Mini Project

SOFTWARE ENGINEERING CONCEPTS

EEX4347

SOFTWARE SYSTEM FOR GOOD HEALTH

GOODHEALTH
PHARMACY
your welfare is what we care

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CONTENTS

I - INTRODUCTION

Good Health is a major business company in the pharmaceutical field (This can be compared to the Cargills, Keels companies, or like anything) and the company needs a pharmacy management system to make the works easy and efficiently. The purposes are a developing a complete management system to Good Health company.

A system to maintain and manage the administration of the Good Health is developed here to increase the current standards of the company. All the paper works and other attributes will be recorded on common system to have access easily to the owners very conveniently and collect relevant information about the pharmacies and the drugs available. This system will help to manage all the databases such as stocks available, name of the suppliers, the name and place of each branch etc. of the good health company and keep tracks on each of the branch performance.

Good Health Pharmacy Management System keep the records of pharmacy, medicine, customer, suppliers, customers, purchase and contracts list. The system run on python terminal which track customer detail, purchase medicine detail, gives notification on when medicine stock is nearly empty and generated discount on the basic of category (silver customer, gold customer, bronze customer, normal customer), finally system generated the report on the basic of purchased medicine.

2 - REQUIREMENT ANALYSIS

Requirements Analysis is the process of defining the expectations of the users for an application that is to be built or modified. Requirement analysis involves all the tasks that are conducted to identify the needs of different stakeholders. Therefore, requirements analysis means to analyse, document, validate and manage software or system requirements. High-quality requirements are documented, actionable, measurable, testable, traceable, helps to identify business opportunities, and are defined to a facilitate system design.

- **Purpose about requirement analysis**

This project is targeted at creating a system to manage the database system for Good Health company

- **System mechanism**

There are eight main parameters that we consider during the system process.

1. Pharmacy
2. Drugs (Medicine)
3. Purchase
4. Customer
5. Supplier
6. Contracts
7. Help
8. Exit

- **Definition of Requirenment**

Requirement is a software capability needed by the user to solve a problem to achieve an objective.

2 - REQUIREMENT ANALYSIS

- **Main Functions**

User Requirements	
Pharmacy	Add/ View/ Remove Pharmacies
Drugs (Medicine)	Add/ View/ Remove Drugs Also, can be viewed the remaining Drugs
Purchase	Purchase Medicine and View Purchased Medicine Can be generated the Invoice
Customer	Add/ View/ Remove Customers Also, can be searched the customers from Database.
Supplier	Add/ View/ Remove Suppliers
Contracts	Add/ View/ Remove Contracts

- **Problem over review**

Good Health need to use a system to manage their data through a software system

- **Environment**

New software system should be implemented by the Good Health company

2 - REQUIREMENT ANALYSIS

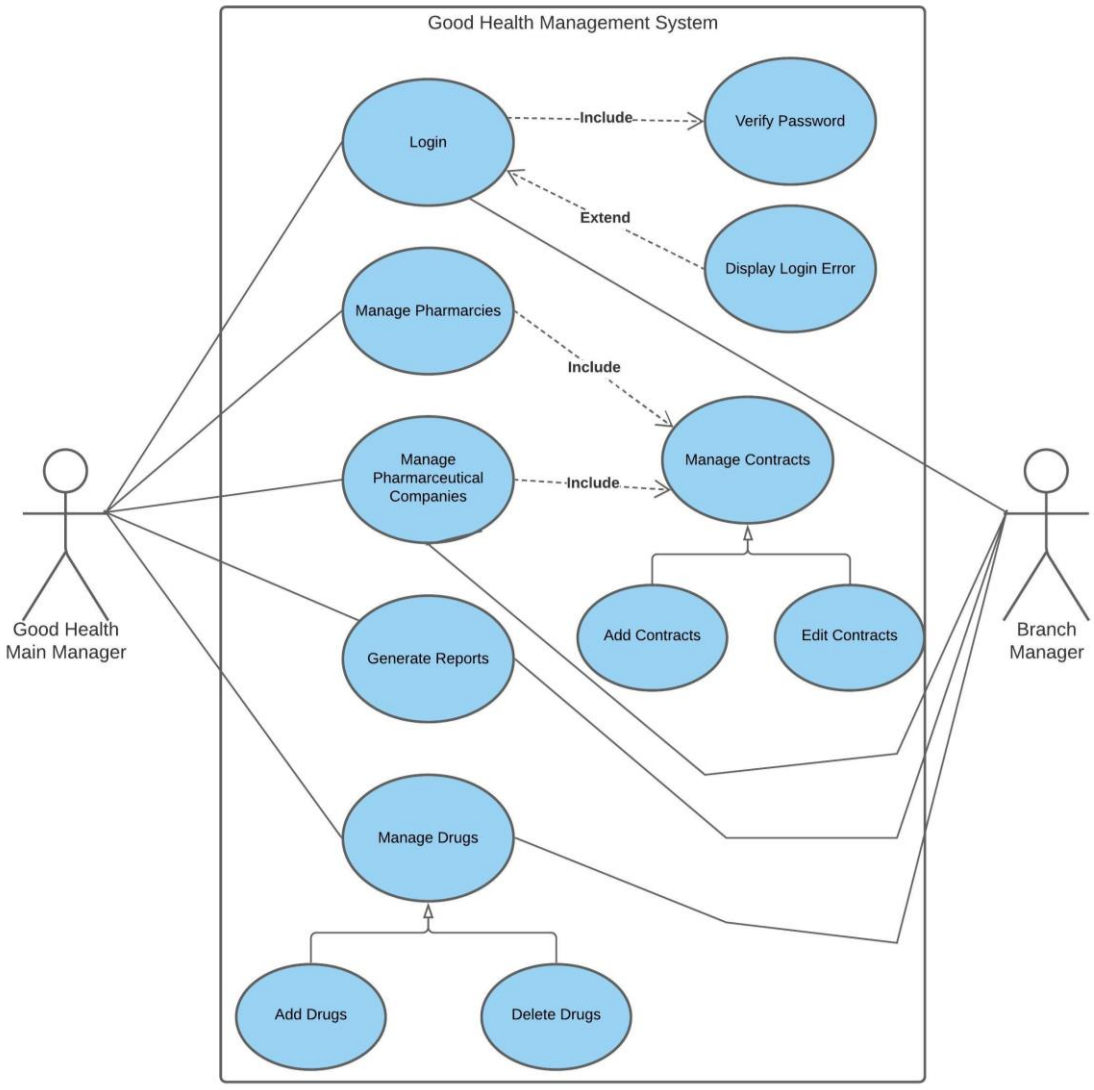
Objective of the system

- **The objective of the system of Pharmacy Management System are as below:**

  - To manage the detail of pharmacies, customer, medicine, supplier, contracts and medicine purchased.
  - To manage all the information of Good Health Company including discount on basic of category (silver customer, gold customer, bronze customer, normal customer).
  - Editing, adding and updating of records is improved which results in proper resource management of company data.
  - To deals with monitoring the records and transactions of cells.

2 - REQUIREMENT ANALYSIS

- **Use Case Diagram**



3 – HIGH LEVEL DESIGN

A success full system should focus on the purpose of the project, determining all the functionality of the system, determining system scale investment cost etc. The design of the system shall be carried out in accordance with the following principle.

1) Validity
2) Reliability
3) Use of standard techniques
4) Advances

Purpose of the high-level design

- Preliminary Design – In this part we need to size the project and the to identify the parts of the project that may be risky or time consuming
- Design overview – As the project proceed, we need to provide an overview of how sub system a component of system fit together

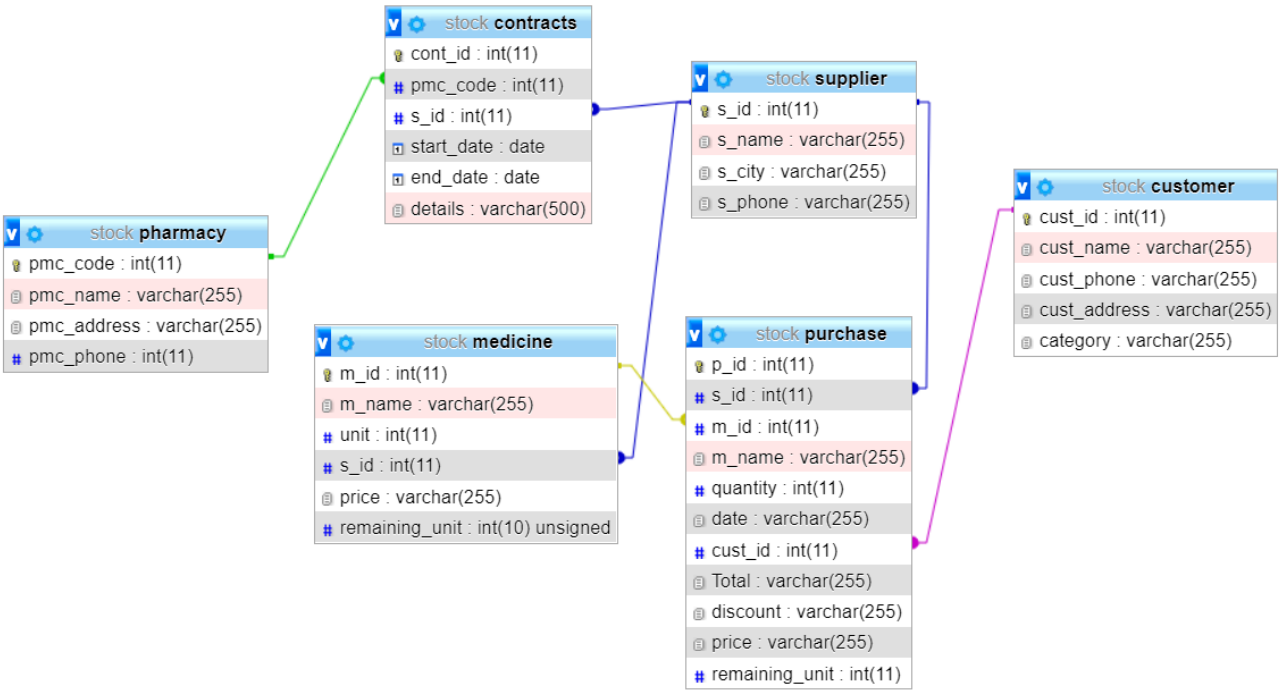
Class diagram comes under the high-level design. There help to analyses the project and eases the work as said in the purpose of high-level design.

In our system main classes are:

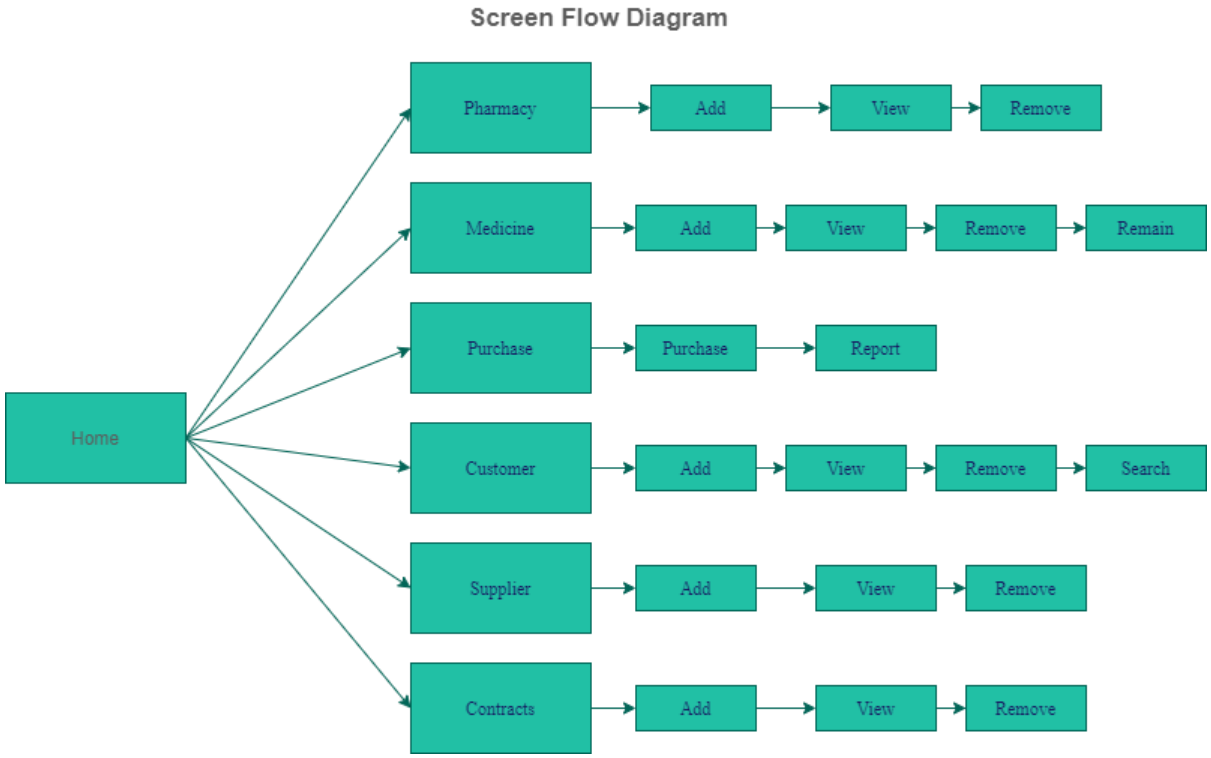
Pharmacy
Medicine
Purchase
Customer
Supplier
Contracts

- **Class Diagram**

Class diagrams are the only diagrams which can be directly mapped with object-oriented languages and thus widely used at the time of construction.

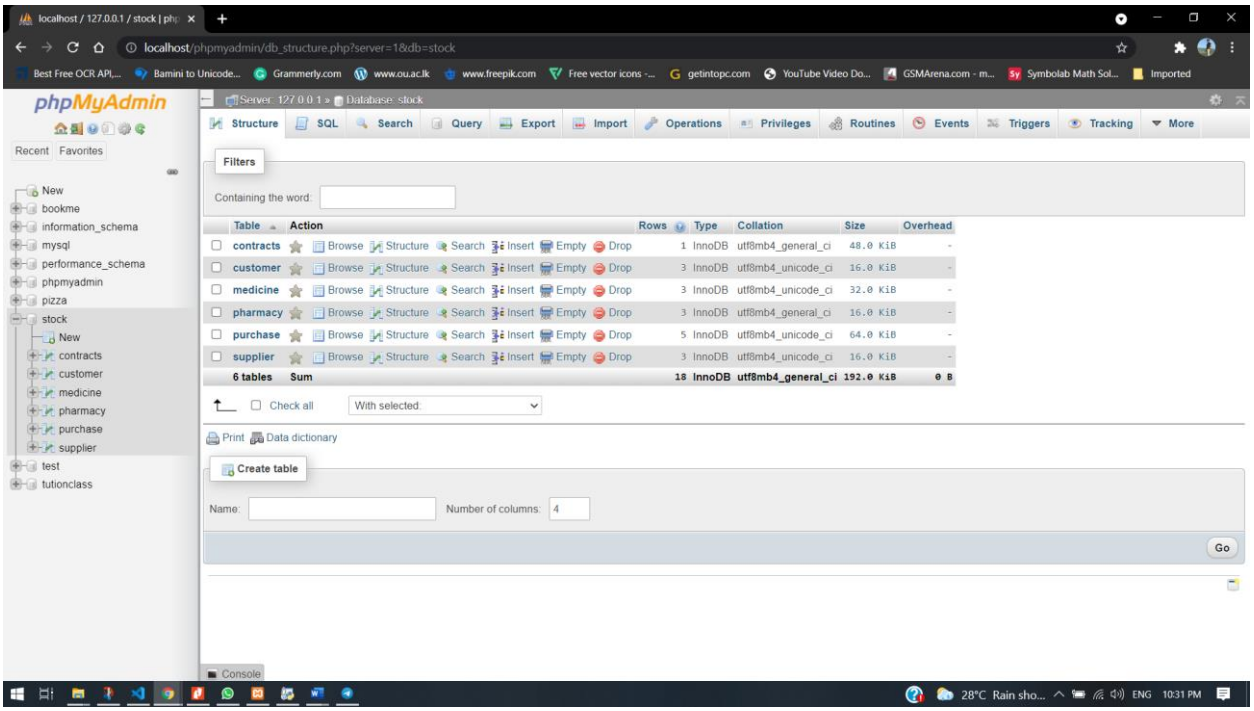


Screen Flow Diagram



4 - DATA MODELLING

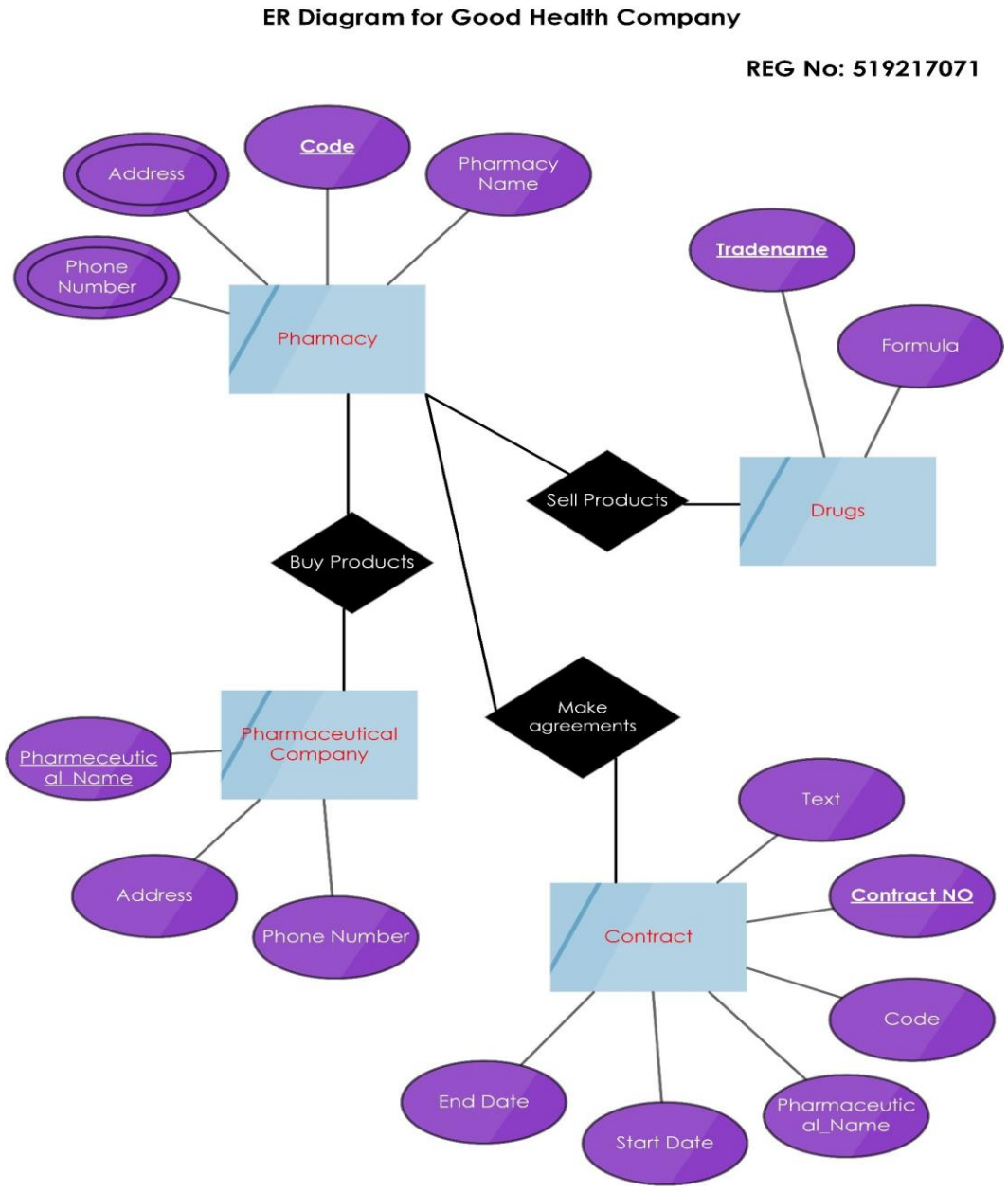
Data models can facilitate interaction among the designer, the applications programmer, and the end user. A well-developed data model can even foster improved understanding of the organization for which the database design is developed. In short, data models are a communication tool.



4 - DATA MODELLING

- **ER Diagram**

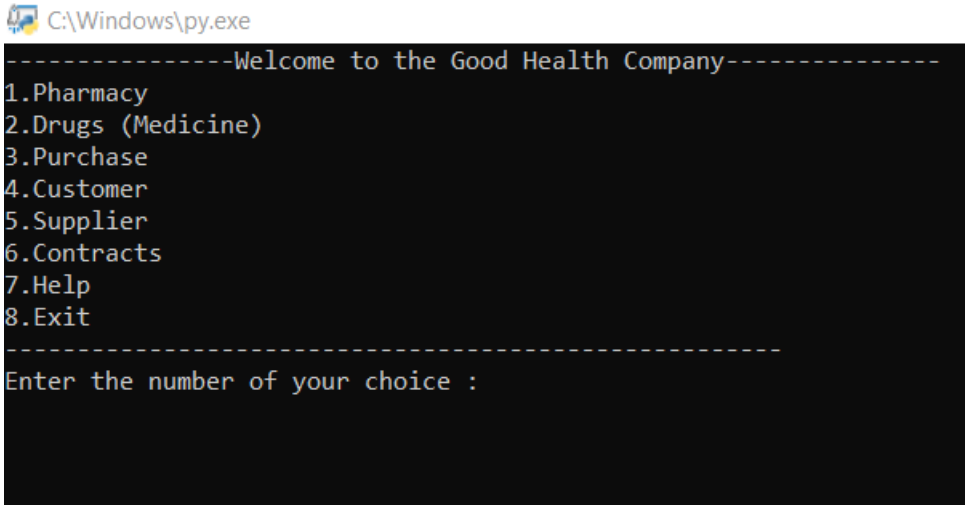
An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure



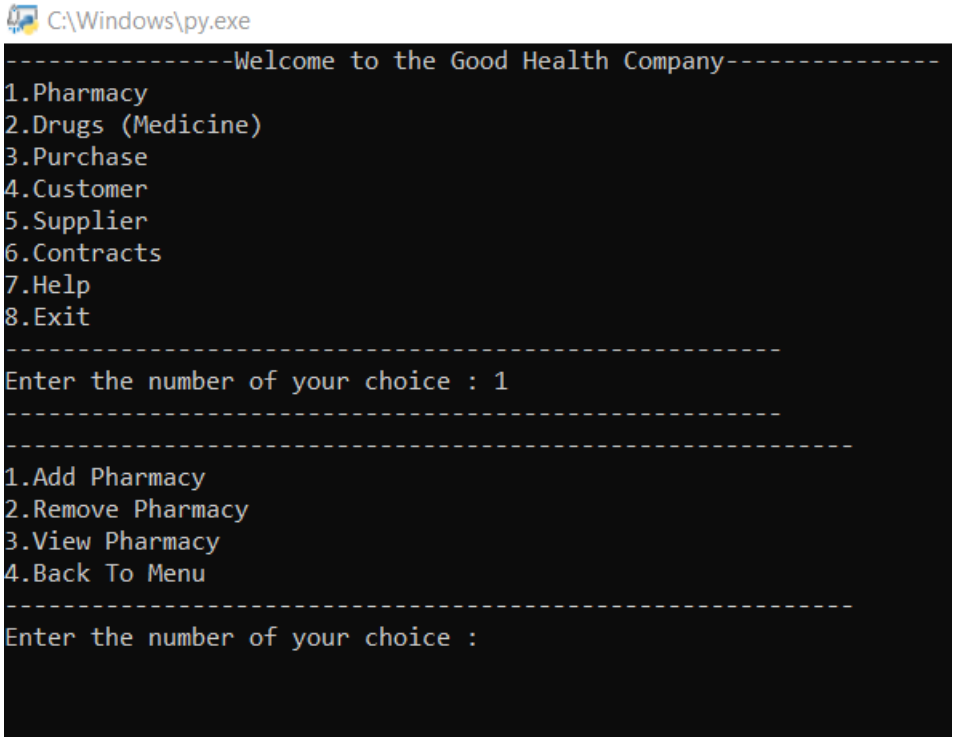
5 - DETAIL DESIGN

Detailed design deals with the implementation part of what is seen as a system which we developed. Attached here are all the graphical user interfaces of our application

Home



1. Pharmacy



5 - DETAIL DESIGN

1. Pharmacy – Add Pharmacy

```
----------------------Add Pharmacy--------------------
Enter the Pharmacy Name: Life Pharmacy - Polgolla
Enter the Pharmacy Address: 31, Polgolla, Kandy
Enter the Pharmacy phone No: 0813692581
Pharmacy added Successfully
------------------------------------------------------
------------------------------------------------------------
1.Add Pharmacy
2.Remove Pharmacy
3.View Pharmacy
4.Back To Menu
------------------------------------------------------------
Enter the number of your choice :
```

1. Pharmacy – Remove Pharmacy from Database

```
------------------------------------------------------------
1.Add Pharmacy
2.Remove Pharmacy
3.View Pharmacy
4.Back To Menu
------------------------------------------------------------
Enter the number of your choice : 2
------------------------------------------------------------
--------------------Remove Pharmacy-------------------
Enter Pharmacy Name to remove: Life Pharmacy - Polgolla
        \Pharmacy Removed Successfully

------------------------------------------------------
```

1. Pharmacy – View Pharmacy list from Database tupples

```
------------------------------------------------------------
1.Add Pharmacy
2.Remove Pharmacy
3.View Pharmacy
4.Back To Menu
------------------------------------------------------------
Enter the number of your choice : 3
------------------------------------------------------------
-------------------View Pharmacies----------------------
(1, 'East West', 'Kandy', 812323236)
(2, 'Bees', 'Gelioya', 761231235)
(3, 'Royal Pharmarcy', 'Colombo', 781231235)
------------------------------------------------------
```

2. Drugs (Medicine)

```
----------------Welcome to the Good Health Company---------------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------
Enter the number of your choice : 2
-----------------------------------------------------
```

2. Drugs - Add Medicine

```
-----------------------------------------------------
1.Add Medicine
2.Remove Medicine
3.View Medicine
4.Remaining Medicine List
5.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 1
-----------------------------------------------------
----------------------Add Medicine----------------------
Enter the Medicine Name: Thyroxin
Enter the Unit: 10
Enter the Supplier ID: 2
Enter the price of Medicine(per unit): 13
Medicine added Successfully
-----------------------------------------------------
```

2. Drugs - View Medicine

```
-----------------------------------------------------
1.Add Medicine
2.Remove Medicine
3.View Medicine
4.Remaining Medicine List
5.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 3
-----------------------------------------------------
------------------------Medicine-----------------------
(2, 'Calcium', 5, 2, '25', 2)
(3, 'Vitamin C', 12, 2, '200', 5)
(5, 'Panadol', 10, 2, '15', 50)
(6, 'Thyroxin', 10, 2, '13', 0)
-----------------------------------------------------
```

2. Drugs - Remaining Medicine List

```
-----------------------------------------------------
1.Add Medicine
2.Remove Medicine
3.View Medicine
4.Remaining Medicine List
5.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 4
-----------------------------------------------------
------------------------Medicine----------------------
Medicine Name: Calcium
Remaining Unit: 2
-----------------------------------------------------
Medicine Name: Vitamin C
Remaining Unit: 5
-----------------------------------------------------
Medicine Name: Panadol
Remaining Unit: 50
-----------------------------------------------------
Medicine Name: Thyroxin
Remaining Unit: 0
-----------------------------------------------------
-----------------------------------------------------
```

3. Purchase

```
----------------Welcome to the Good Health Company---------------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------
Enter the number of your choice : 3
-----------------------------------------------------
-----------------------------------------------------
1.Purchase Medicine
2.View purchase Report
3.Back To Menu
-----------------------------------------------------
Enter the number of your choice :
```

3. Purchase – Purchase Medicine

```
1.Purchase Medicine
2.View purchase Report
3.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 1
-----------------------------------------------------
----------------------Purchase-----------------------
Enter the Medicine ID: 5
Enter the Medicine Name: Panadol
Enter the Supplier ID:2
Enter the Customer ID:3
Enter the quantity:20
               ***Purchased Successfully***
--------------GOOD HEALTH COMPANY-----------------
--------------INVOCIE-----------------
Customer Name:  Firnas
Customer Category:  gold
-------------------------------------
Purchase Medicine Name:  Panadol
Purchase Quantity:  20
-------------------------------------
--------------INVOCIE-----------------
Purchase Date:  2021-09-10 22:54:16
---------------RECEIPT----------------
Price:  300
Discount:  30
Total Price:  270
----------------END------------------
```

4. Customer

```
----------------Welcome to the Good Health Company---------------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------------
Enter the number of your choice : 4
-----------------------------------------------------------
------------------------------------------------------------
1.Add Customer
2.Remove Customer
3.View Customer
4.Search Customer with Receipt
5.Back To Menu
------------------------------------------------------------
Enter the number of your choice :
```

4. Customer - View Customer

```
-----------------------------------------------------------
1.Add Customer
2.Remove Customer
3.View Customer
4.Search Customer with Receipt
5.Back To Menu
-----------------------------------------------------------
Enter the number of your choice : 3
-----------------------------------------------------------
----------------------Customer----------------------
Total number of Customer:  3

Customer Id:  1
Customer Name:  Ahamed
Customer Phone No:  0770666158
Customer Address:  Gelioya
Customer Category:  bronze


Customer Id:  3
Customer Name:  Firnas
Customer Phone No:  519217071
Customer Address:  Kandy
Customer Category:  gold


Customer Id:  4
Customer Name:  Hasindu
Customer Phone No:  0811234569
Customer Address:  Nawala
Customer Category:  normal


-------------------------------------------------
```

5 - DETAIL DESIGN

5. Customer – Search Customer

```
------------------------------------------------------------
1.Add Customer
2.Remove Customer
3.View Customer
4.Search Customer with Receipt
5.Back To Menu
------------------------------------------------------------
Enter the number of your choice : 4
------------------------------------------------------------
------------Customer----------------
Enter the Customer ID: 3
------------------------------------
Customer Have Purchased:  2 times.
------------------------------------
Customer Name:  Firnas
Customer Phone No:  519217071
Customer Address:  Kandy
Customer Category:  gold
Customer Purchase Medicine:  Vitamin C
Customer Purchase Medicine Quantity:  5
------------------------------------
Purchase Date:  2021-09-10 21:06:29
--------------RECEIPT---------------
Price:  1000
Discount:  100
Total Price:  900
----------------END-----------------

Customer Purchase Medicine:  Panadol
Customer Purchase Medicine Quantity:  20
------------------------------------
Purchase Date:  2021-09-10 22:54:16
--------------RECEIPT---------------
Price:  300
Discount:  30
Total Price:  270
----------------END-----------------
```

In the below image, cost of Panadol medicine (per piece is Rs.15) but the customer has purchase 20 pieces i.e. (20*15=300) before discount. Customer is from Gold Category which he/she gets 10% discount (i.e., 10% of 300=30). Now the Total Price is (total price=price –discount) i.e. Rs.270

6. Suppliers

```
----------------Welcome to the Good Health Company---------------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------
Enter the number of your choice : 5
-----------------------------------------------------
-----------------------------------------------------------
1.Add Supplier
2.Remove Supplier
3.View Supplier
4.Back To Menu
-----------------------------------------------------------
Enter the number of your choice : 3
-----------------------------------------------------------
----------------------Supplier-------------------------
(2, 'GSK', 'Colombo', '0114545458')
(3, 'Abbott', 'Kandy', '0817894561')
(4, 'Merck', 'Jaffna', '0765489321')
-----------------------------------------------------
```

7. Contracts

```
----------------Welcome to the Good Health Company---------------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------
Enter the number of your choice : 6
-----------------------------------------------------
-----------------------------------------------------
1.Add Contract
2.View Contract
3.Remove Contract
4.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 2
-----------------------------------------------------
--------------------View Contract------------------
Contract ID:  1
Pharmacy ID of this Contract:  1
Supplier ID of this Contract:  2
Start Date of this Contract:  2021-09-01
End Date of this Contract:  2022-09-01
Details:  Paid
=======================================
```

6 - TEST AND RESULTS

The purpose of system testing is ensuring the quality of a software system and performed on the entire system in the context of a Functional Requirements Specifications and System Requirements Specifications.
System testing tests not only the design, but also testing involves executing and implementation of the software with the test data, examine the output of the software and its operational and functional behavior to check that it is preforming as user's required.
Hence it is evident that testing is a crucial requirement of system development. Testing starts from the system design stage until the system is implemented in the real environment. This chapter reviews the process of system testing and the steps taken to validate and prepare a system for final implementation.

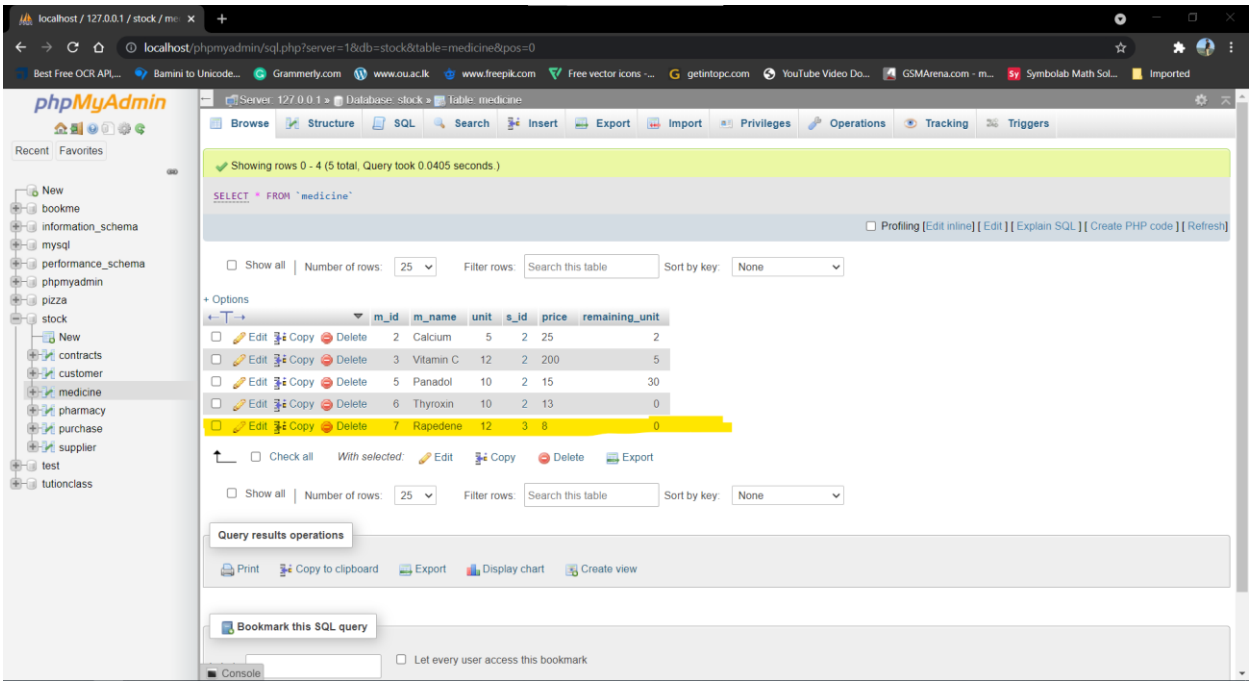
The developed system is tested against the requirements to make sure that the product is actually solving needs gathered during need analysis stage.
Various test approaches have been used. The test cases and the test results and Exceptions have been documented in this chapter.

6 - TEST AND RESULTS

- **Test Adding Medicine to the system**

```
C:\Windows\py.exe
----------Welcome to the Good Health Company----------
1.Pharmacy
2.Drugs (Medicine)
3.Purchase
4.Customer
5.Supplier
6.Contracts
7.Help
8.Exit
-----------------------------------------------------
Enter the number of your choice : 2
-----------------------------------------------------
-----------------------------------------------------
1.Add Medicine
2.Remove Medicine
3.View Medicine
4.Remaining Medicine List
5.Back To Menu
-----------------------------------------------------
Enter the number of your choice : 1
-----------------------------------------------------
----------Add Medicine----------
Enter the Medicine Name: Rapedene
Enter the Unit: 12
Enter the Supplier ID: 3
Enter the price of Medicine(per unit): 8
Medicine added Successfully
-----------------------------------------------------
```

- **Test results of Medicine to the system**



7 – CONCLUSION / DISCUSSION

The management system for Good Health which developed here is a very simple procedure. Though some complex method can be used, for the sake of simplicity we used this method.

The postive aspect of this system according to me, is the convenience in the usage of the software for anyone with or without a proper knowledge in the Technological field. Also it is easy to maintain this software.

Moreover it helped us to understand more on software architecture and its various quality attributes and related tactics on it. Also it reminded us, how Software Architecture plays a vital role in day to day life.

8 - REFERENCES

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