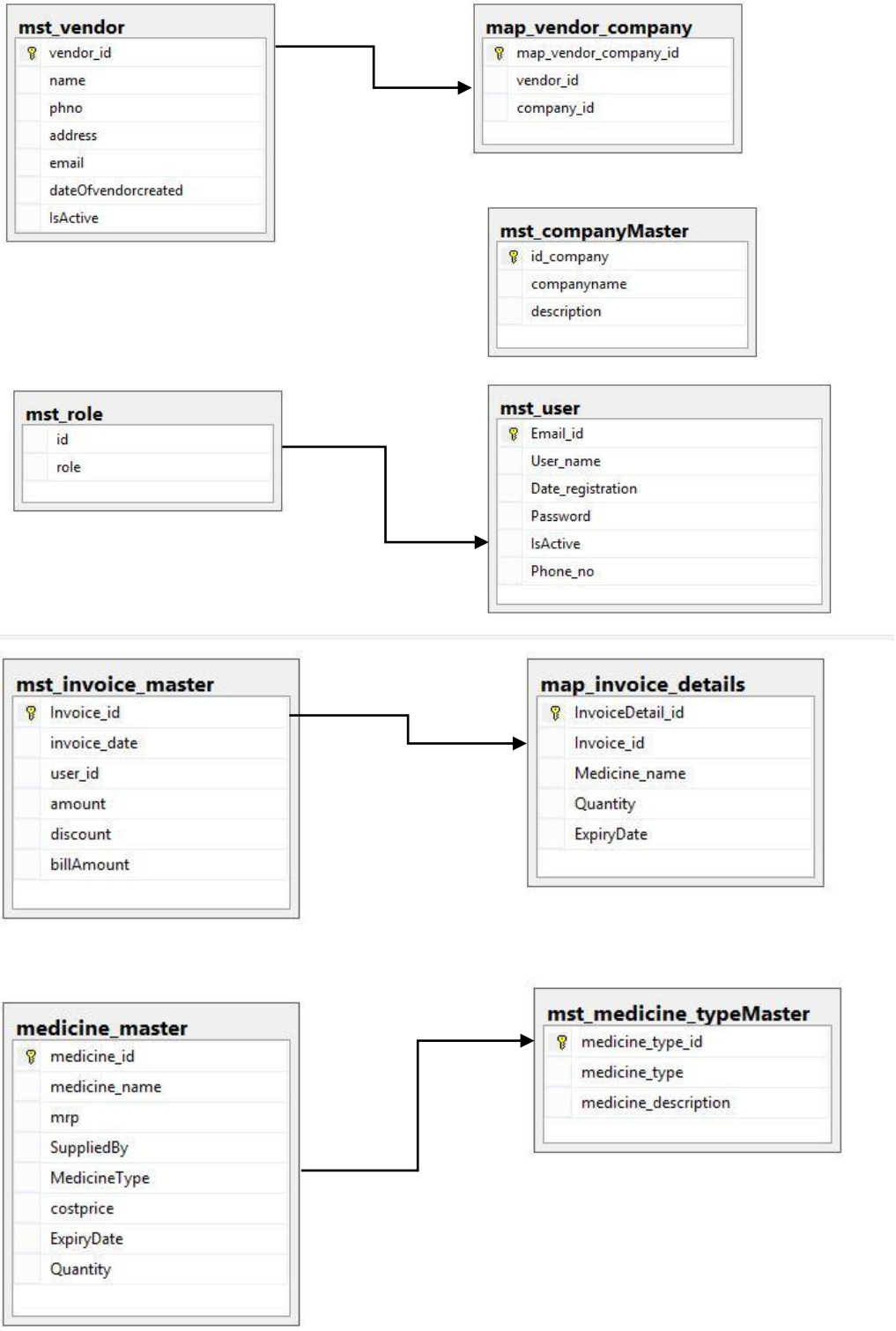
TITLE: Application portability

DESC: The application should be portable with any operating system

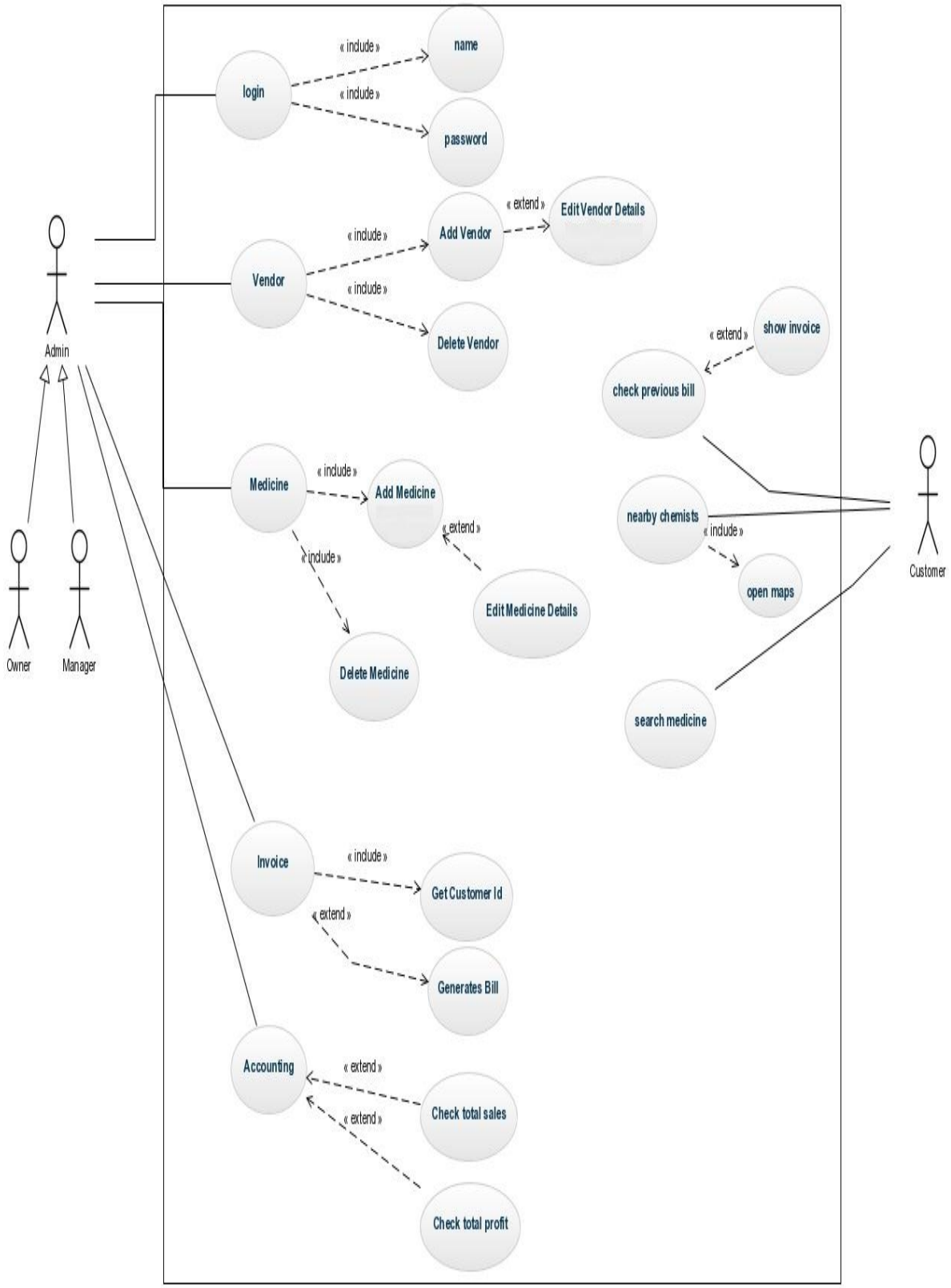
RAT: The adaptable platform for the application to run on.

3.4 UML Diagram

3.4.1 E R Diagram

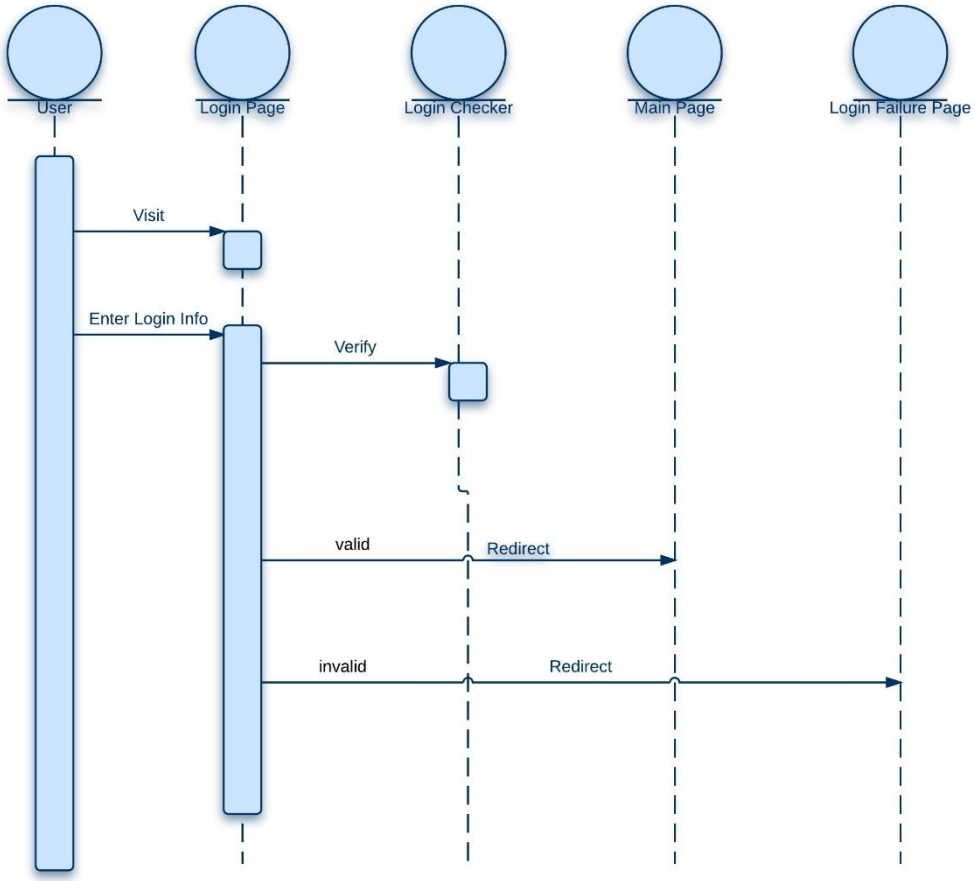


3.4.2 Use Case Diagram

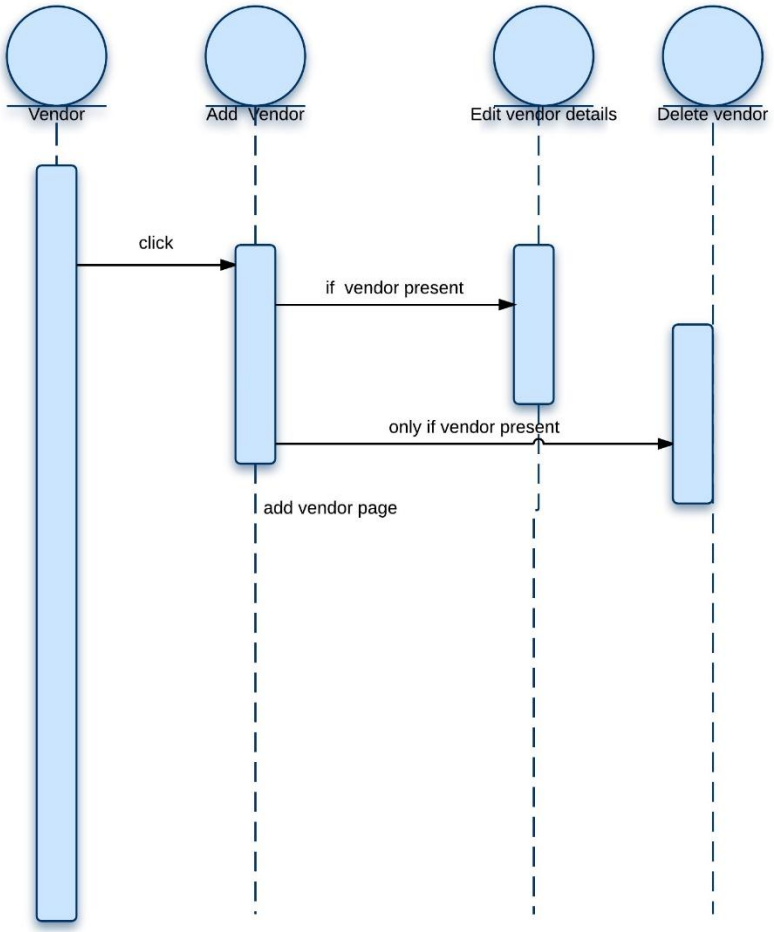


3.4.3 Sequence diagram

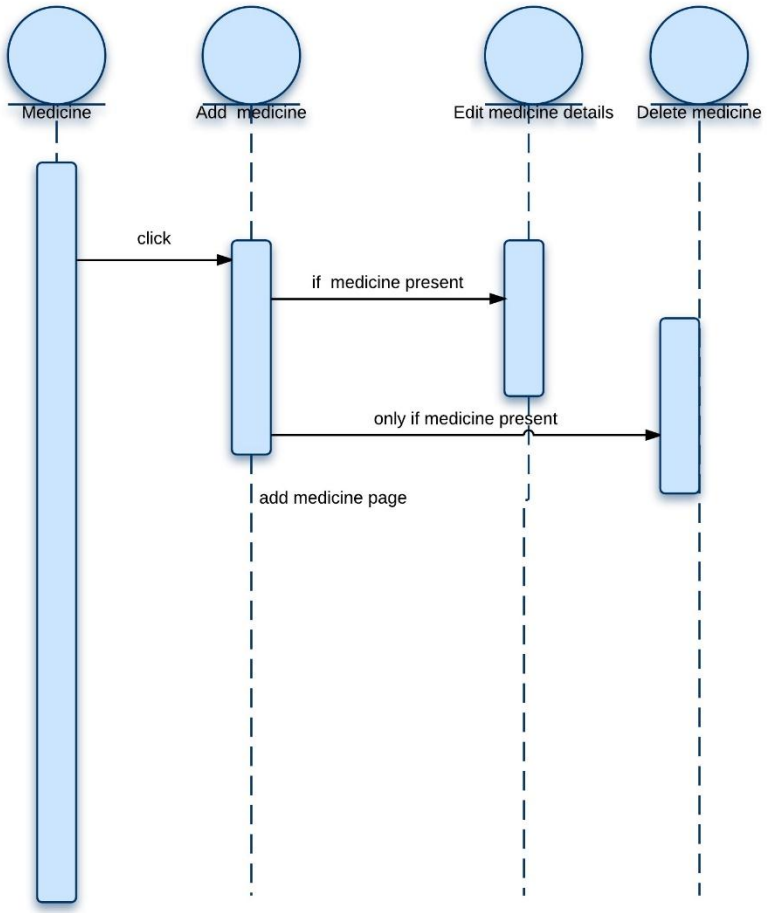
3.4.3.1 Login module



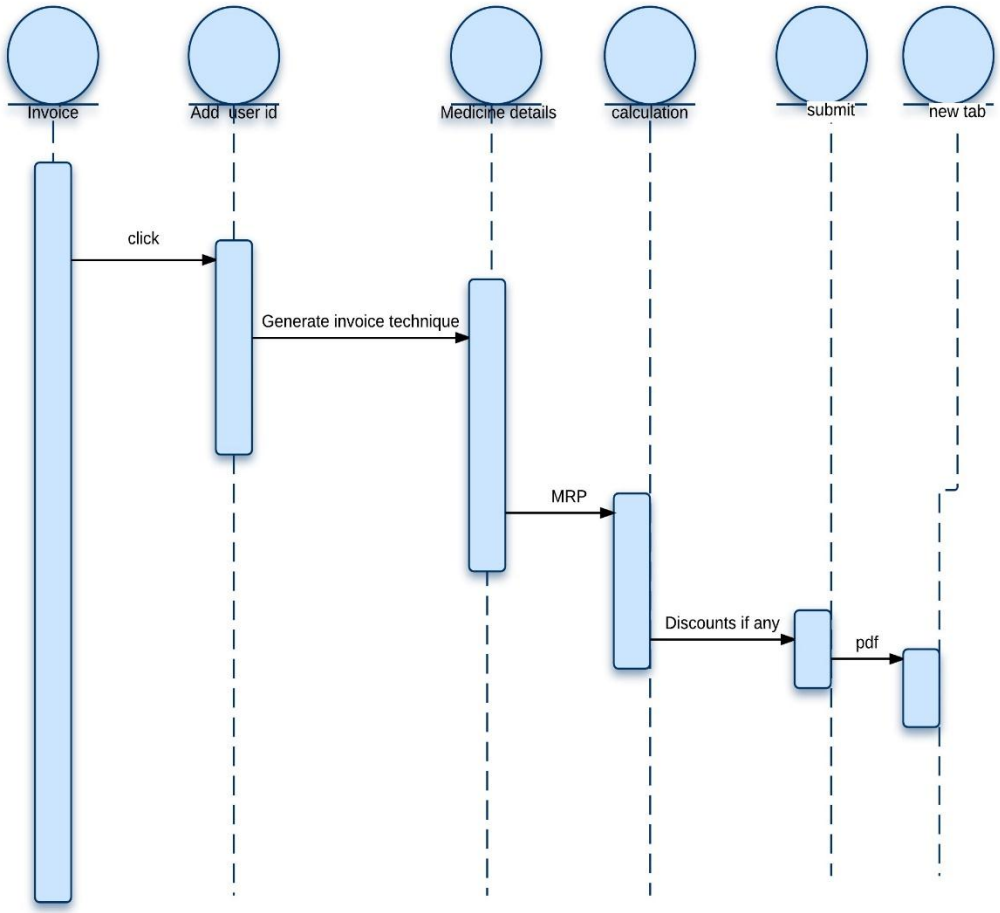
3.4.3.2 Vendor module



3.4.3.3 Medicine Module



3.4.3.4 Invoice Module



Chapter 4: Detailed Design

4.1 Database Design

dbo.mst_vendor

FieldName	Data Type	Description
Vendor_id	varchar(150)	primary key, not null
Name	varchar(50)	
Phno	varchar(50)	
Address	varchar(500)	
Email	varchar(50)	
Dateofvendorcreated	Datetime	
IsActive	Int	

Table 1

dbo.map_vendor_company

FieldName	Data Type	Description
Map_vendor_company_id	varchar(150)	primary key, not null
Vendor_id	varchar(50)	
Company_id	varchar(50)	

Table 2

dbo.medicine_master

FieldName	Data Type	Description
Medicine_id	varchar(150)	primary key, not null
Medicine_name	varchar(50)	
Mrp	decimal(18,2)	
Supplied by	varchar(150)	
Medicine type	Int	
Cost price	decimal(18,2)	

Table 3

dbo.mst_companyMaster

FieldName	Data Type	Description
Id_company	Int	primary key, not null
Companyname	varchar(150)	
Description	varchar(150)	

Table 4

dbo.mst_medicine_typeMaster

FieldName	Data Type	Description
Medicine_type_id	Int	primary key, not null
Medicine_type	varchar(50)	
Medicine_description	varchar(150)	

Table 5

dbo.mst_user

FieldName	Data Type	Description
Email_id	varchar(150)	primary key, not null
User_ name	varchar(50)	
Date_registration	Datetime	
Password	varchar(50)	
IsActive	Int	
Phno	varchar(50)	

Table 6

dbo.mst_invoice_master

FieldName	Data Type	Description
Invoice_id	varchar(50)	primary key, not null
Invoice_date	Datetime	
User_id	varchar(50)	
Amount	Decimal(18,2)	
Discount	Decimal(18,2)	
Billamount	Decimal(18,2)	

Table 7

dbo.map_invoice_details

FieldName	Data Type	Description
InvoiceDetail_id	Int	primary key, not null
Invoice_id	varchar(50)	
Medicine_name	varchar(50)	
Quantity	varchar(50)	
ExpiryDate	Datetime	

Table 8

4.2 Architectural Design

4.2.1 Model View Controller (MVC) architecture

Design

As we discussed in the previous section, a design pattern describes a proven solution to a recurring design problem, placing particular emphasis on the context and forces surrounding the problem, and the consequences and impact of the solution. There are many good reasons to use design patterns:

1. They are proven: You tap the experience, knowledge and insights of developers who have used these patterns successfully in their own work.

2. They are reusable: When a problem recurs, you don't have to invent a new solution

3. They are expressive: Design patterns provide a common vocabulary of solutions, which you can use to express larger solutions succinctly.

It is important to remember, however, that design patterns do not guarantee success. You can only determine whether a pattern is applicable by carefully reading its description, and only after you've applied it in your own work can you determine whether it has helped. One of these patterns is Model-View-Controller (MVC). The programming language Smalltalk first defined the MVC concept it in the 1970's.Since that time ,the MVC design idiom has become common place, especially in object oriented systems.

ARCHITECTURE

As we discussed in the previous section, it is common to think of an application as having three Main layers: presentation (UI), application logic, and resource management. In MVC, the presentation layer is split into controller and view. The most important separation is between presentation and application logic. The View/Controller split is less so. MVC encompasses more of the architecture of an application than is typical for a design pattern. Hence the term architectural pattern may be useful, or perhaps an aggregate design pattern.

1) Model: The domain-specific representation of the information on which the application operates. The model is another name for the application logic layer (sometimes also called the domain layer). Application (or domain) logic adds meaning to raw data (e.g., calculating if to- day is the user's birthday, or the totals, taxes and shipping charges for shopping cart items). Many applications use a persistent storage mechanism (such as a database) to store data. MVC does not specially mention the resource management layer because it is understood to be underneath or encapsulated by the Model.

2) View: Renders the model into a form suitable for interaction, typically a user interface element. MVC is often seen in web applications, where the view is the HTML page and the code which gathers dynamic data for the page.

3) Controller: Processes and responds to events, typically user actions, and may invoke changes on the model and view.

Though MVC comes in different flavours, the control flow generally works as follows:

1. The user interacts with the user interface in some way (e.g., user presses a button)

2. A controller handles the input event from the user interface, often via a registered handler or call back.

3. The controller accesses the model, possibly updating it in a way appropriate to the user's action (e.g., controller updates user's shopping cart). Complex controllers are often structured using the command pattern to encapsulate actions and simplify extension.

4. A view uses the model to generate an appropriate user interface (e.g., view produces a screen listing the shopping cart contents). The view gets its own data from the model. The model has no direct knowledge of the view. (However, the observer pattern can be used to allow the model to indirectly notify interested parties, potentially including views, of a change.)

5. The user interface waits for further user interactions, which begins the cycle anew.

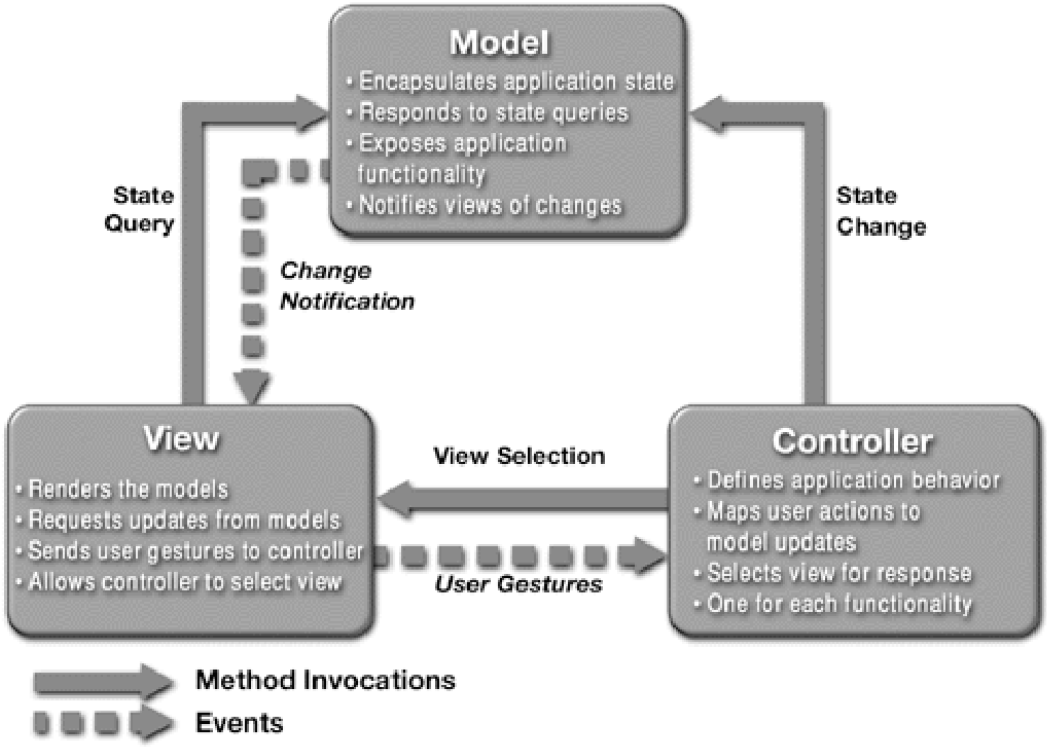


Fig above summarises the relationship between the Model, View, and Controller is provided below. Note: the solid lines indicate a direct association, and the dashed line indicate an indirect association (e.g., observer pattern).

4.2.2 Microsoft SQL Server

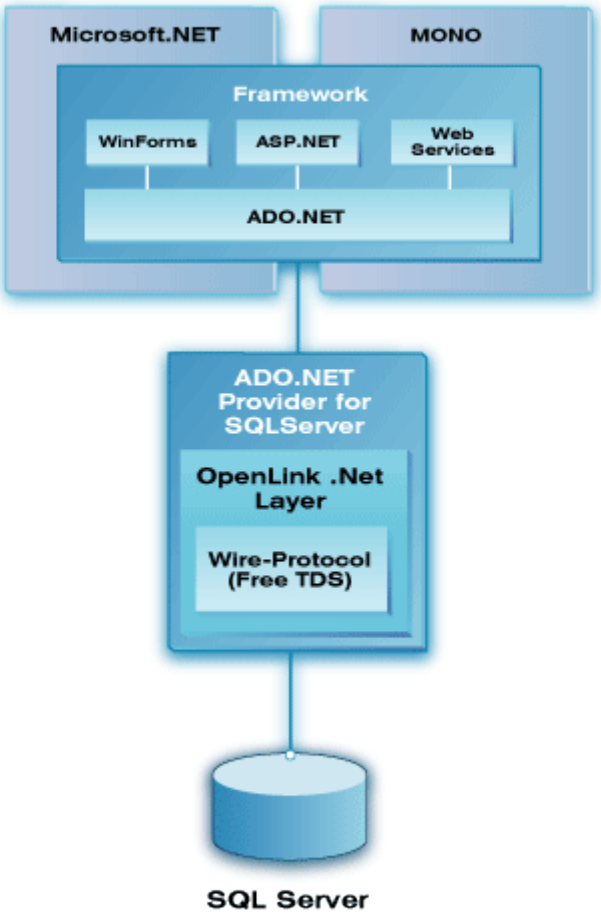
DESIGN

Microsoft SQL Server is a relational database management system (RDBMS). Its primary query Language is Transact-SQL, an implementation of the ANSI/ISO standard Structured Query Language (SQL) used by Microsoft and Sybase.

ARCHITECTURE

The architecture of Microsoft SQL Server is broadly divided into three components: SQLOS that implements the basic services required by SQL Server, including thread scheduling, memory management and I/O management; the Relational Engine, which implements the relational Database components

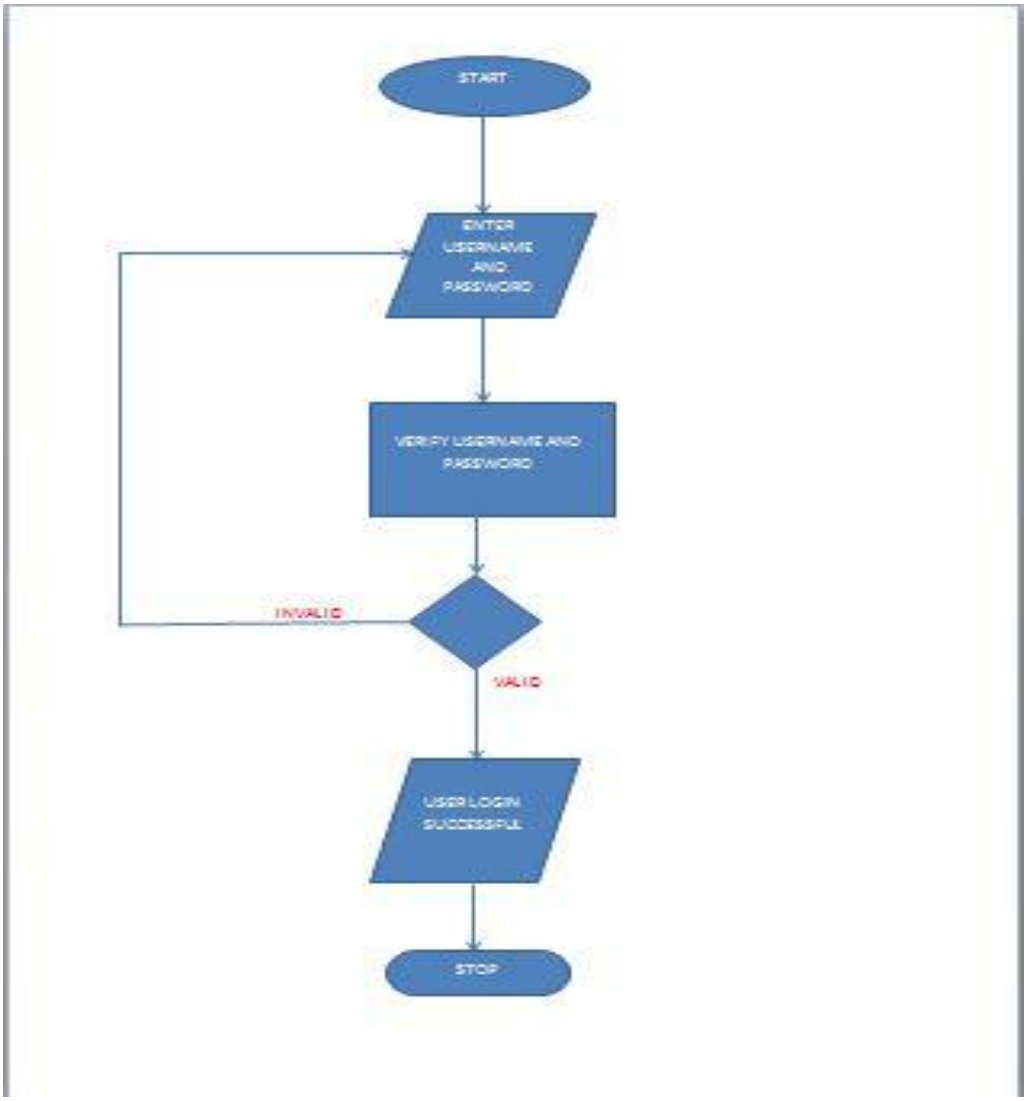
including support for databases, tables, queries and stored procedures as well as implementing the type system; and the Protocol Layer that exposes the SQL Server functionality.



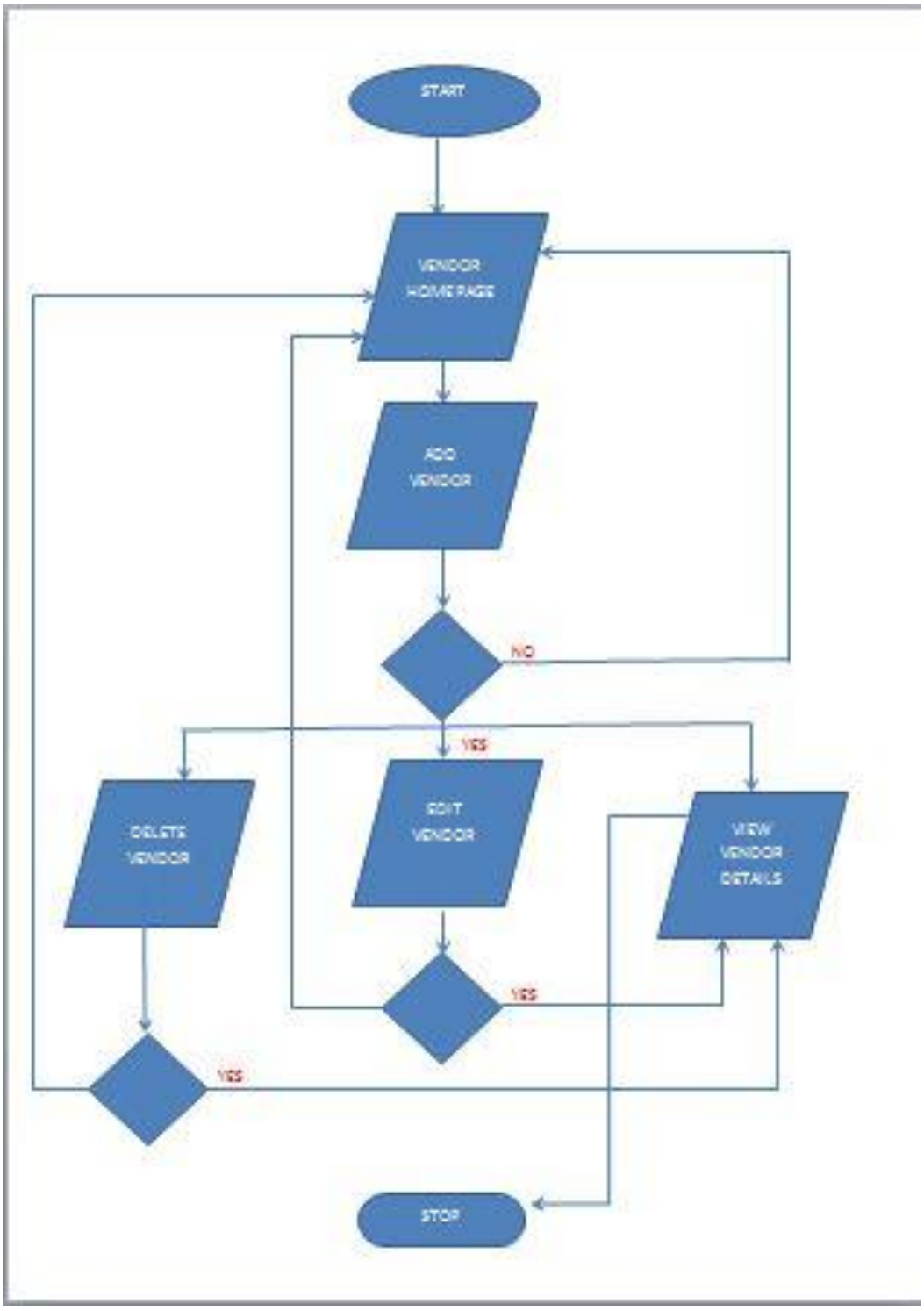
Chapter 5 :Implementation

5.1 Activity Diagram

5.1.1 Login



5.1.2 Vendor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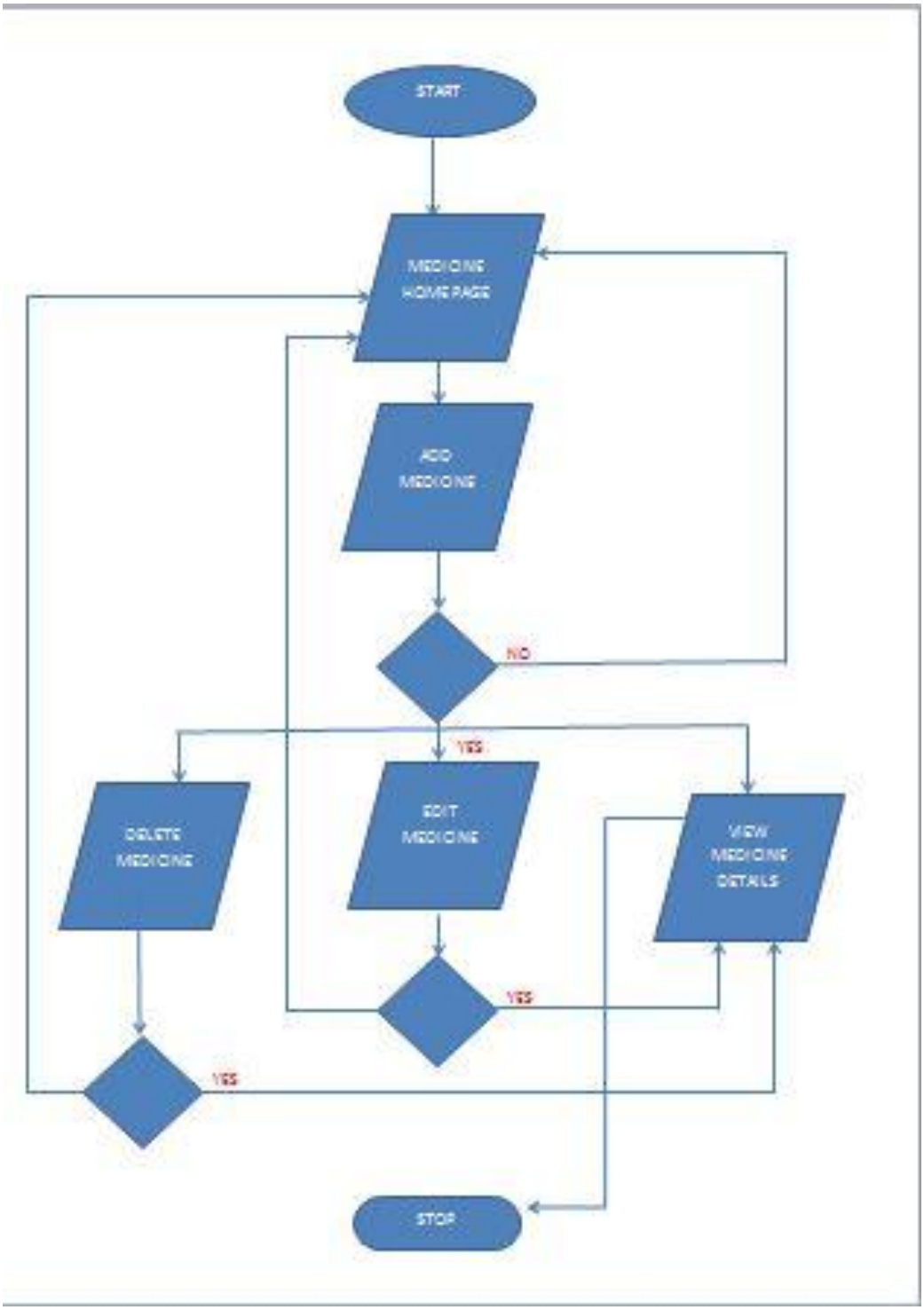
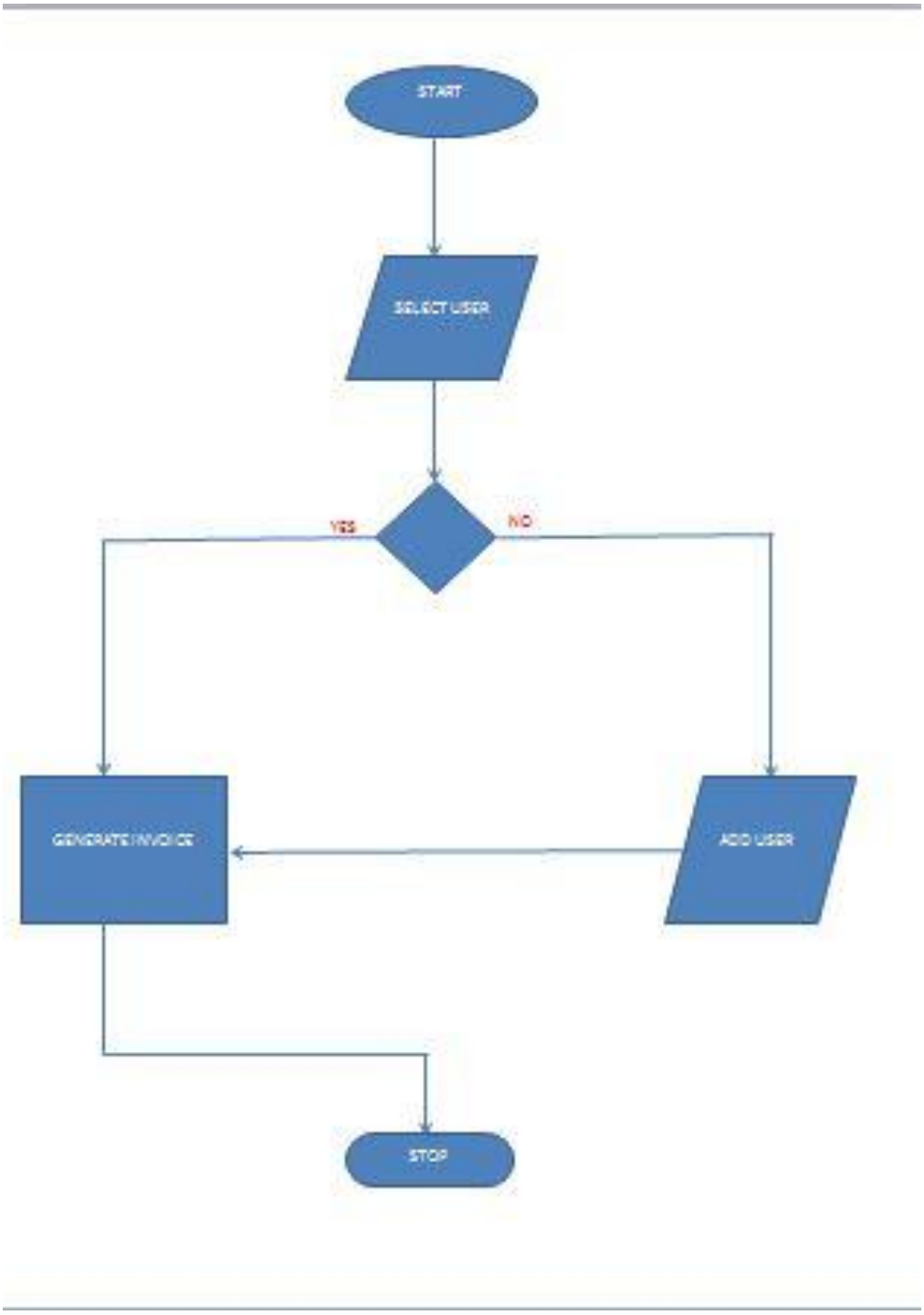
ADD VENDOR
NO
YES
DELETE VENDOR
EDIT VENDOR
VIEW VENDOR DETAILS
YES
YES
STOP

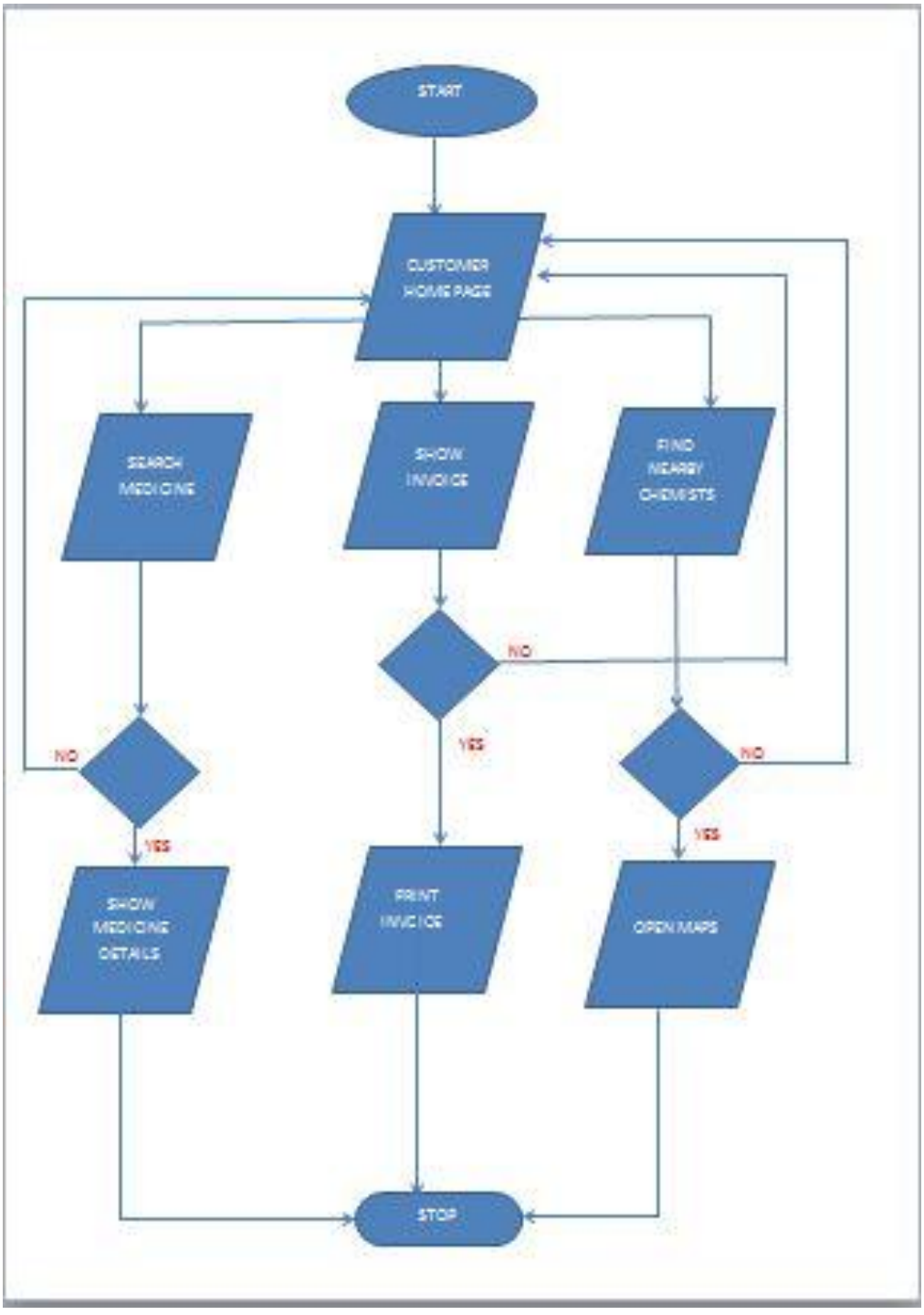
5.1.3 Medicine



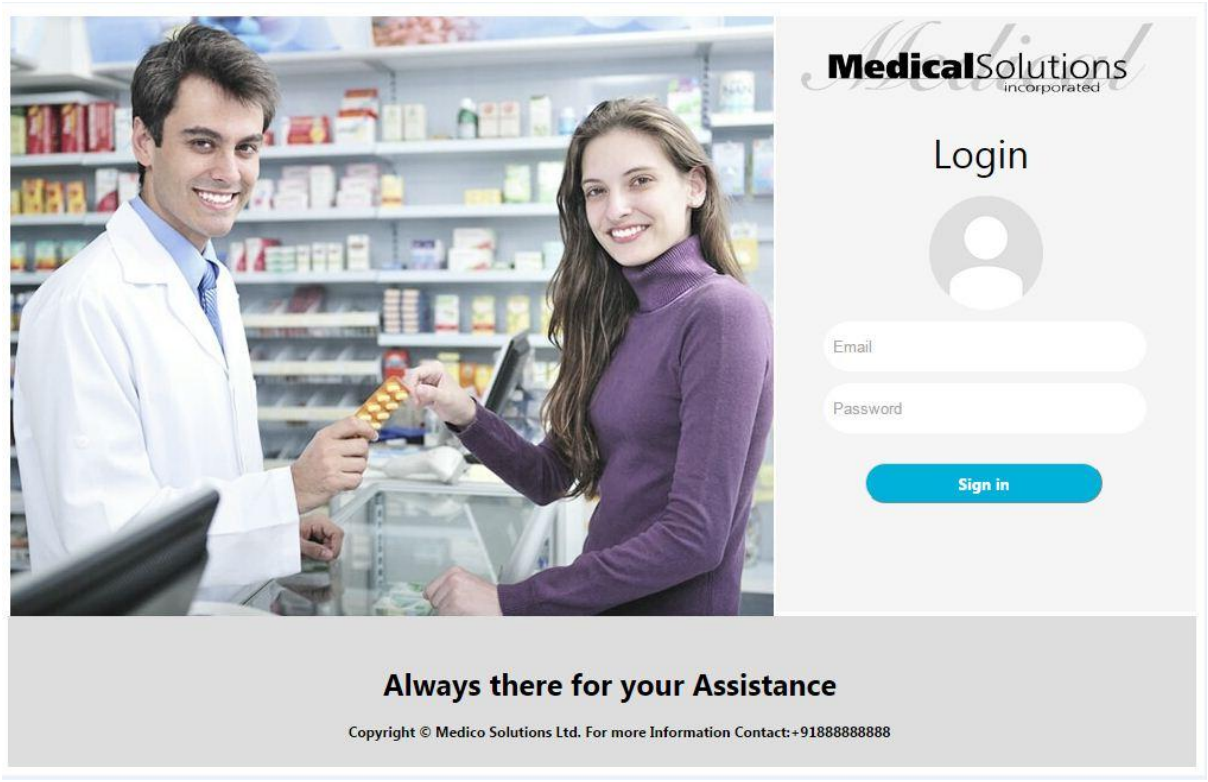
5.1.4 Invoice

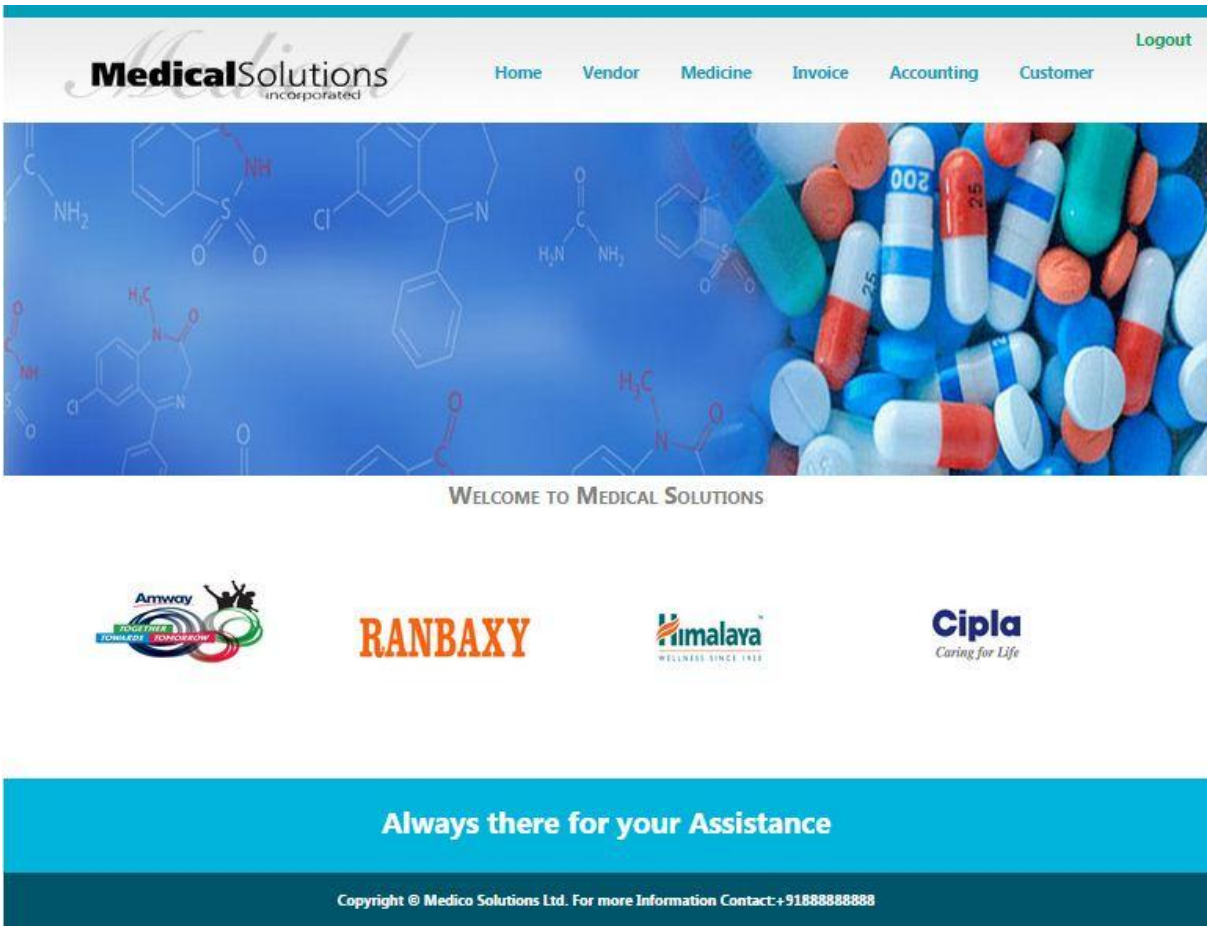


5.1.5 Customer



5.2 Screenshots

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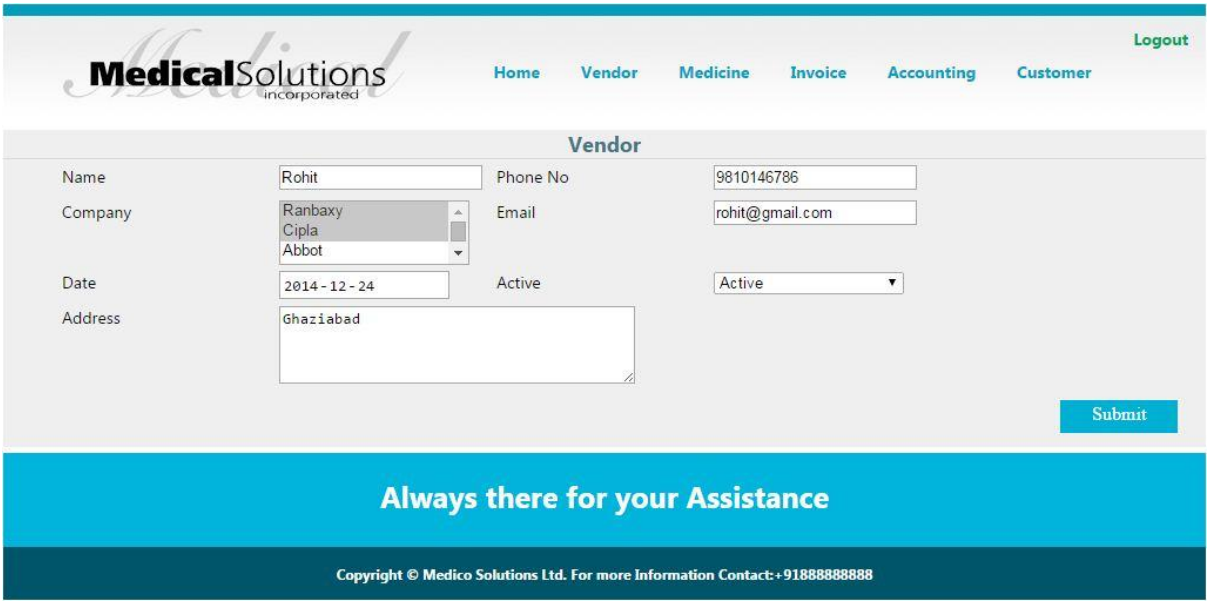
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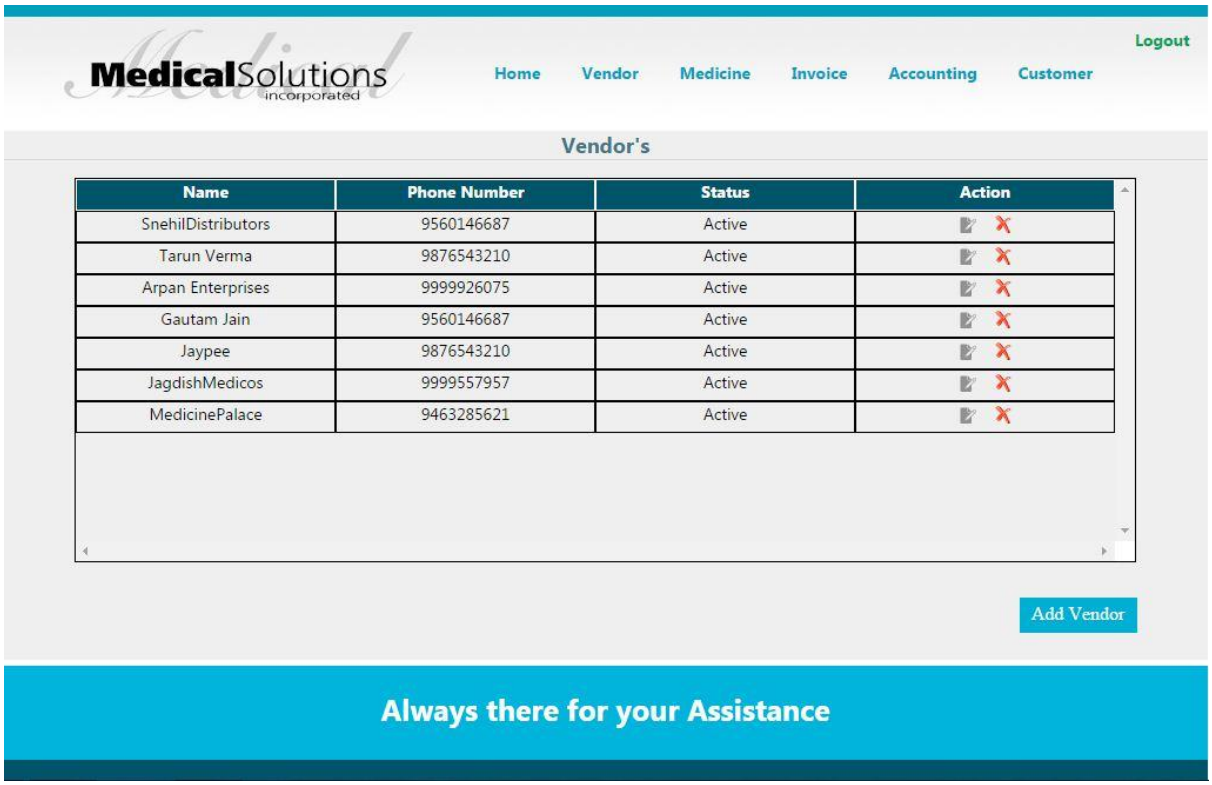
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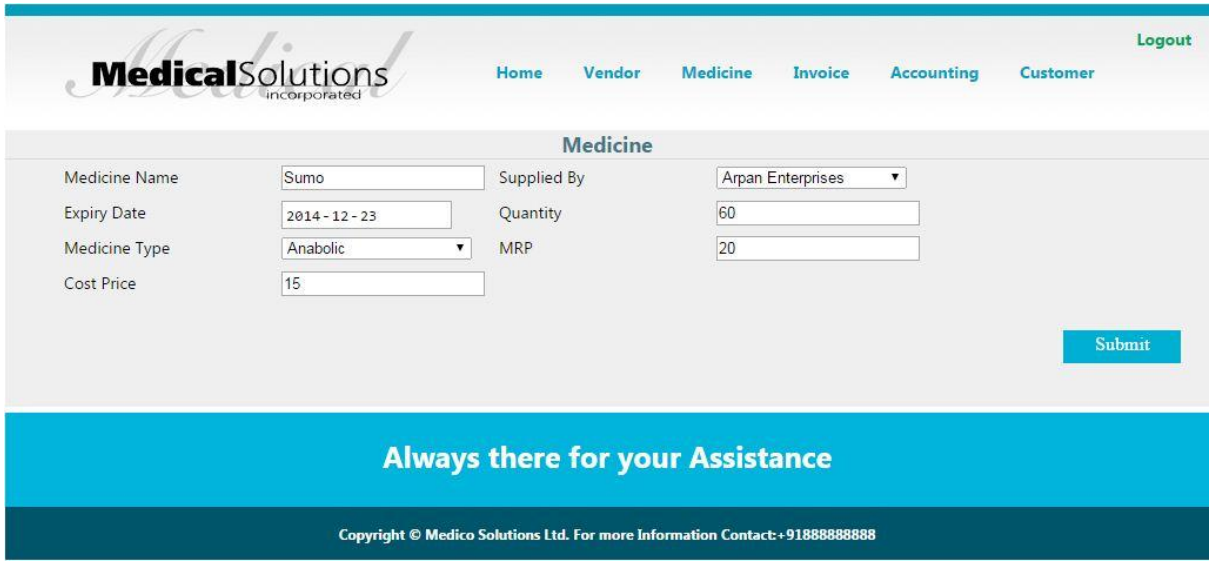
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Sumo
Supplied By
Arpan Enterprises
Expiry Date
2014-12-23
Quantity
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Medicine Type
Anabolic
MRP
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Cost Price
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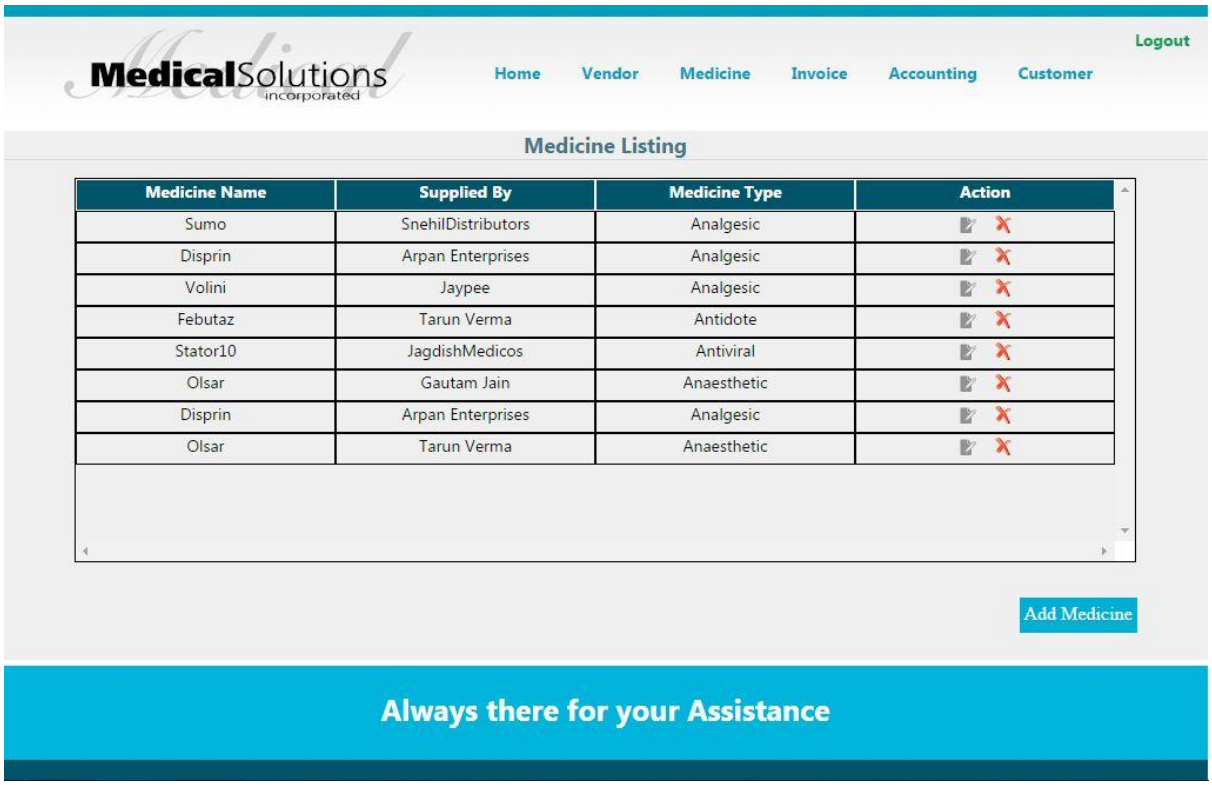
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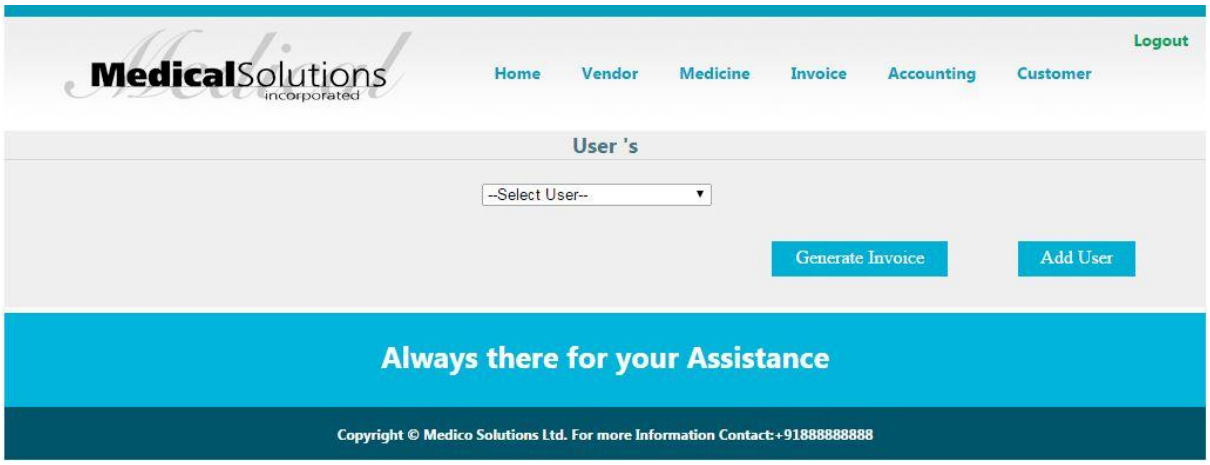
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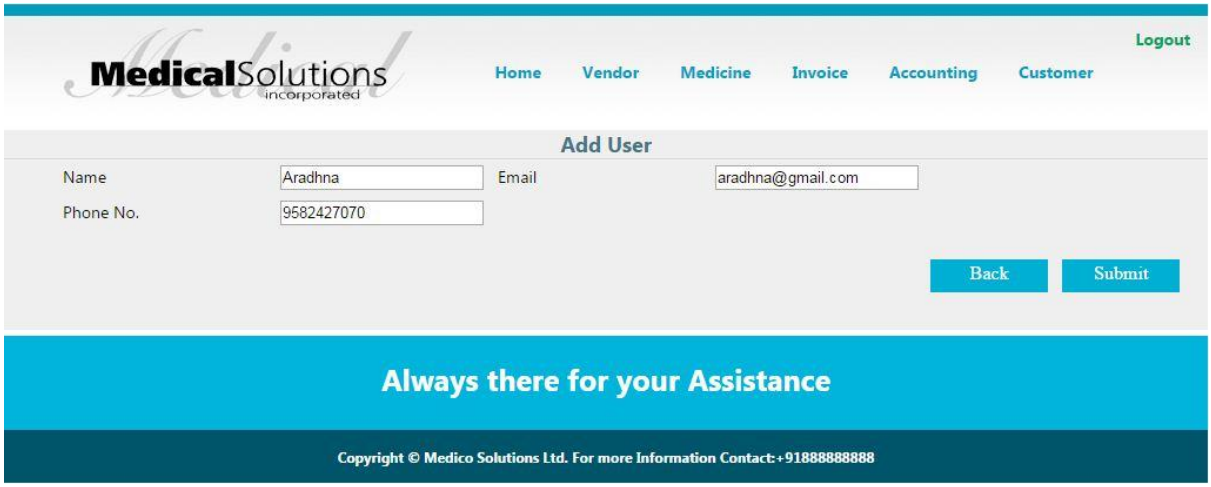
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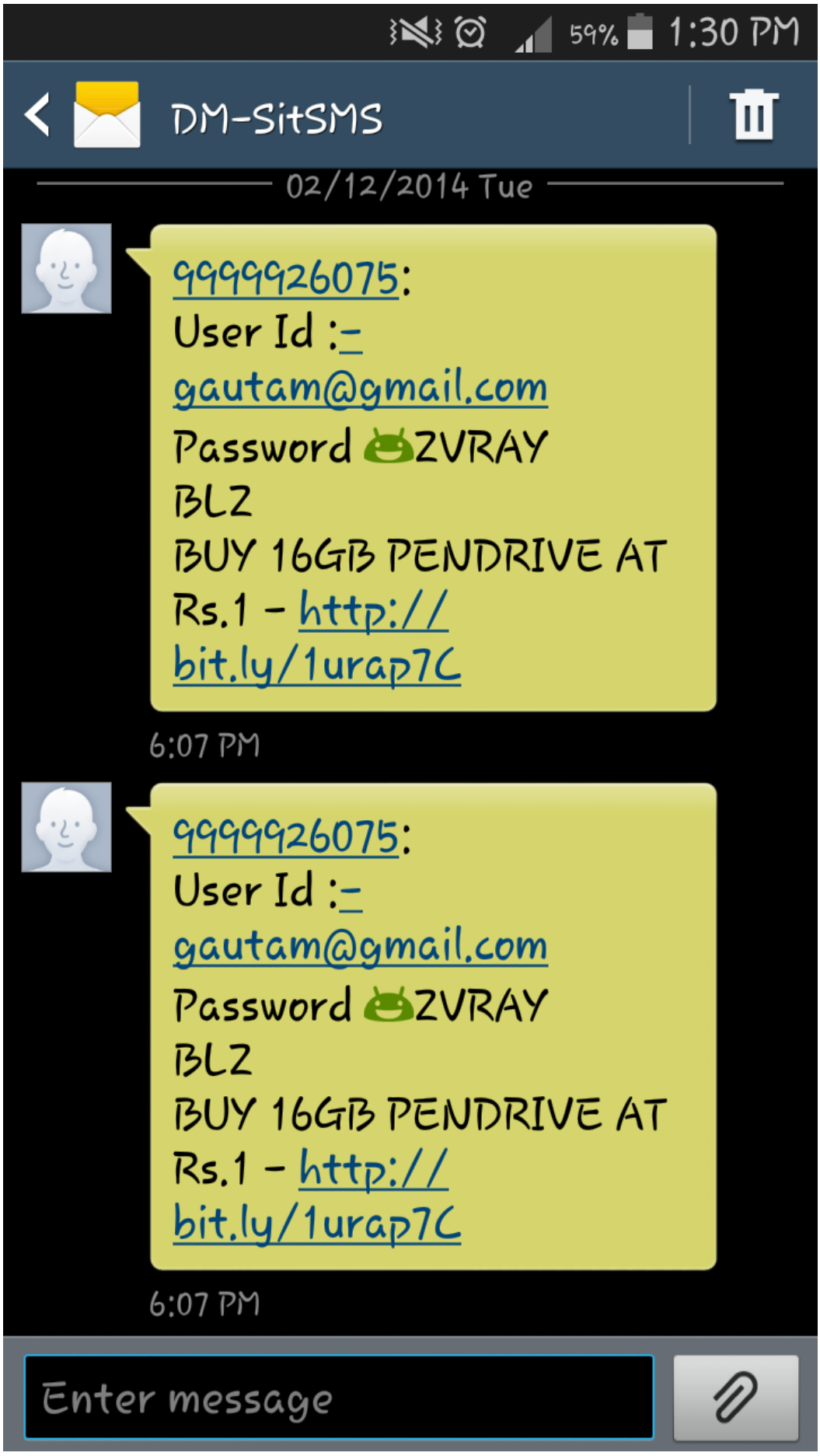
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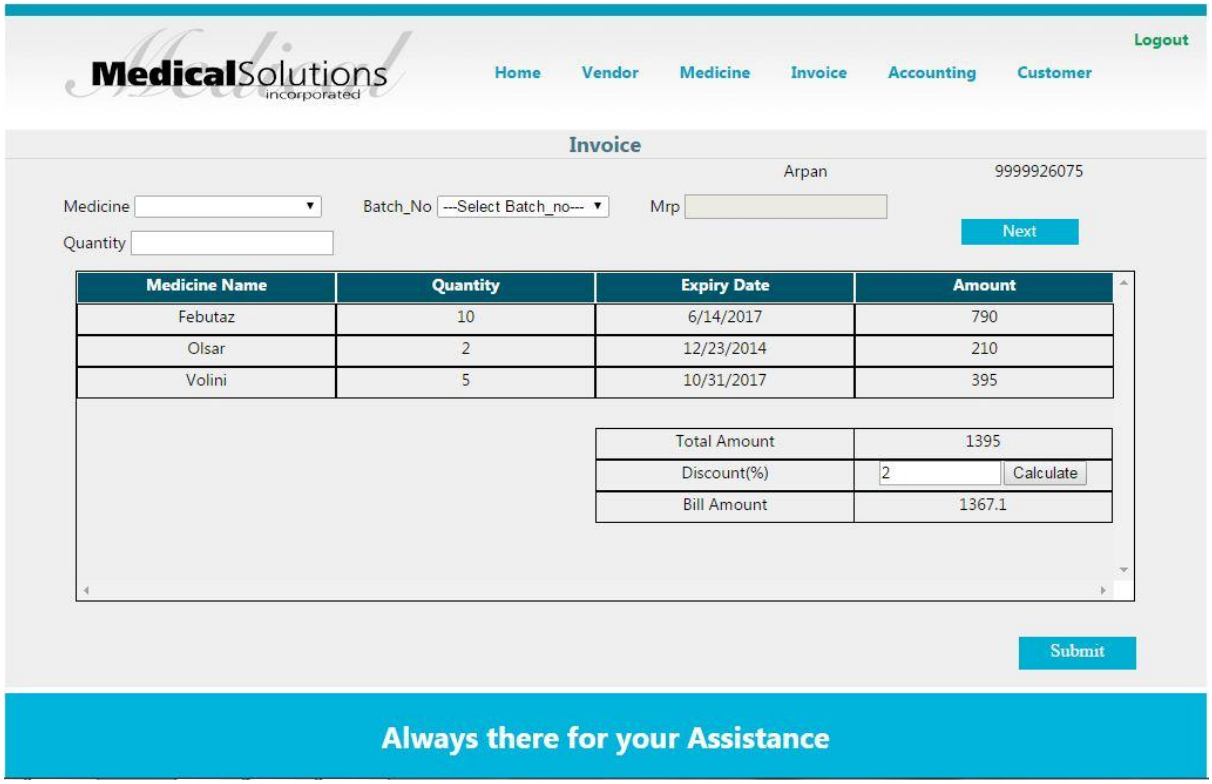
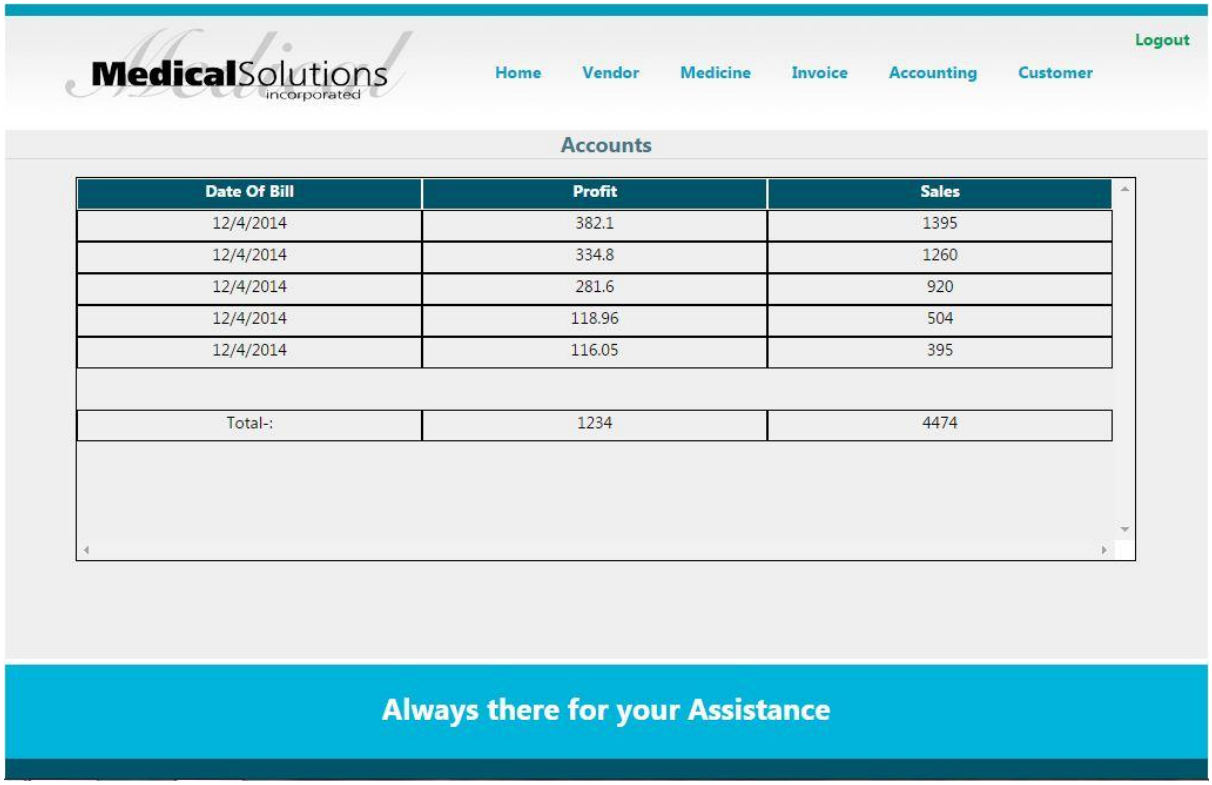
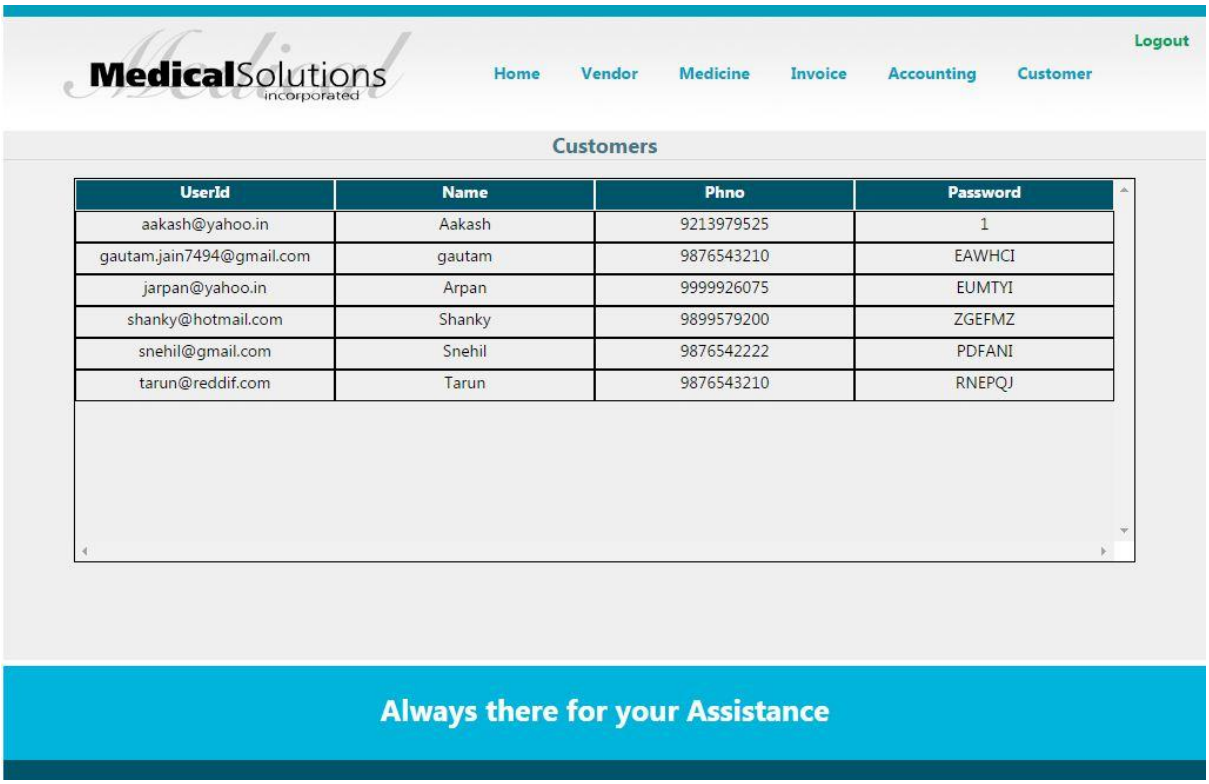
BLZ
BUY 16GB PENDRIVE AT
Rs.1 - http://
bit.ly/1urap7C
6:07 PM
Enter message


MedicalSolutions
incorporated
Logout
Home
Vendor
Medicine
Invoice
Accounting
Customer
Invoice
Arpan
9999926075
Medicine
Batch_No
---Select Batch_no---
Mrp
Next
Quantity
Medicine Name
Quantity
Expiry Date
Amount
Febutaz
10
6/14/2017
790
Olsar
2
12/23/2014
210
Volini
5
10/31/2017
395
Total Amount
1395
Discount(%)
2
Calculate
Bill Amount
1367.1
Submit
Always there for your Assistance


MedicalSolutions
incorporated
Logout
Home
Vendor
Medicine
Invoice
Accounting
Customer
Accounts
Date Of Bill
Profit
Sales
12/4/2014
382.1
1395
12/4/2014
334.8
1260
12/4/2014
281.6
920
12/4/2014
118.96
504
12/4/2014
116.05
395
Total-:
1234
4474
Always there for your Assistance


MedicalSolutions
incorporated
Logout
Home
Vendor
Medicine
Invoice
Accounting
Customer
Customers
UserId
Name
Phno
Password
aakash@yahoo.in
Aakash
9213979525
1
gautam.jain7494@gmail.com
gautam
9876543210
EAWHCI
jarpan@yahoo.in
Arpan
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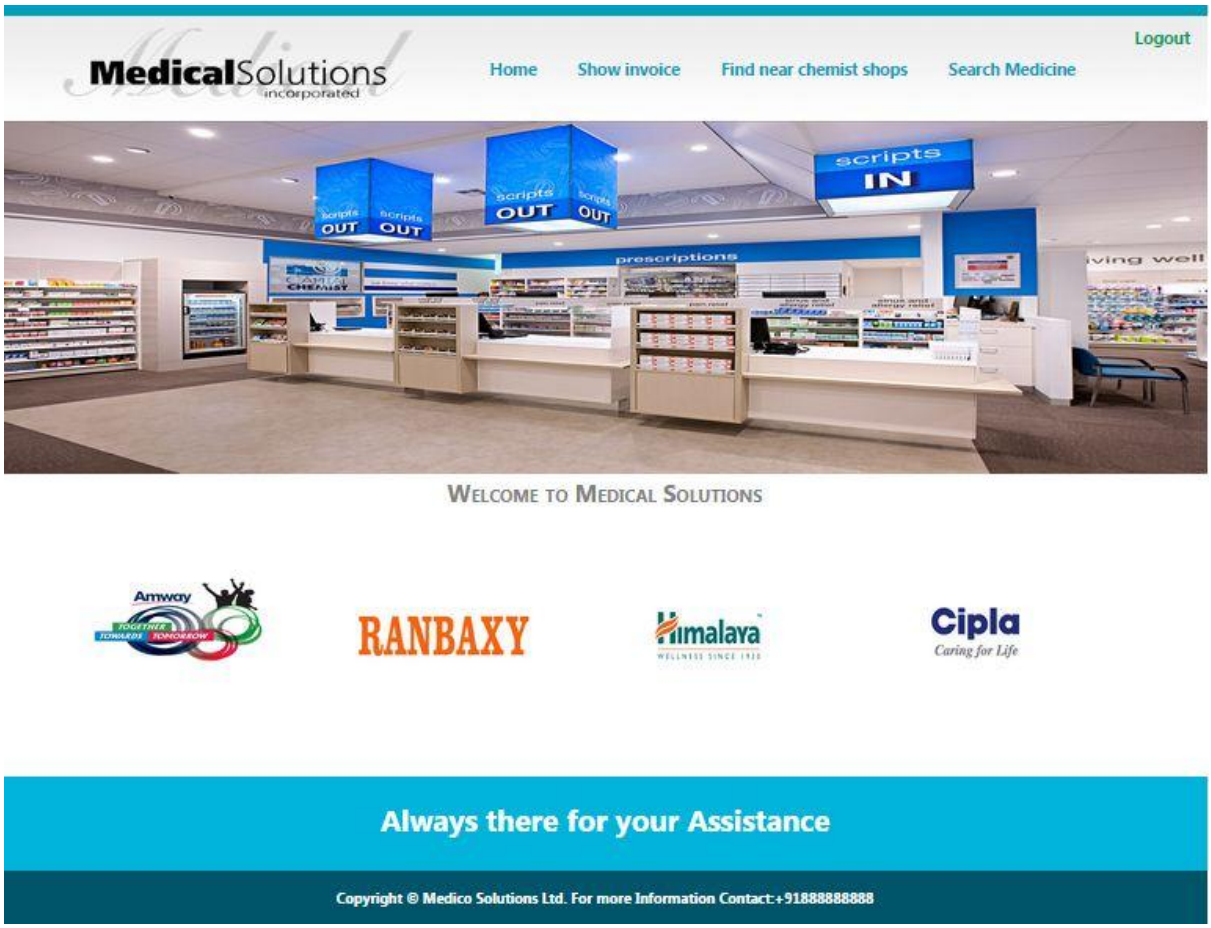
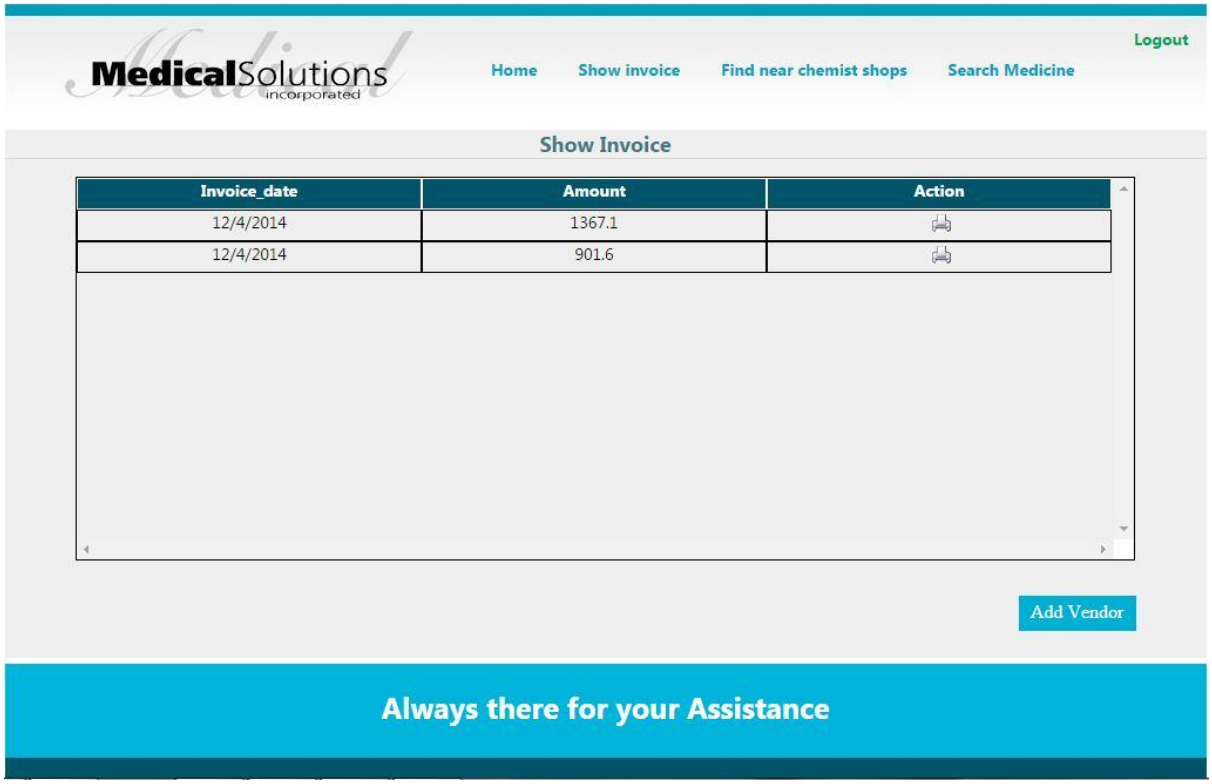
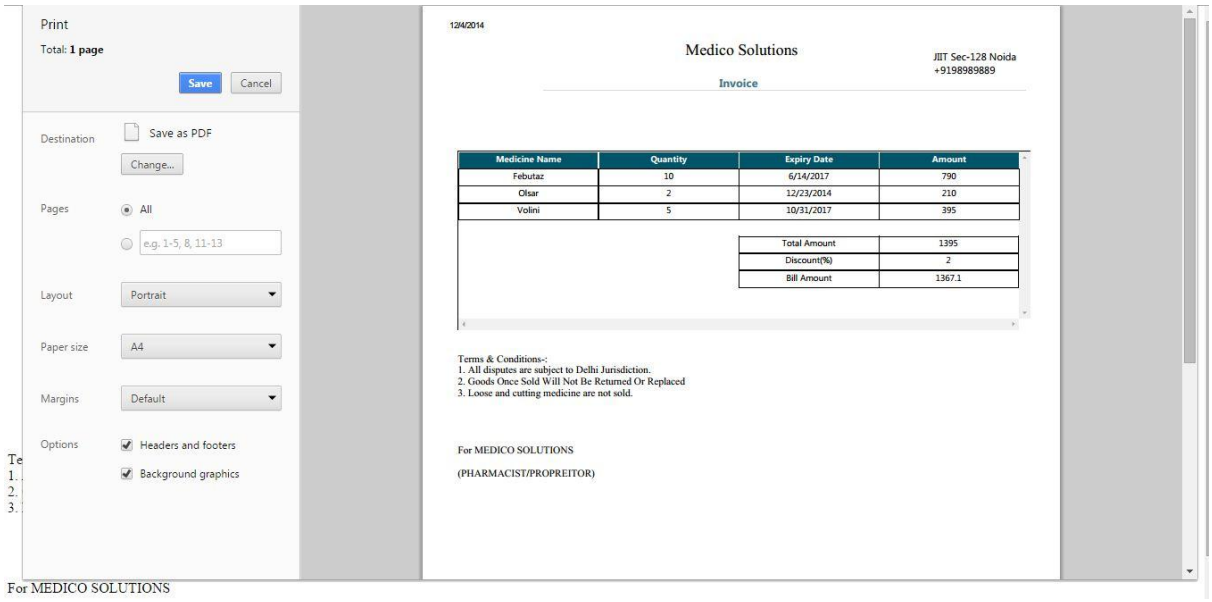
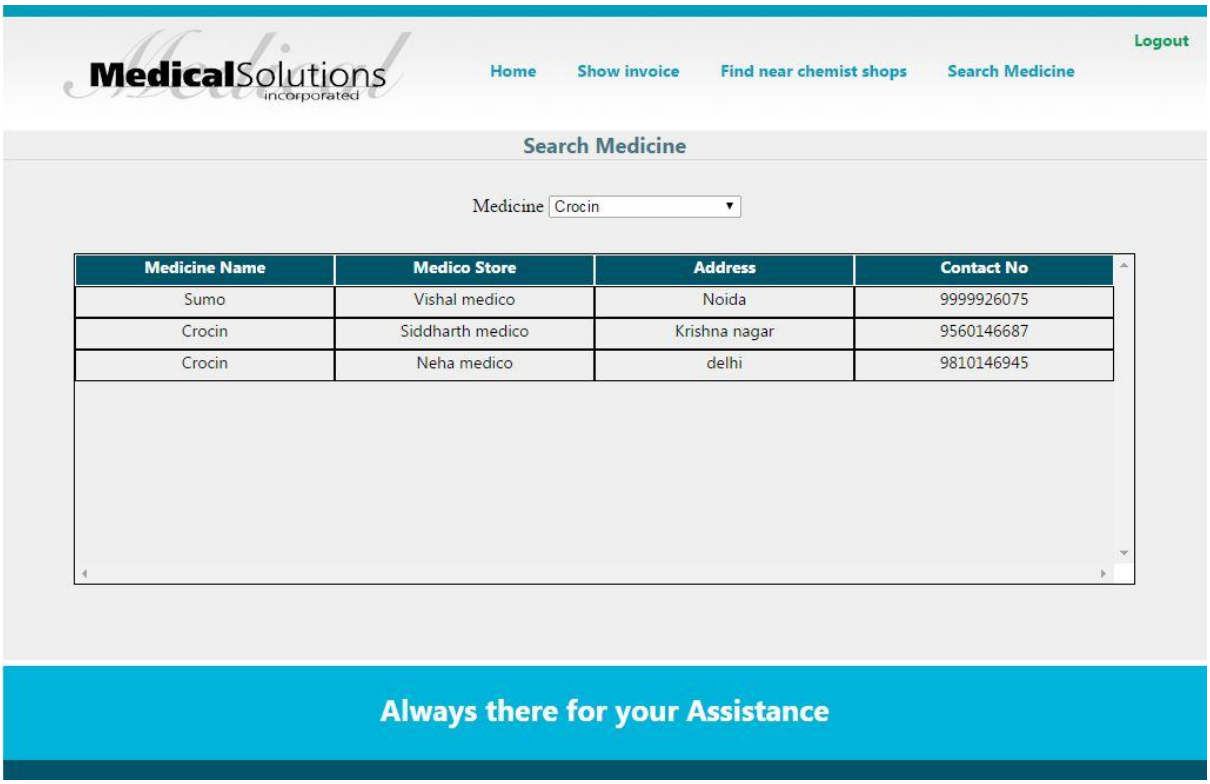

MedicalSolutions
incorporated
Logout
Home
Show invoice
Find near chemist shops
Search Medicine
scripts
IN
OUT
prescriptions
WELCOME TO MEDICAL SOLUTIONS
Amway
RANBAXY
Himalaya
Cipla
Caring for Life
Always there for your Assistance
Copyright © Medico Solutions Ltd. For more Information Contact:+91888888888


MedicalSolutions
incorporated
Logout
Home
Show invoice
Find near chemist shops
Search Medicine
Show Invoice
Invoice_date
Amount
Action
12/4/2014
1367.1
12/4/2014
901.6
Add Vendor
Always there for your Assistance



For MEDICO SOLUTIONS


MedicalSolutions
incorporated
Logout
Home
Show invoice
Find near chemist shops
Search Medicine
Search Medicine
Medicine Crocin
Medicine Name
Medico Store
Address
Contact No
Sumo
Vishal medico
Noida
9999926075
Crocin
Siddharth medico
Krishna nagar
9560146687
Crocin
Neha medico
delhi
9810146945
Always there for your Assistance

Chapter 6: Constraints

- GUI is only in English.
- Login and password is used for the identification of users.
- Only registered patients and doctors will be authorized to use the services.
- The product must be web-based.
- The computers must be equipped with web browsers such as Internet explorer
- The product must be stored in such a way that allows the client easy access to it. Therefore, the product will reside either on the client's server or access will come directly from the external server.
- The product must have a user-friendly interface that is simple enough for users to understand.
- This product will not be equipped with features to accommodate special needs such as, but not limited to, those with hearing and/or sight impairments.
- A general knowledge of basic computer skills is required to use the product
- Limited to HTTP/HTTPS.
- This system is working for single server.

Chapter 7 : Testing Report

7.1 Black Box Testing

TEST ID	DESCRIPTION / INPUT	EXPECTED OUTPUT	ACTUAL OUTPUT
1)	Precondition: Home page is already opened Input: click on vendor	Vendor Login page gets open automatically	Vendor Login Page gets opened up
2)	Precondition: home page is already opened Input: click on customer	Customer login page gets open automatically	Customer login page gets opened up
3)	Precondition: vendor page is opened by the admin Input: click on add vendor	Vendor is added by the admin	Vendor is added by the admin
4)	Precondition:Vendor list page is opened Input:-edit Vendor	Vendor updated	Vendor updated
5)	Precondition:Vendor list page is opened Input:-Delete Vendor	Vendor Deleted	Vendor Deleted

6)	Precondition: medicine page is opened by the admin Input: click on add medicine	Medicine is added by the admin	Medicine is added by the admin
7)	Precondition:medicine list page is opened Input:-edit medicine	Medicine updated	Medicine updated
8)	Precondition:medicine list page is opened Input:-delete medicine	Medicine deleted	Medicine deleted
9)	Precondition:Invoice page is opened Input:-Select User->Generate Invoice	Invoice opened with user name on it	Invoice opened with user name on it
10)	Precondition:Invoice opened Input:-Press backspace	Select User page gets opened	Medicine list opened
11)	Precondition:Invoice page is opened Input:-press add User	Add user page opened	Add user page opened

12)	Precondition:Add User page is opened Input:-press back	Select user page opened	Select user page opened
13)	Precondition:Add User page is opened Input:-press Submit	User added	User added
14)	Precondition:Add User page is opened Input:-Backspace key pressed	Select user page opened	Last tab opened
15)	Precondition:Quantity entered more than stock	Show alert box	Show alert box
16)	Precondition:Submit button pressed On Invoice	New tab opened with print Command	New tab opened with print Command
17)	Precondition: customer has already logged in Input: view previous bill	Previous invoice gets loaded	Previous invoice gets loaded

Chapter 8: Conclusion and Future Scope

The **standalone feature** of this product is that every task in a business is available to the owner of the business at one portal only. The businessman while on a trip can even access the software and view the operations in his shop thus not worrying about the issues.

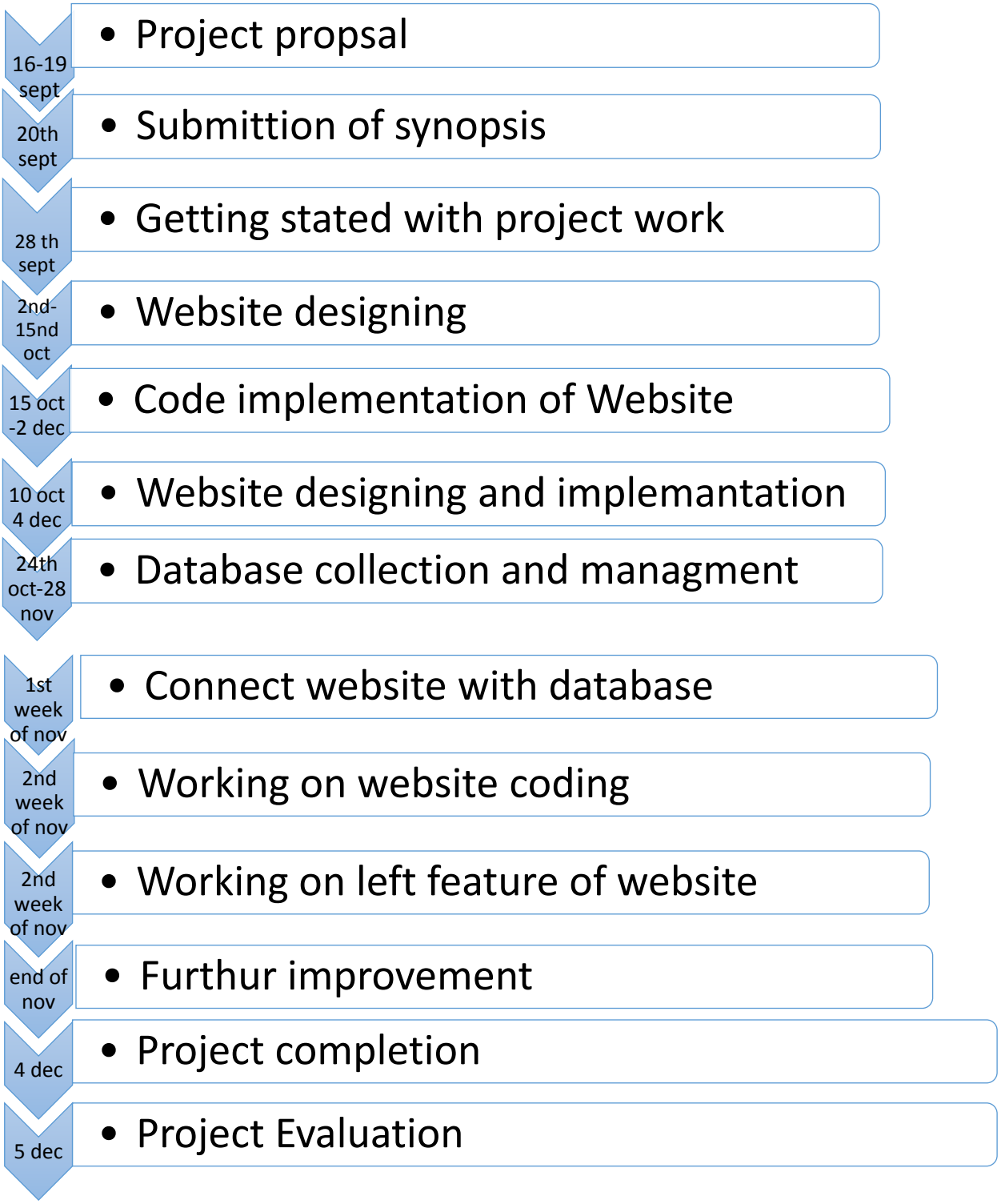
Considering the fact nothing is perfect and there is always a scope for improvement, we intend to have numerous innovations in this product.

For the **future scope**, we plan to convert the customer portal of this website into an e-commerce which means the customer would be able to order the medicine from his/her doorstep and make payments online.

For the admin portal, we intend to add more functionalities to the admin module like advances in the accounting, expansion of the database,

Also we will further enhance our services and include new businesses in our network. This project will make the day to day management of the pharmacist and the customers pleasant and easy. We hope we will extend this project further with more functionalities for the betterment of the presently followed system of services. New ideas will be incorporated. With our effort the outdated complex system will get converted into a simplified push button technology.

Chapter 9 : Gantt Chart



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5. http://www.w3s.com
6. https://www.youtube.com
7. http://www.mvchelp.com