FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

UNIT CODE: **BBIT 04105 FINAL YEAR PROJECT I**

PROJECT TITLE: **MEDTRUST PHARMACY MANAGEMENT SYSTEM**

SOFTWARE DESIGN SPECIFICATION (SDS)

BY: **BETT EMMANUEL KIPYEGON**

REGNO: **20/03035**

Email: 2003035@students.kcau.ac.ke

SUPERVISOR: **GLADYS MANGE**

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Signatures

Student's name: Signature:

Bett Emmanuel Kipyegon

Supervisor's name: Signature:

Gladys Mange

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1. Introduction

1.1 Goals and objectives

The purpose of this SDS is to describe the architecture and system design of Pharmacy Management System. This will guide both the developers and the project manager in the process of software development. This document will also reflect the system's SRS that was submitted before by breaking down each use case or functional specification into detailed processes by means of different diagrams which will be shown in the succeeding sections of this document.

1.2 Statement of scope

This document gives a detailed description of the pharmacy management system is described by using related diagrams. It will be a management system that is designed to improve accuracy and to enhance safety and efficiency in MedTrust pharmacy. It is a computer-based system which helps the Pharmacist to improve inventory management, cost, medical safety etc. The system allows the admin to manually enter drug details upon arrival of new batches of drugs and upon drug movement out of the pharmacy for a certain period, e.g. every month, the user may want to generate report for the movement of drugs in and out of the pharmacy, getting information about the drugs e.g. expiry date, number of drug type left, location of a drug in the pharmacy. At present, manual system is being utilized in our client's pharmacy. It requires the pharmacist to manually monitor each drug that is available in the pharmacy. This usually leads to mistakes as the workload of the pharmacist increases.

1.3 Software Context

The development of a pharmacy management system will be a web-based application that allows the admin to handle products and medicine, categories, suppliers and they will have full control of the system. The employee panel, also known as the sales-person hub will provide a comprehensive view of the pharmacy system record through graphs and reports enabling data driven decisions.

1.4 Major Constraints

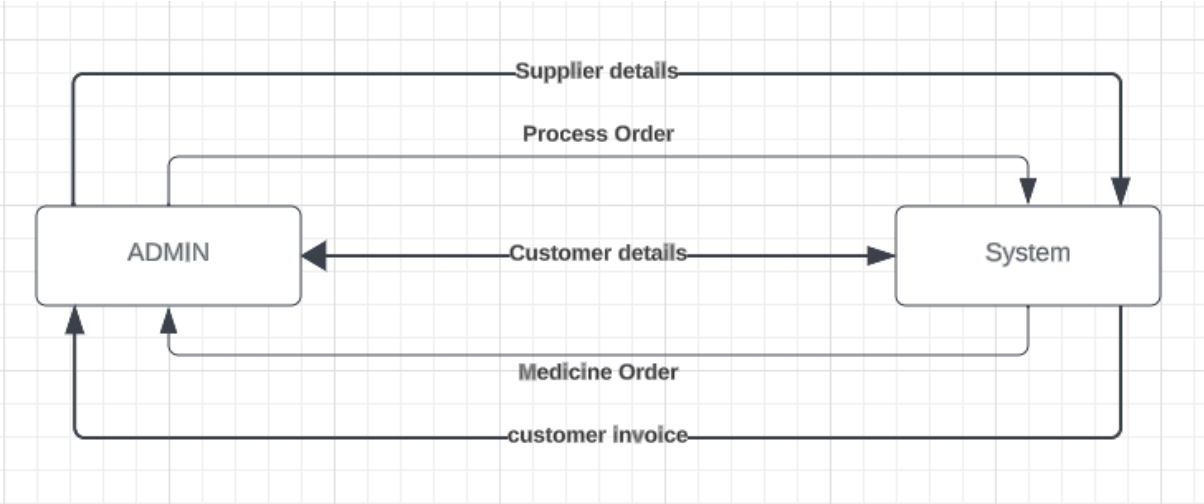
The major constraints are the use of the following:

1. Windows 7 and above
2. MySQL database
3. Wamp/Xamp server
4. PHP framework

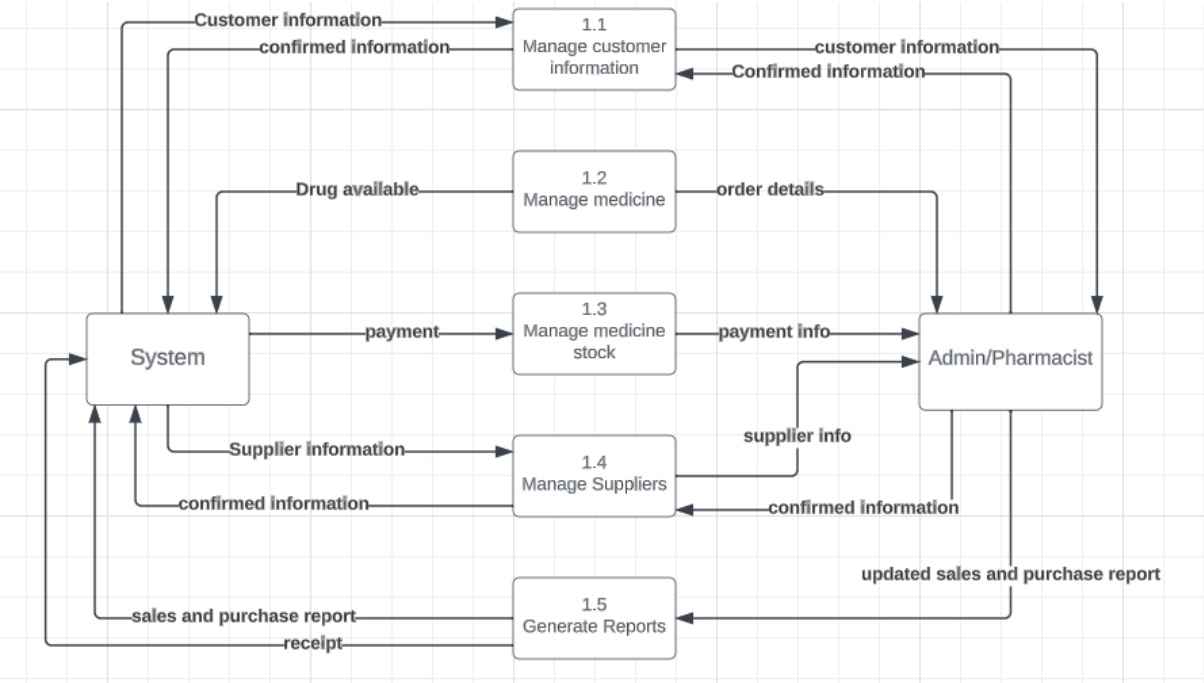
System Overview

Level 0 data flow diagram (DFD)

The flow diagram will describe Med Trust's Pharmacy management system this includes all user module who operate the system. Below is the data flow diagram of Medtrust's pharmacy management system which shows users who can operate the system.

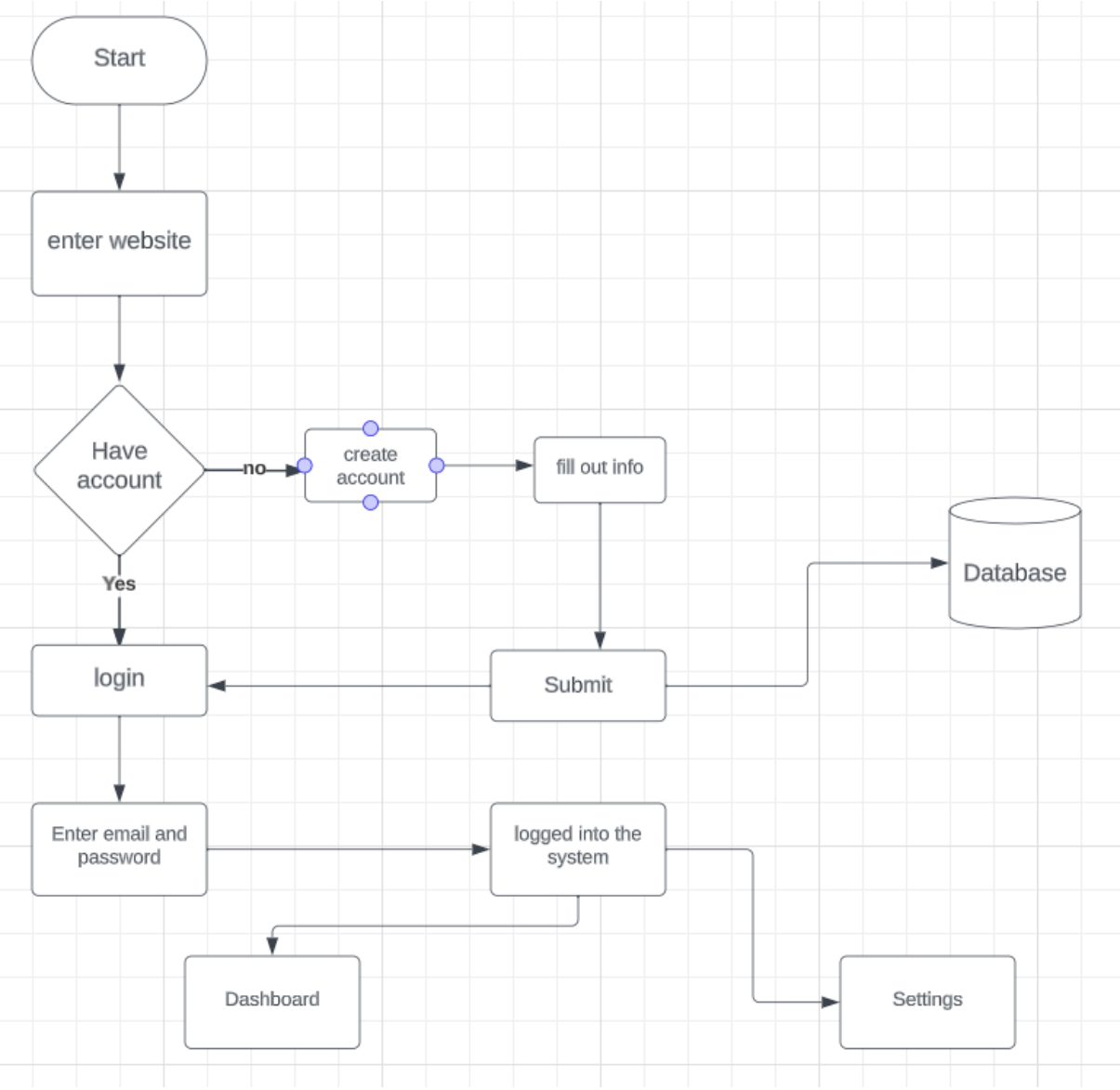


Level 1 Data flow diagram (DFD)



Software Design

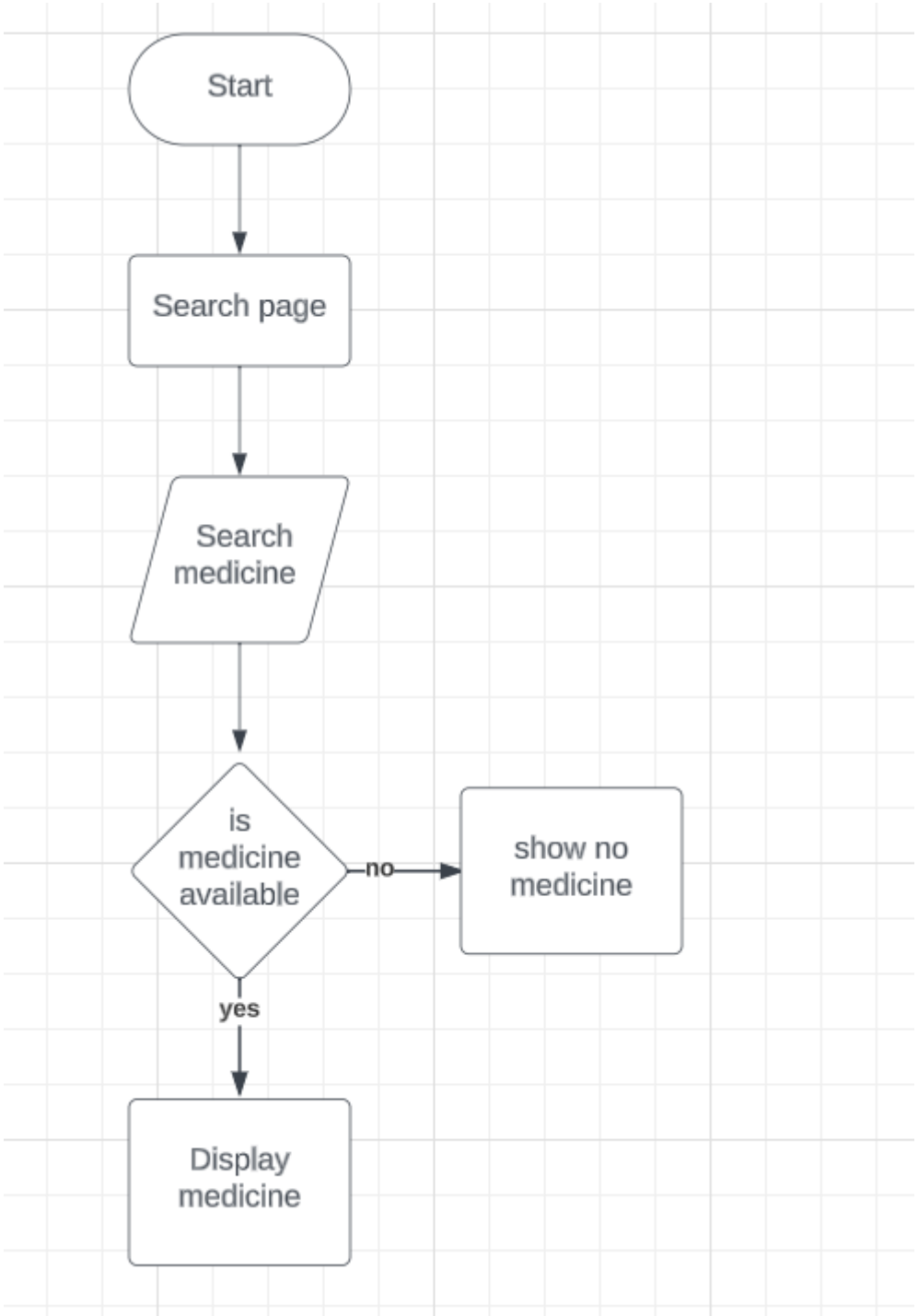
1. Authentication



Start

IF have an account THEN
DO Login
ELSE
DO Sign Up
DO fill in details
DO Sign Up
ENDIF
DO Browse dashboard
END

2. Search Medicine



START

Go to Medicine page

DO click search

DO Input

IF medicine is available

  Display medicine searched

ELSE medicine not available

  Does not show medicine and goes back to Search

ENDIF

END

2.0 Data Design

2.1 Internal Software data structure

Majority of the data passed between the components will be data type like string and integers

2.2 Global data structure

The global constructs are the data structures provided by php and html. Those include application setting and session structures. For the purposes of this application only session object will be used for temporary data storage

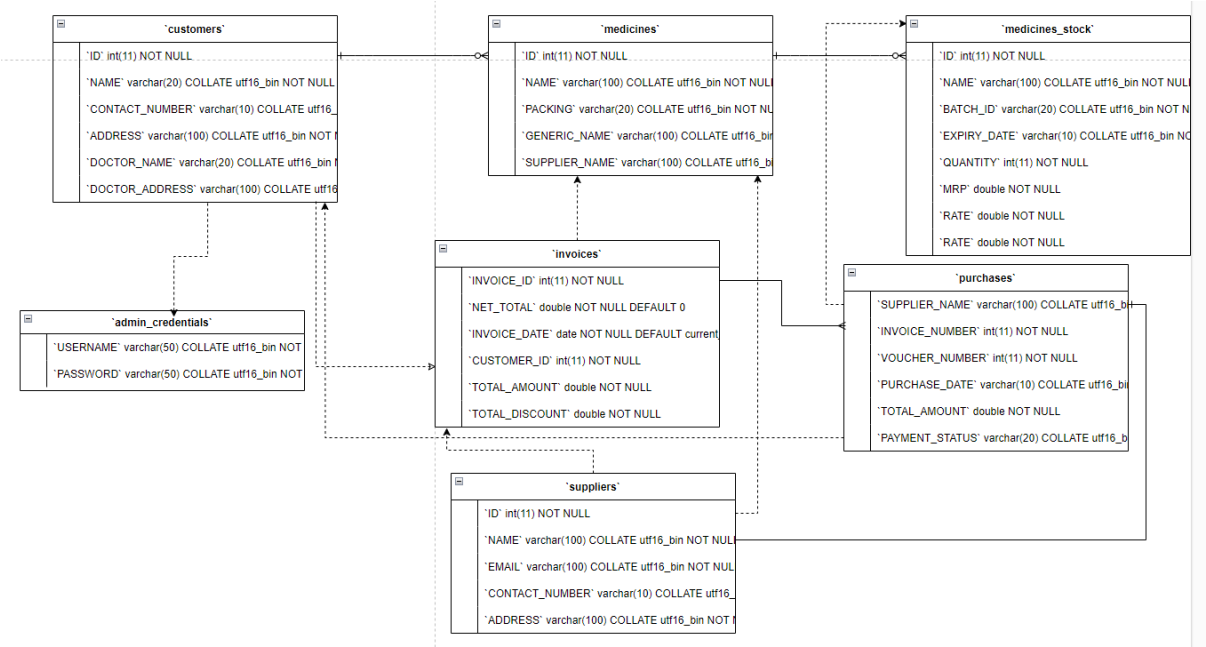
2.3 Temporary data structure

Datasets containing table (with rows) will be created by fetching data from database

2.4 Database description

Only one database will be created to support the pharmacy management system, the database has 7 tables; customers, invoices, medicines, medicine stock, purchases and suppliers

The database design is shown as below

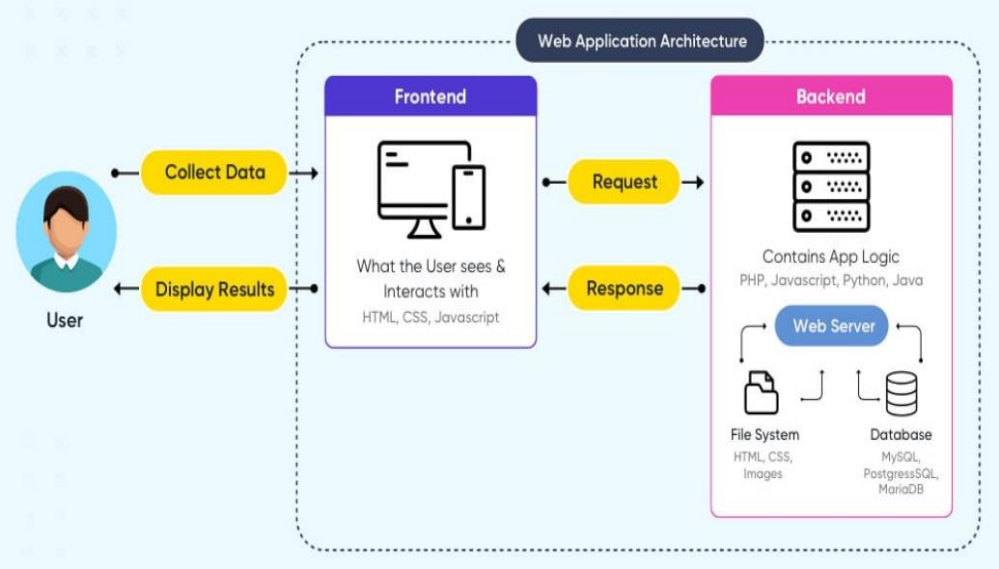


3.0 Architectural and component-level design

3.1 Program structure

The pharmacy management system is a basic web application therefore all application logic, except database communication, is embedded in the web pages themselves. The database interaction will be done using a DataAccess component.

3.1.1 Architecture Diagram



3.2 Description components

3.2.1 The Dashboard Component

This is the entry page of the pharmacy management system

3.2.2 Homepage interface description

This page is the main page from where the admin log in or sign up, it gives him a choice to choose the item to log in and go around the system

3.2.3 Main page processing detail

This page will only display dashboard and information about the sales made for the day, side menu to navigate other functionalities of the system, it will be a html page, no dynamic processing will take place.

3.2.1 Data Access Component

This will be the component responsible for all the database interactions. All other components (html pages) will use it for all their database calls

3.2.2 Data Access interface description

There will be two functions per table:

1. Update- performs all updates, inserts and deletes for a table
    a. input- data table which has rows for update
    b. Output- None
2. Select- Performs all data retrievals for a table
    a. Input- name of medicine or the generic name to be retrieved from the database.
    b. Output- dataset containing the data table which has the data that was searched for.

3.2.1 Admin Log In page component

This page will perform administrator's authentication for the pharmacy management system

3.2.2 Admin Log In Page interface

This page will perform one function Admin Authentication:

a) Input – Name (string variable) and password (string variable)

b) Output – home page if successful, 'wrong username or password' if not.

3.2.3 Admin Log In page processing detail

This page will display administrator's log in interface. After the information is filled in and the page is submitted, it will perform the administrator's authentication

3.2.1 Manage Medicine component

This page will display all the medicines that are in the database for the administrator of the pharmacy management system.

3.2.2 Manage medicine page interface.

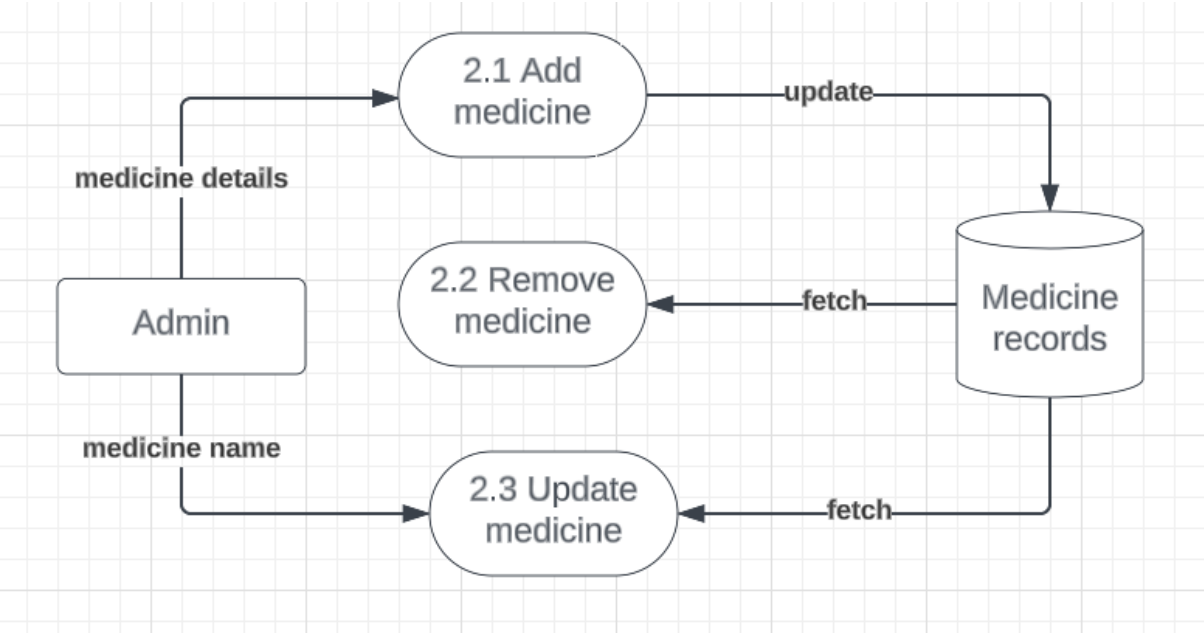
This page will perform the following functions

1. Show medicine:
    a. Input – None
    b. Output – List of all medicine from database
2. Add medicine:
    a. Input – drug name (string), generic name(string) and number of packing(int) and the supplier name(string)
    b. output – updated list of medicines in the database
3. Delete medicine
    a. Input – delete button from the medicine displayed.
    b. Output – updated list of medicine
4. Edit medicine
    a. Input – edit button from the medicine displayed.
    b. Output – updated list of medicine

3.2.3 Manage medicine page processing detail

This page will display the books for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to add, remove or edit the medicine. This button will move the administrator to the dialog boxes

Manage medicine DFD level 2



3.2.1 Manage customer component

This page will display all the users that are in the database for the administrator of the pharmacy management system.

3.2.2 Manage customer page interface.

This page will perform the following functions

1. Show customers:

    c. Input – None
    d. Output – List of all customers from database

2. Add customer:

    c. Input – customer name (string), contact (int), address(string) doctor's name(string) and the doctor's address(string)
    d. output – updated list of customers in the database

3. Delete customer:

    c. Input – delete button from the customer displayed.
    d. Output – updated list of customers

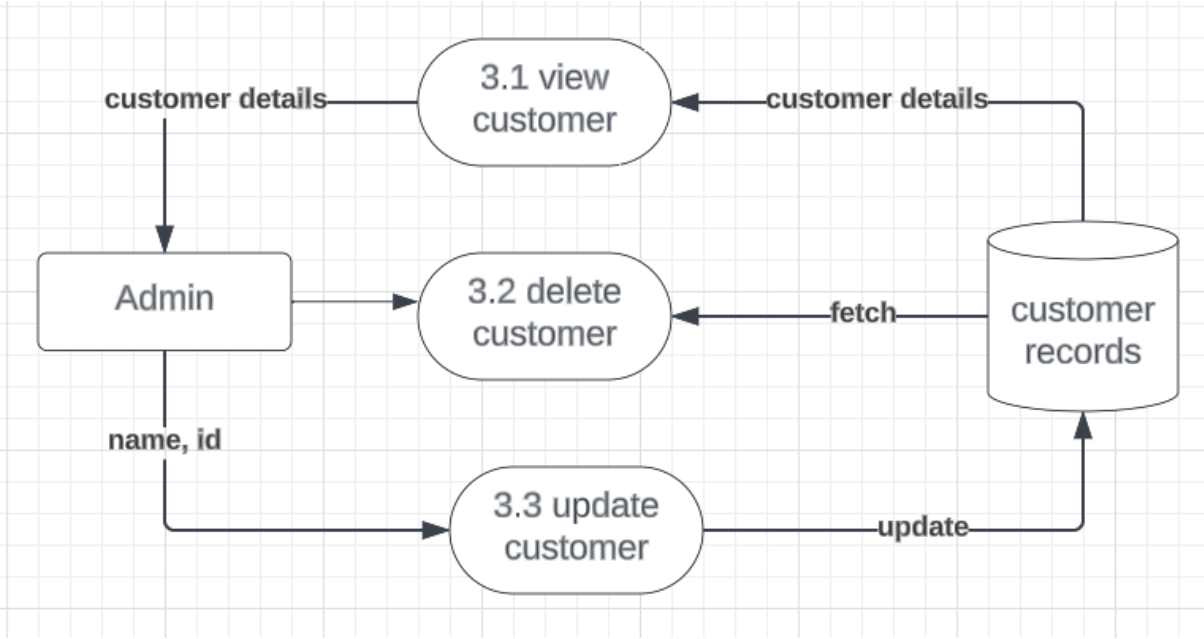
4. Edit customer:

    c. Input – edit button from the medicine displayed.
    d. Output – updated list of medicine

3.2.1 Manage user page processing detail

This page will display the list of customers for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to remove the customer from the database. This button will move the administrator to the dialog boxes

Manage customer DFD Level 2



3.2.1 Search medicine Page component

This page will display specified medicine details for the admin of the pharmacy management system.

3.2.2 Search medicine page interface.

This page will perform the following functions

1. Show medicines:

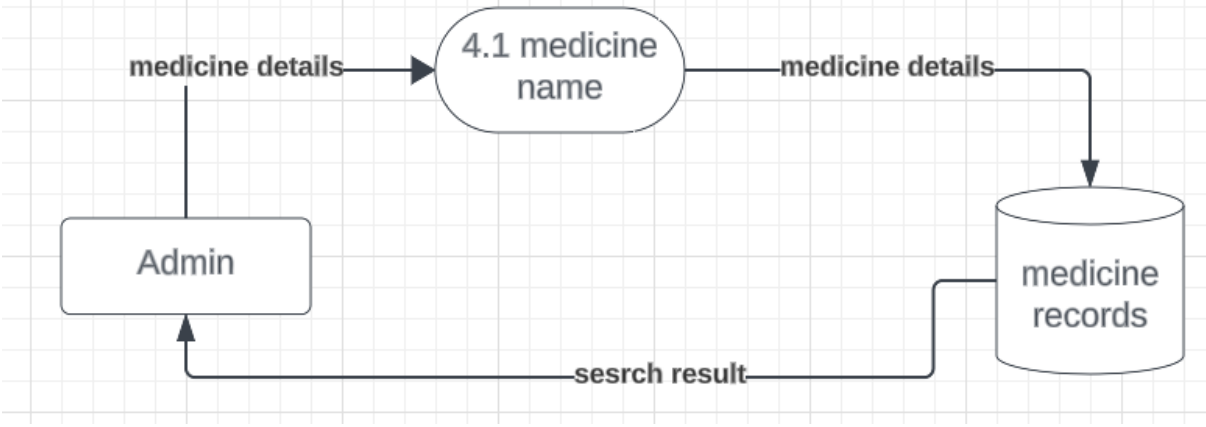
a) Input – medicine name or key word

b) Output – medicine details

3.2.3 Search medicine page processing detail

This page will display specified medicine details. Once the medicine information is display a button for ‘edit’ and ‘delete’ will be shown

Search medicine DFD Level2



3.2.1 Manage suppliers component

This page will display all the suppliers that are in the database for the administrator of the pharmacy management system.

3.2.2 Manage suppliers page interface.

This page will perform the following functions

1. Show suppliers:

    e. Input – None
    f. Output – List of all suppliers from database

2. Add supplier:

    e. Input – supplier name (string), email(string), contact (int), and address(string).
    f. output – updated list of suppliers in the database

3. Delete supplier:

    e. Input – delete button from the supplier displayed.
    f. Output – updated list of supplier

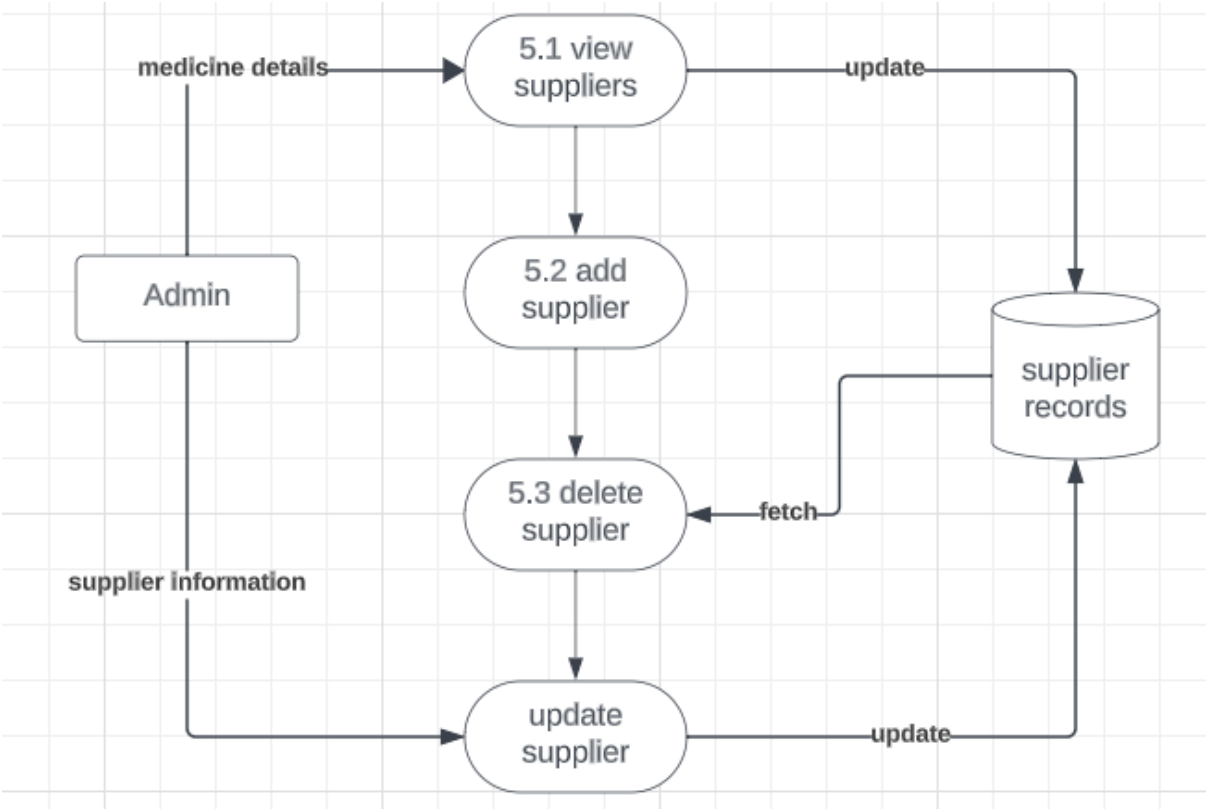
4. Edit supplier:

    e. Input – edit button from the supplier displayed.
    f. Output – updated list of suppliers

3.2.1 Manage supplier page processing detail

This page will display the list of supplier for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to remove the supplier from the database. This button will move the administrator to the dialog boxes

Manage customer DFD Level 2



3.2.1 Manage purchases component

This page will display all the purchases that are in the database for the administrator of the pharmacy management system.

3.2.2 Manage suppliers page interface.

This page will perform the following functions

1. Show purchases:

    g. Input – None
    h. Output – List of all purchases from database

2. Add purchase:

    g. Input – supplier name (string), invoice number(int), payment type (string), medicine name(string), packing(string), expiry date(int), market price(int), rate(int) and medicine generic name(string).
    h. output – updated list of purchases in the database

3. Delete purchase:

    g. Input – delete button from the purchase displayed.
    h. Output – updated list of purchases

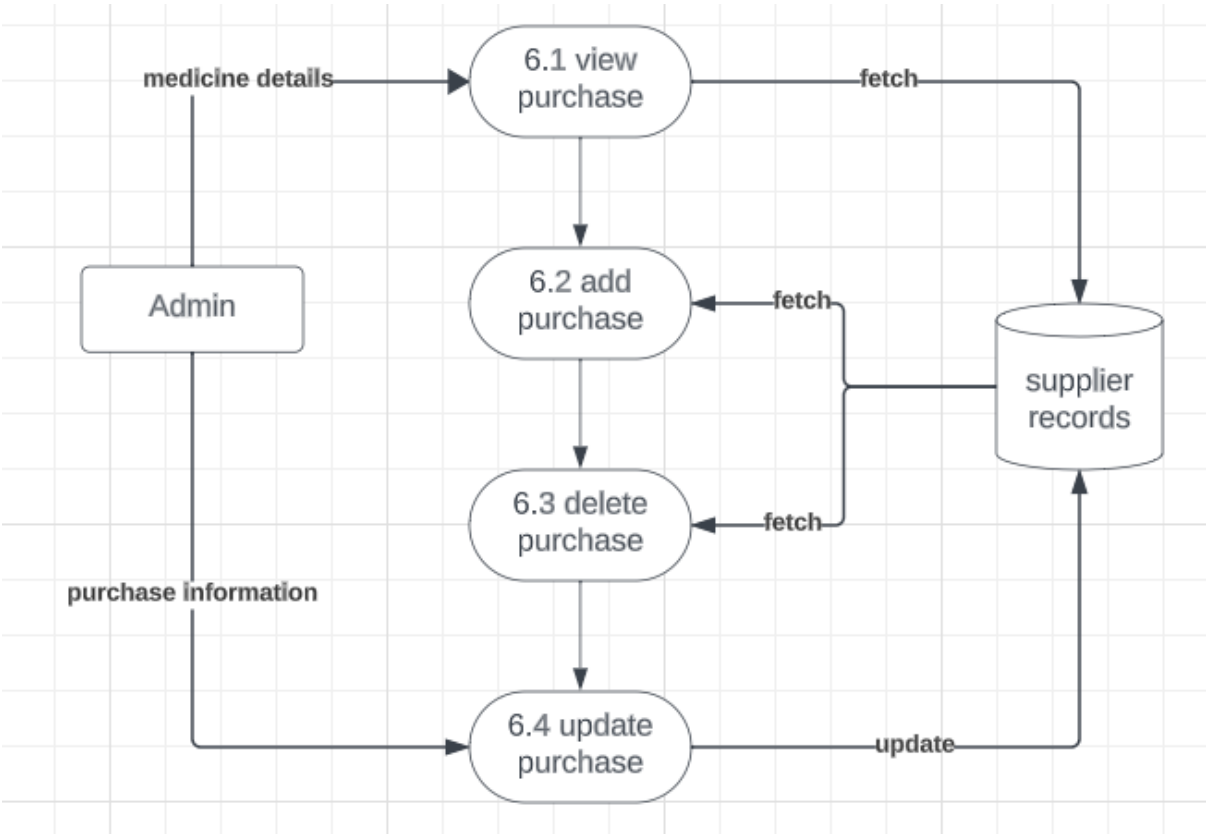
4. Edit purchases:

g. Input – edit button from the purchase displayed.
h. Output – updated list of purchase

3.2.1 Manage supplier page processing detail

This page will display the list of purchases for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to remove or edit the purchase from the database. This button will move the administrator to the dialog boxes

Manage purchases DFD Level 2



3.2.1 Manage invoice component

This page will display all the invoices that are in the database for the administrator of the pharmacy management system.

3.2.2 Manage suppliers page interface.

This page will perform the following functions

1. Show invoice:

i. Input – None
j. Output – List of all invoices from database

2. Add invoice:

i. Input – customer name (string), invoice number(int), payment type (string), medicine name(string), address(invoice), expiry date(int), market price(int), rate(int) and medicine generic name(string).
j. output – updated list of invoice in the database

3. Delete invoice:

i. Input – delete button from the invoice displayed.
j. Output – updated list of invoice

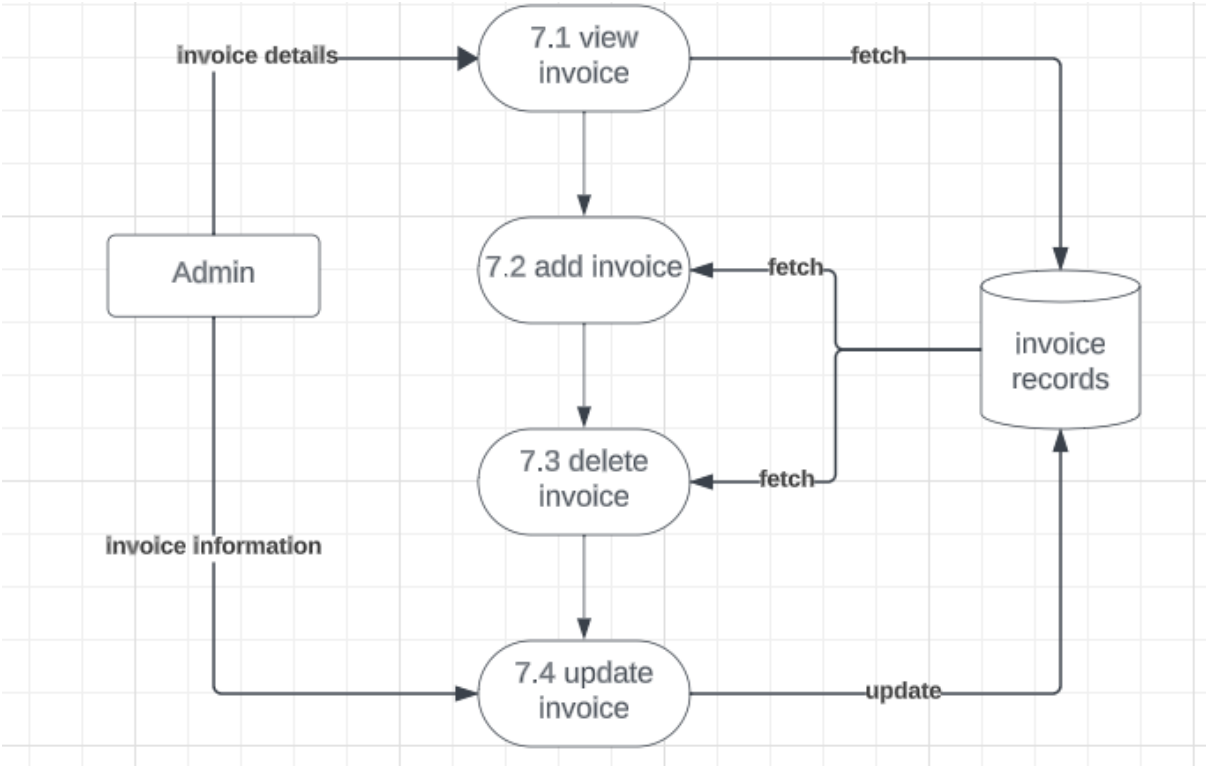
4. Edit invoice:

i. Input – edit button from the invoice displayed.
j. Output – updated list of invoice

3.2.1 Manage invoice page processing detail

This page will display the list of invoice for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to remove or edit the invoice from the database. This button will move the administrator to the dialog boxes

Manage invoice DFD Level 2



3.2.1 Report component

This page will display all the reports that are in the database for the administrator of the pharmacy management system.

3.2.2 Report page interface.

This page will perform the following functions

1. Show sales report:

    k. Input – None
    l. Output – List of all sales from database

2. Show purchase report:

    k. Input – none
    l. output – list of purchases in the database

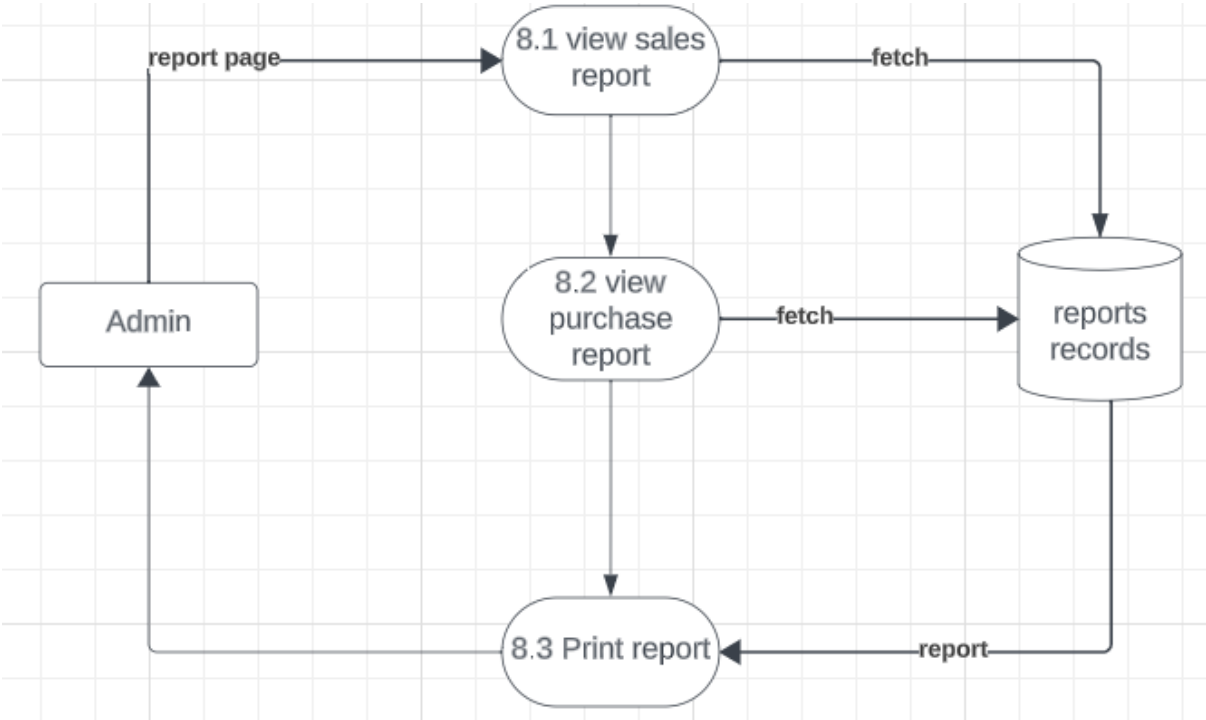
3. Print:

    k. Input – print button from the report displayed.
    l. Output – print the selected report

3.2.1 Report page processing detail

This page will display the list of reports for the pharmacy management system administrator. The administrator is given a set of buttons which allow him/her to print the report from the database. This button will move the administrator to the dialog boxes

Report page DFD Level 2



3.2.1 Admin profile page component

This page will display the administrators profile account

3.2.2 User profile page interface.

This page will perform the following functions

1. Show the pharmacy's name

a) Input – none

b) Output – pharmacy name, address, email and contact number

2. Edit the profile

a) Input – click edit button

b) Output – updated profile details

3.2.3 User profile page processing detail

This page will display the administrator's profile details.

3.3 Software Interface Description

3.3.1 External Machine Interface

<None>

3.3.2 External System Interfaces

<None>

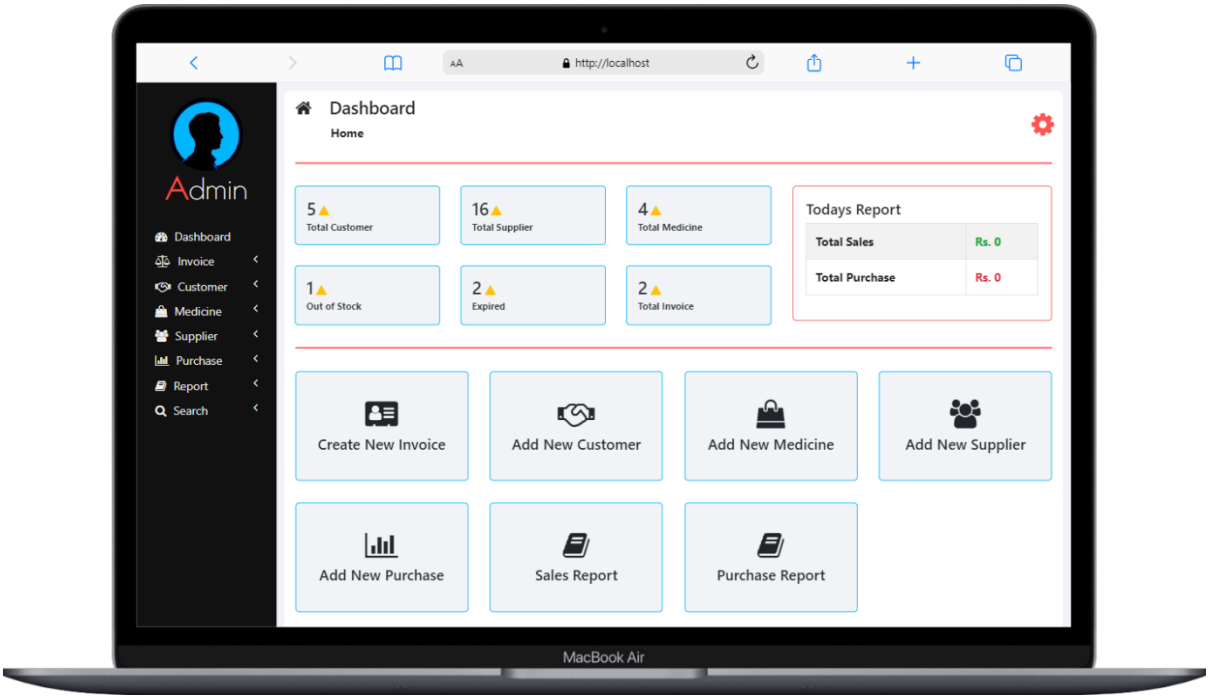
3.3.3 Human Interface

The graphical user interface for the pharmacy management system will be done in html. The display and interaction

a) System input interface design

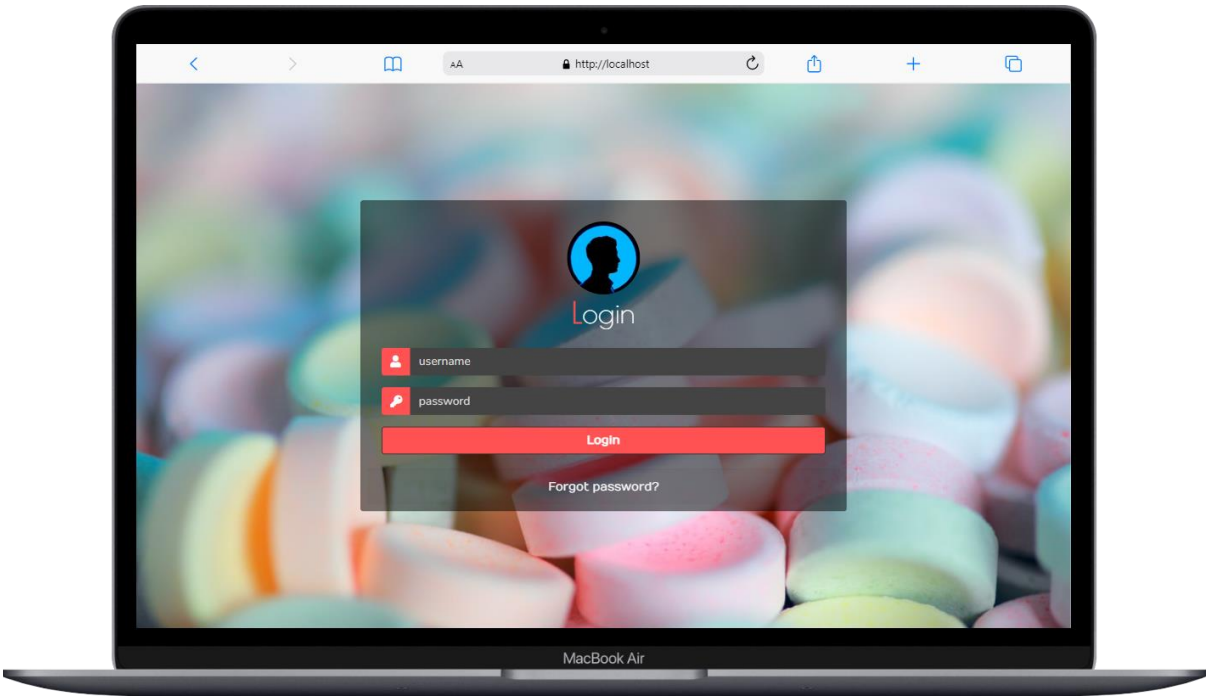
It shows how the pharmacy management system works, description of user interfaces, forms and reports used, specific programs, databases and files required, and system structure and component intervals**.**
Interface design defines how users navigate the system, such as menus and on-screen buttons.

1. Dashboard page



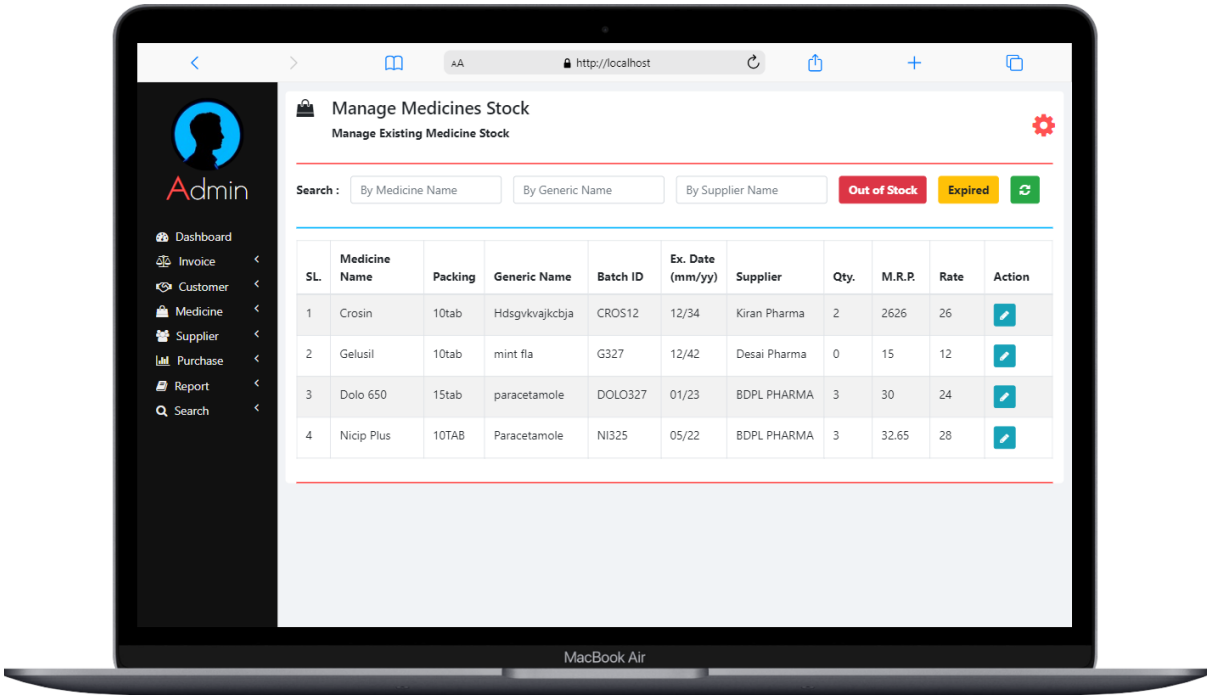
2. Log in page

Admin will Input their details and login in order to be able to access the system



b) System Output design

While searching for medicine the system will show the medicine that have the same keyword as searched



4.1.2 Objects and Actions

The **Administrator Login** page consists of:

- Id text box – the administrator writes his/her id, preferably e-mail address(string, max_length 20 characters)

- Password text box – the administrator writes his/her password (string, max_length (10 characters)

- Log in button – after being pressed the system performs user authentication. If the administrator inputs correct data, he/she gets the access to the system. Otherwise, the system displays Invalid/Missing data massage and clears the text boxes

The **Manage medicine List** page contains of:

- Medicine list - a list used to view the medicine list. The size of the list is dynamic

- Add medicine button – used to add a new medicine to the database.

- Delete medicine button - used to remove a medicine from the database.

- Edit medicine button – is used to edit medicine. The admin needs to select medicine from the list before editing it.

4.2 Interface Design rules

The pharmacy management system is web-based application, therefore its GUI consists of the set of webpages. The Graphical User Interface incorporates the following futures:

1. Accessibility :

- viewed by all browsers

- not accessible for people with disabilities

- fast possible load time by using reasonably small file size and reduced bandwidth

- searchable by most search engines

2. Longevity: the library management system GUI will last into the future. The idea is create a GUI whose changed won't destroy the entire design.

3. Price: - web pages are cheap to maintain and develop.

4. Design:

- interactive

- intuitive usable navigation

- standard medium size text

- use of good colors

- enough contrast between the background and the text.

- No flash animations

- Text and graphic based navigation

- Adjusted dimensions and resolution of graphical elements

- Images only as many as required.

5.0 Testing issues

5.1 Classes of tests

There will be two types of testing used unit testing and integration.

Unit Testing – white box testing

The system is build mostly of one main module – DataAccess, and many user interface modules – web pages. The DataAccess will be the main focus of unit testing.

Validation Testing – white/black box testing

The pharmacy management system being web-based application the main focus during validation testing will be on user-visible actions and user-recognizable output from the system.

5.2 Expected software response

Unit Testing:

The result of the add and edit book test cases can be directly verified against the database.

Validation Testing:

The results of the validation tests will be verified visually using the Software Interface Description part of the System Requirements Specification(SRS) document.

5.3 Performance bounds

No performance tests will be performed.

5.4 Identification of critical components

List of critical components: Book_Page, User_Log_in_page and Administrator_LogIn_Page.

References

- **http://www.w3schools.com/html/html_intro.asp**
- Web development and application development by Ivan Byross BPB publication
- http://www.w3schools.com/php/php_forms.asp
- http://www.w3schools.com/sql/sql_insert.asp
- Fundamentals of software engineering by Rajib mall, PHPlearning