

**SATA TECHNOLOGY AND BUSINESS COLLEGE**

**FACULITY OF INFORMATICS**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**Project Title: - Web Based Drug Stoke Management System for Arba Minch Nech Sar Primary Hospital**

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**A Senior Project proposal**

Submitted to Department of Computer Science and IT, SATA Technology and Business College, in partial fulfillment for the requirement of the Bachelors of Science Degree in Information Technology.

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Table of Contents

[Abstract vi](#_Toc131019562)

[Chapter One 1](#_Toc131019563)

[1. Introduction 1](#_Toc131019564)

[1.1 Background of the project 2](#_Toc131019565)

[1.2 Background of the Organization 2](#_Toc131019566)

[1.2.1 Mission 2](#_Toc131019567)

[1.2.2 Vision 2](#_Toc131019568)

[1.3 Team composition 3](#_Toc131019569)

[1.4 Tasks and Schedules 4](#_Toc131019570)

[1.5 Problem Statement 4](#_Toc131019571)

[1.6 Objective of the Project 4](#_Toc131019572)

[1.6.1 General Objective 4](#_Toc131019573)

[1.6.2 Specific Objectives 5](#_Toc131019574)

[1.7 Scope of the project 5](#_Toc131019575)

[1.8 Significance of the project 6](#_Toc131019576)

[1.9 Target Beneficiaries of the project 6](#_Toc131019577)

[1.10 Feasibility study 6](#_Toc131019578)

[1.10.1 Operational Feasibility 6](#_Toc131019579)

[1.10.2 Technical Feasibility 6](#_Toc131019580)

[1.10.3 Economic Feasibility 7](#_Toc131019581)

[1.10.4 Schedule Feasibility 7](#_Toc131019582)

[1.10.5 Economic Feasibility 7](#_Toc131019583)

[1.11 Methodology 8](#_Toc131019584)

[1.11.1 Fact Finding Techniques 8](#_Toc131019585)

[1.11.1.1 Primary Techniques 9](#_Toc131019586)

[1.11.1.2 Secondary Techniques 9](#_Toc131019587)

[1.11.2 System Analysis and Design 9](#_Toc131019588)

[1.11.3 Design and Implementation Methodology 9](#_Toc131019589)

[1.12 Development Tools 10](#_Toc131019590)

[1.13 Testing procedure 10](#_Toc131019591)

[1.14 Limitation of the project 11](#_Toc131019592)

[CHAPTER TWO 12](#_Toc131019593)

[DESCRIPTION OF EXISTING SYSTEM 12](#_Toc131019594)

[2.1 Overview of current system 12](#_Toc131019595)

[2.2 Major functions of current system 12](#_Toc131019596)

[2.3 Business rule of the current system 13](#_Toc131019597)

[2.4 Forms and other documents of the existing system 13](#_Toc131019598)

[2.4 Users of the current system 15](#_Toc131019599)

[2.5 Bottleneck of the current system 15](#_Toc131019600)

[Performance (Response time) 15](#_Toc131019601)

[Input and Output 15](#_Toc131019602)

[Security and Control 15](#_Toc131019603)

[Efficiency 15](#_Toc131019604)

[2.6 Practice to be preserved 15](#_Toc131019605)

[2.7 Proposed System Description 16](#_Toc131019606)

[2.8 Requirements of the Proposed System 16](#_Toc131019607)

[2.8.1 Functional Requirements 16](#_Toc131019608)

[Non-functional requirements 17](#_Toc131019609)

[References 18](#_Toc131019610)

***List of Tables***

[Table 1 team composition 4](#_Toc95742142)

[Table 2 task and schedule 5](#_Toc95742143)

[Table 3 economic feasibility 8](#_Toc95742144)

**LIST OF ABBREVIATED WORDS**

|  |  |
| --- | --- |
| Word | Description |
| RF | Registration Form |
| ODMS | Online Drugstoke Management System |
| UI | User interface |
| DMS | Drugstore Management System |
| HTTP | Hypertext transfer protocol |
| PHP | Preprocessor hypertext |
| SQL | Structured query language |
| HTML | Hypertext markup language |
| LAN | Local area network |
| JS | JavaScript |
| DB | Database |
| RAM | Random access memory |
| CD | Compact disk |

# Abstract

Nech Sar Primary Hospital is one of the primary hospitals in Arba Minch that is targeting to give quality service regarding to the health. This project is done in Nech Sar Primary Hospital drug store. This document contains the brief description of background information of the hospital and project, method of data collection and analysis, description of the existing system and modeling and design of the proposed system.

**This current drug stoke management system that is in Nech Sar Primary hospital has a lot of problem since manual system is used. Due to this** we are going to develop online system to support drug stoke management which means information related to the drug are maintained and manipulated easily.

# Chapter One

# Introduction

A drug stoke information management system whose primary goal is to manage the movement and storage information of drug within Nech Sar Primary Hospital which is founded in Arba Minch city, and handle the connected transactions is a main part of the supply chain. Drug stoke management system also manages the medicine based on real-time information about the status of products and storage locations. The proposed system will solve many problems that affect the efficiency and effectiveness of the hospital. Problems such as difficulty to know available drug in store, security problem related to manual information recording, difficulty to identify drug which are near to expire date; there is challenge for pharmacist to order drug from drug store it is time consuming. Therefore the system that we propose will fix this problem through providing online access to manage drug stoke. It also improves the process of recording medicine detail and has security for protecting the data from unauthorized access. In addition to this it generate different report related with supplying drug to system users.

An analysis has been done based on the current manual system and all the problems statements and requirements have been identified. Moreover, drug stoke management system is three tier architecture systems which involve client tier, application tier or business tier and database management tier. More recently, the drug store management is focused on storing stock information such as types of medicines, price, medication review and drug information. Currently, to keep track on purchasing transaction such as stock and order information, manual recording system is used by the store manager. In case of that, the Drug Store Management System (DSMS) will be developed based on the manual system in the real situation of hospital. The interfaces for system will be designed according to the requirement. This Drug Store Management System, (DSMS) will help to improve the performance of current situation and overcome the problems that arise in Abrham pharmacy.

# Background of the project

Most of the drug store nowadays, likes to use file system because it is a traditional way and peoples are comfort with that way. But today, the technologies has changes a lot and because of that almost all the application in the world prefer to use computer as their stored information place. More recently, the drug store management is focused on storing stock information such as types of medicines, price, medication review and drug information. Currently, to keep track on purchasing transaction such as stock and order information, manual recording system is used by the store manager. In case of that, the Drug Store Management System (DSMS) will be developed based on the manual system in the real situation of hospital. Furthermore, it is a web based application where user must open a web browser such as Internet Explorer or Mozilla Firefox in their computer and type the address of this Drug Store Management System in the address bar of the web browser. This system has security issues such as the validation for username and password to prevent the intruder from entering the system. This application will be using Hypertext PreProcessor (PHP), Apache HTTP Server and MySQL as the database.

# Background of the Organization

## Mission

Our mission is to improve our society’s health and combating disease potential by giving quality, inclusive and wide reachable service.

## Vision

Our Vision is seeing healthy, producible and prosperous citizen.

# Team composition

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project Title** | **WEB BASED DRUG STORE MANAGEMENT SYSTEM FOR ARBA MINCH NECH SAR PRIMARY HOSPITAL** | | | | |
| **Prepared by** | **No** | **Name** | **ID** | **E-mail** | **Responsibility** |
| 1 |  |  |  | Participate in all requirement elicitation. |
| 2 |  |  |  | Participate in system design |
| 3 |  |  |  | Participate in database design |
| 4 |  |  |  | Participate in coding and system testing |
| 5 |  |  |  | Participate in coding and system testing. |

# Tasks and Schedules

Table task and schedule

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Tasks/Time | Mar | Apr | | May | Jun | Jul | Aug | |
| 1 | System proposal |  |  | |  |  |  |  | |
| 2 | System Requirement Specification |  |  | |  |  |  |  | |
| 3 | System Design |  |  | | |  |  |  | |
| 4 | Implementation Phase |  |  |  | |  |  | |  |
|  |  |  |  |  | |  |  | |  |

# Problem Statement

Drug store management has kept paper record in filing cabinets. Managing a very large drug store with records on papers will be tedious and boring. In addition to this it is difficult to keep track of inventories with regards to the drugs in the store, expiry date, and quantity of drugs available based on the categories and their functions and pharmacist has to order drugs to replenish the already diminishing stock, ordering of drugs is being carried out manually. As a result significant amount of time is allocated for writing, searching and processing the order of drugs. Furthermore, the manual system is prone to catastrophic frailer such as fire and flood.

# Objective of the Project

### General Objective

The general objective of the project is to develop web based drug store management system for Abraham pharmacy.

### Specific Objectives

The specific objectives of our project are objectives that we have to follow to reach the final or general objective of our project. To achieve the above general objective the proposed system has the following specific objectives. These are

* + To collect and analyze system requirements
  + To design the proposed system
  + To implement the proposed system
  + To test the system
  + To deploy the proposed system

# Scope of the project

The focus of this project is on Drug Store Management System (DSMS) which is web based system for Nech Sar Primary Hospital that manages the order of drug and medicine information. The system has three end users such as administrator, manager, and pharmacist. The project we try to develop will perform the following activity.

* + Provide for mass storage of relevant data.
  + Make access to the data easy for the user.
  + Provide prompt response to user requests for data.
  + Making modifications to the database available immediately.
  + Allow for multiple users to be active at one time.
  + The system can add, update or delete the medicine information.
  + Protect the data from physical harm and unauthorized access.
  + All transactions made are stored in the system to allow record keeping.
  + Generate medicine report.
  + Generate purchase report of medicine.
  + The system allows adding, updating or deleting users.
  + Give alerts about nearby expiration dates

# Significance of the project

At the end of the project the System will have much Significance for user of the system. This system helps the drug store management system by making simple, reliable, and convenient through one integrated system. It will also help the pharmacist of the hospital by saving their time. In addition, this project is better compared to manual system which using files system to keep the purchase record. It is because of the security issues that is implemented in this system will help to increase security level in maintaining the records information in cloud. Besides that, in terms of accessibility the data will be remains save because of the different level of users had been applied in this project.

# Target Beneficiaries of the project

* For the managers of the drug
* For the employee of hospital
* For the user of the hospital.

# Feasibility study

## Operational Feasibility

Our project can meet the requirement of the client. It determines the efforts that we have spent on the project, and it will be easily adoptable for the end users. Because of it is easy to implement and learn. It might not be possible to see fully operational system within the given limit of time for Software development. However with great cooperation of the project team we will try to develop the system can give over all function for users.

## Technical Feasibility

To develop this project we use some operating systems and web browsers and to store data permanently we use database and some query languages and programming languages.

Usually new systems established in order to overcome the technical illness of the previous system. In the same way, this system is technically big enough to be applied easily to the problem identified in the existing system. Therefore, it can be concluded that the system is technically feasible.

## **Economic Feasibility**

As we mention earlier we use simply hardware and software for developing and deploying this system are highly available and can be owned with small cost, the system is economically feasible. Simply we use desk top or laptop and these are easily accessible.

Table economic feasibility

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Quantity** | **Approximate cost** | **Specification** |
| Laptop Computer | 1 | 1\*32,000=32,000 birr | HP CORE i5 |
| Flash | 1 | 300 birr | 1. B |

## Schedule Feasibility

A project will fail if it takes too long to be completed before it is useful. Typically, this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Schedule feasibility is a measure of how reasonable the project timetable is. This project is feasible because it will complete within the time schedule given in table 2.

## Economic Feasibility

The system we will develop is economically feasible and the benefit is outweighing the cost. Since the system is changed into online system. Generally the system we developed for Arba Minch Nech Sar Hospital will bring a number of Tangible and intangible benefits.

* + - 1. **Tangible benefits**

The tangible benefit of our proposed system is based on measurable benefit. Our system reduces some outcome cost. The manual system of hospital uses more paper, pen and other materials. To store the data/information of user they use paper. In the present time to update the information after once recorded they use another paper. This is cost consuming. When our system is successfully completed, it will use to manage drug stoke online and it will reduces paper coast, time to store search for drug and etc

In case of our proposed system we divided the tangible benefit in to two ways as follows.

**One-time cost**

* The cost paid for system designers and system analysts
* The cost of Software to be acquired to build and run the system
* The cost to buy server.

**Recurring cost**

* The cost to maintain computers, database and server if there is problem with them.
* Salary of system administrator
* The cost to give training for system end users on how to use the system.
  + - 1. **Intangible benefits**

The Intangible is recognized as a value that clearly exist but not quantifiable. The system we will develop has many intangible benefits that revolve around mental satisfaction of users of this system. These are:

* Increasing the competitiveness of the hospital.
* Faster decision making in organization.
* Facilitating information processing of organization system.

# Methodology

## Fact Finding Techniques

The methods and techniques we use to analyze the existing system and designing web based system includes, interview, document analysis and practical observation. Those methods which help us to gather the required data to analyze our project and those methods selected due to the time and the organization’s willingness.

### Primary Techniques

* + **Interview**

To get information, we conducted with concerned staff of Nech Sar Primay Hospital of Arba Minch city to get general information. We asked the Manager of drug store at 03/6/2015 E.C about that drug store information when we wanted to write this proposal.

* + **Practical Observation**

It helps us to get real information how the drug store is managed and this helps to strength the data that gathered through interview and document analysis.

### Secondary Techniques

* + **Document Analysis**

This technique provides information on how the existing system works. Therefore documents related to the existing system of the drug store management will be assessed.

## System Analysis and Design

The methodology will be employed for our project is **object oriented approach**. This approach as it combined data and process together into objects. The object could be the redefine and reexamined to meet system requirement. The advantage of reusability is additional asset towards this approach. More clearly object oriented analysis and design approach becomes the current practice and trend since it is easy for the user to use the system without knowing the details of functions.

## Design and Implementation Methodology

The design methodology will used in the proposed system is parallel as a result of the fact that parallel methods support the use of the proposed system side by side with the existing system in order to test for the system efficiency. Top down approach is used as well in the design because it allows the analysis of the system to be carried out one after the other. In this stage, the first goal will be decided by task analysis. Next, the prototype of the system will be analyzed. Then test will be made on its usability and design with some design theories. Thus the prototype will be correspondingly looked at. Then a more complete prototype will be tested by potential users to collect feedbacks. Finally, the system will be finalized with the amendment on some problems of the user interface.

# Development Tools

|  |  |
| --- | --- |
| **Activities** | **Tools/ Programs** |
| Client side coding | HTML |
| Client side scripting | JavaScript |
| Platform | MS Windows or Linux |
| Database server | MySQL |
| Web server | Apache |
| Server-side scripting | PHP |
| Browsers | IE 5.5/6.0/7.0, Mozilla Firefox 35.0. |
| Editors | Sublime Text, notepad++ |
| Documentation | MS Word, MS Excel |
| User Training | MS PowerPoint, Video Player |

# Testing procedure

The aim of the system testing process was to determine all defects in our project .The program was subjected to a set of test inputs and various observations were made and based on these observations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing.

* **Unit testing**

Unit testing is undertaken when a module has been created and successfully reviewed .In order to test a single module we need to provide a complete environment i.e. besides the module we would require.

* The procedures belonging to other modules that the module under test calls
* Non local data structures that module accesses
* A procedure to call the functions of the module under test with appropriate parameters
* **Integration testing**

In this type of testing we test various integration of the project module by providing the input .The primary objective is to test the module interfaces in order to ensure that no errors are occurring when one module invokes the other module.

# **Limitation of the project**

Limitation of this project is

* Interface language is only limited to English language.
* The system doesn’t support online drug shopping.

# CHAPTER TWO

# DESCRIPTION OF EXISTING SYSTEM

## 2.1 Overview of current system

Arba Minch Nech Sar Primary Hospital drugstore is using manual system. Registration of new medicine as well as search for existing medicine record also paper based. The patient arrives at the hospital and he/she will provide his /her information (name, id, age) and he/she will be given a card. There is also another card (chart) that contains the patient information and the report of the treatment.

If the drugstore department wanted to know the drug, they can found the data through manual system and all drugs information were recorded in file. In addition to this pharmacist always does the common mistake such as making multiple orders for the same product:

* No alert message to remind for the critical quantity of each drug.
* No alert message to remind for the expired data of each drug.
* No automated process to manipulate data such as add, delete and searching record.

## 2.2 Major functions of current system

Major function of the existing system of Arba Minch Nech Sar Hospital drugstore management system involves lots and lots of paper work. The system involves that all user details will be taken on a white and black method. To get prescribed drug the pharmacist in clinic have to go there and view the information of available medicine and can actually contact the store keeper for further information. In addition to this the pharmacist prescribes drugs to patient by seeing the paper written by doctor or nurse. Manager can view report prepared on paper which may have false report and may contain error.

## 2.3 Business rule of the current system

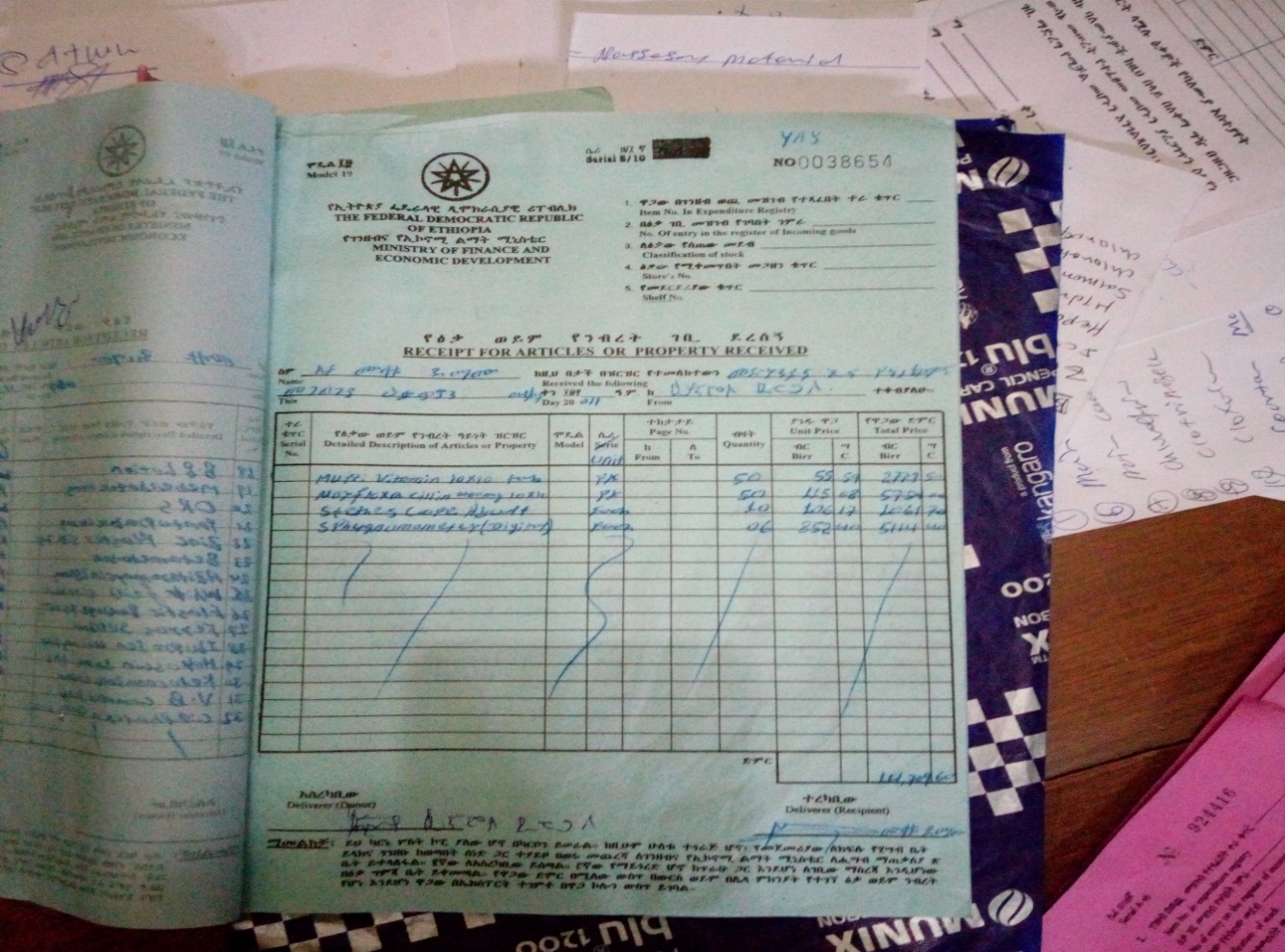
**Br1**: Only the patients who have card (registered) can take the service.

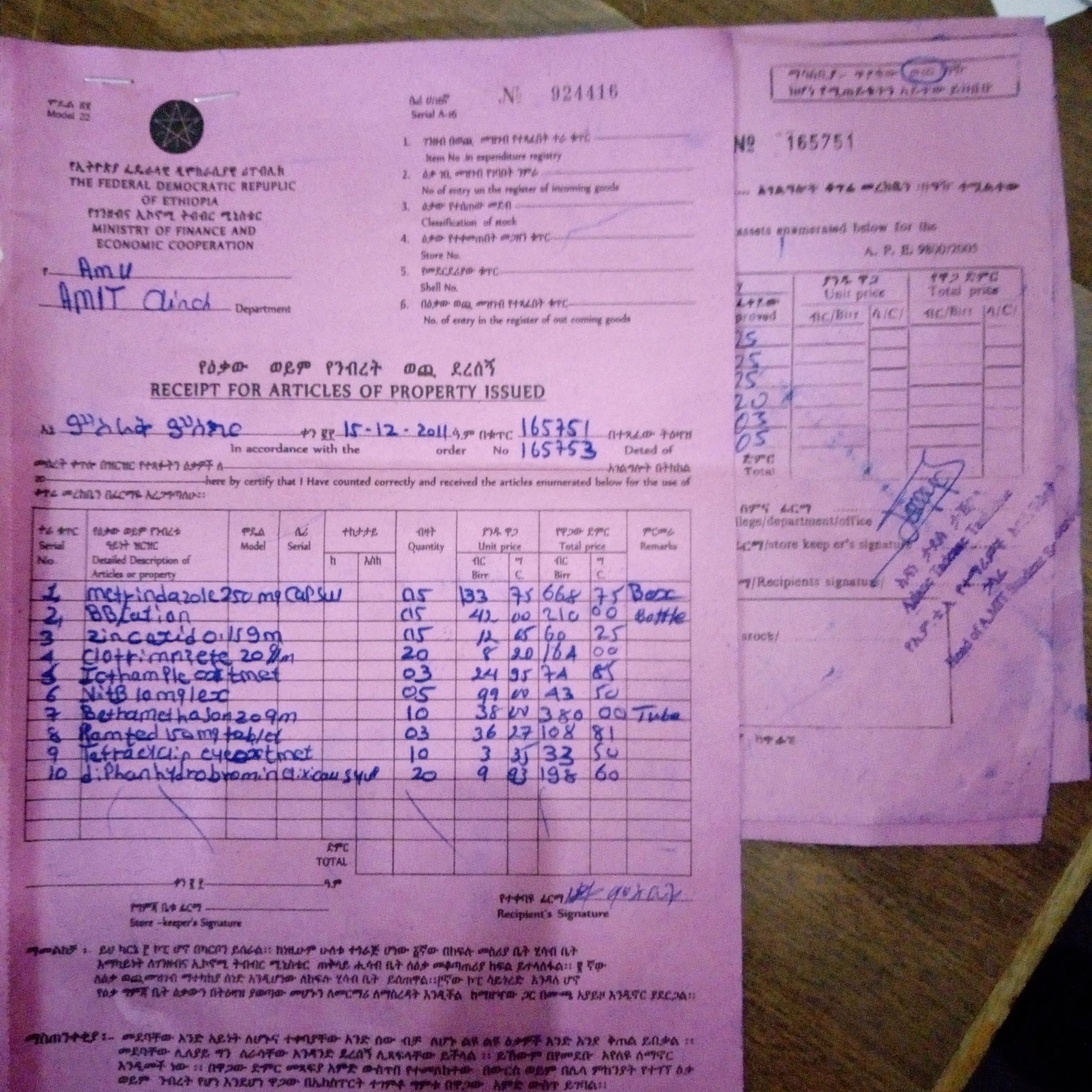
**Br2**: To get card or to register the patient should have to pay manually.

**BR3**: Need to be physically present at the hospital.

**Br4**: The Receptionist should have to record patient’s data on paper.

## Forms and other documents of the existing system





## 2.4 Users of the current system

The main users that are involved in the system are:

* **Manager/store keeper:** is the one who manages and control hospital drugstore and also responsible for prepare report and provide it for responsible person.
* **Pharmacist:** provide drug for patient based on doctor prescription and generate drugstore report.
* **Patient:** The patient can be defined as the actor that will receive services from the hospital.

## 2.5 Bottleneck of the current system

## Performance (Response time)

In terms of performance, the existing/manual system is not as satisfactory because it is slow/time consuming, energy consuming and does not support searching for available medicines, adding or updating new or added medicine automatically

## Input and Output

As the existing system is manual, the redundant, inaccurate data can be registered on the paper. For example one medicine can be registered more than one or its name can be spelt in correctly and it is hard to update because all the information are recorded in the paper.

## Security and Control

Since every record of the patient and medicine is stored manually, therefore it is difficult to control and secure these manual files/data. The files stored physically if they damaged by catastrophic failures such as fire or flood or by theft there is no backup. The existing manual system is not secure there is no authentication mechanism for documenting information.

## Efficiency

It is daunting to identify expired and scarce drugs if there is much many drags in the store. It is also difficult to how many drags are subscribed for how many users per day, week, month or year.

## 2.6 Practice to be preserved

The main activities that are performed in the manual system will be transferred by designing the corresponding simulation of those activities. Each activity that is transferred to the system are designed and automated to achieve the best functionality. The admin can control the overall activity in the system. Manager, pharmacist and patients are governed by the business rule.

## 2.7 Proposed System Description

This new system removes the existing problems which usually occurred in the clinics. The major purpose of the new system is to manage drag store via web app.

**The proposed system provides the following solution:**

* This system is faster.
* It has user friendly interface.
* Allows storing medicine and patient data in database
* Allows searching for medicine and patient data
* It alerts expired medicines.
* It alerts scarce medicines.
* Automated report generator.
* Data backup and secure the service through authentication.

## 2.8 Requirements of the Proposed System

## 2.8.1 Functional Requirements

The functional requirements focus on the main functions that the new application system will provide. The major functional requirements of our proposed system are the following:

* Register users (create account).
* Record / register data related to drug, pharmacist, and manager.
* Validate data
* Verify and authenticate users.
* Arrange medicine in their category.
* Show pharmacist, patient, manager and admin information
* Allows updating the necessary information.
* Allows checking the availability of the drug.
* The system should allow to update the necessary information
* The system should check expired date of the drugs and show expired medicine
* Allows the administrator to control the site
* The system accept comment from user
* The system should generate report

## Non-functional requirements

Non-Functional requirement explains and describes the user visible aspects of the system. The following lists states the non-functional requirements. Constraints on the services or functions offered by the system such as timing constraints, constraints on the development process, standards, etc.

* **Availability:** The new proposed system must be available to the intended users 24h per day.
* **Performance:** The proposed system should respond within a short period of time. It depends on the performance of the hardware environment such as RAM and processor.
* **Maintainability:** The new and proposed system should be maintainable because of the interaction between subsystems will be loosely couple and the interaction between classes and operations will be highly cohered, changes made on our new system such as adding other functionality shouldn’t affect the existing functionality of the system.
* **Reliability:** The new proposed system is reliable with respect to error occurrence. Validate user input on Forms information or data before submitting to database.
* **Security:** On our new proposed system each user is required to enter an individual username, user type and password when accessing the software. User must login form with valid information. Only registered students are filling the form. The time student access is limited. And the administrator has the option of increasing the level of password security.
* **Error handling**: When the user interacts to the new proposed system error may appear. In addition to operating system error handling mechanism we use exception handler during implementation, input validation mechanism. To control this inaccuracy the system will generate different message. It protects unexpected input through java script validation before input submitted to database. System display error message if the user invalid character. Submit data in proper character.
* **Help and support**: The new proposed system has help menu to make system more user friendly and easy to use.
* **User interface:** The developed system provide web application system user interface that are compatible with any platform and user friendly. The user who navigates to other interface of the system to retrieve the collection of the system is also expected to know basic understanding of on how to use it.

**CHAPTER THREE**

**PROPOSED SYSTEM ANALYSIS**

## Overview of proposed system

The web based drugstore management system is to be developed to minimize the problem of current system as it described in the drawback back of current system on previous chapter which describe existing system. The new proposed system should be effective at the time of registration, update, search, and generate report. In the proposed system analysis phase the document we stated describes the functionalities of the system in terms of use case from the users’ point of view. But in the design phase those functionalities of the system shall be decomposed into smaller sub system to easily handle by developer. Medicine registration system provides away for the physician and the manager to keep the medicine information. The system follows client server architecture. There is a centralized database, saving different data that are used to manage service of the student clinic.

## System Requirement Specification (SRS)

### Use Case Model

A use-case model is a model of how different types of users interact with the system to solve a problem.  As such, it describes the goals of the users, the interactions between the users and the system, and the required behavior of the system in satisfying these goals. A use-case model consists of a number of model elements.  The most important model elements are: use cases, actors and the relationships between them.

### Use case diagram

A use case diagram illustrates a set of use cases for a system, the actors of these use cases, the relations between the actors and these use cases, and the relations among the use cases. The UML notation for a use case diagram is shown on the figure, in which

* An oval represents a use case,
* A stick figure represents an actor,
* A line between an actor and a use case represents that the actor initiates and/or participates in the process.

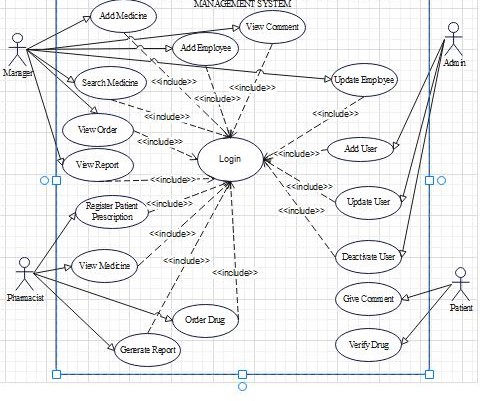
**Actors of the system:** The following are the identified actors (users) that will be participating in the system.

* Manager, Admin, Pharmacist and patient.

**Use Case Identification:** We identified the following use cases:

1. Login
2. Register new medicine
3. Search medicine information
4. Register patient prescription
5. Update employee information
6. Create user account
7. Delete user account
8. Produce medicine report
9. Produce purchase report
10. Delete expired medicine
11. View medicine
12. Order medicine
13. Give comment
14. View comment

Use case diagram



### Use case of documentation (for each case identified)

The following successive tables show the use case documentation for each of the use cases that has been identified in the above use case diagram. Each table contains the use case name, the actor which initiates and interacts with the use case, description of each use case and typical course of event that show the interaction between the actor and the use case which enable the team easily depict the function of the proposed system.

1. The use case documentation for Login

|  |  |  |
| --- | --- | --- |
| Use case name | Login | |
| Actor | Manager, Administrator, pharmacist | |
| Description | This use case describes the process of submitting user name and password to the database | |
| Precondition | User should have username and password or he/she should be a member of the system | |
| Post condition | The user is authenticated and the system displays all features available for the user with their role is associated. | |
| Basic course of Action | Action | System |
| Step1: users should click login button  Step 3: Users should fill login detail and submit it to the database | Ste2: system redirect to the Login page  Step4: System checks the user ID and Password of manager from the database if it exists or not.  Step5: If the user ID and password is valid, users page is displayed |
| Alternate course of Action | If users submit invalid information to database , send a notification to the user to re\_ submit valid information | |

1. The use case documentation for create account

|  |  |  |
| --- | --- | --- |
| Use case name | Add User | |
| Actor | Administrator | |
| Description | This use case describes the process of creating new account to employees. | |
| Precondition | Administrator should login system | |
| Post condition | Administrator should create new account to employees. | |
| Basic course of Action | Actor action | System action |
| Step 1: Administrator clicks on “create account” button.  Step 3: Administrator inserts all required information and clicks submit button. | Step 2: Redirect to Manage Account page  Step 4: Checks the validity of the information and save information in database  Step 5: Display Successful message. |
| Alternate course of action | If some of the fields are not filled, sent a notification to the administrator to fill all the fields again | |

Table 8 Creating an Account table

3 The use case documentation for verify drug

|  |  |  |
| --- | --- | --- |
| Use case name | Verify drug | |
| Actor | User | |
| Description | This use case describes the process of verifying medicine in the drugstore. | |
| Precondition | User should initiate system | |
| Post condition | System should show detail of drug to user. | |
| Basic course of Action | Actor action | System action |
| Step1: user should initiate system click verify Button  Step3: user submits verify ID to the system  Step7: user can view drug information. | Step2: Redirect the verify page.  Step4: Check if verifying ID is valid or not from the database.  Step5: If verifying ID is valid, verify page is displayed.  Step6: display all medicine information.  Step8: user services are confirm the system sent provide receipt to the student. |
| Alternate course of action | If the verification ID is invalid, the system displays error message. | |

Use case documentation for delete account

|  |  |  |
| --- | --- | --- |
| Use case name | Deactivate Account | |
| Scenario 4 | Block user account | |
| Actor | Administrator | |
| Pre-Conditions | Account should be created. | |
| Post-Conditions | the account is deactivated successfully | |
| Description | This activity is performed when the administrator wants to deactive user account. This means, user may leave or stop because of some problems so user account will be deactivated. | |
| Basic course of action | Actor action | System response |
| 1**:** System administrator initiate to login  3: System administrator enters username, user type and password.  6: System administrator select delete user account page. Or create account.  If delete account  8**:** User searches any account he/she want to delete by using ID.  11. The user click Deactivate button to the searched account.  14. The user clicks yes. | 2**:** System displays login page.  4**:** System checks the validity and then authentication and authorization of username, user type and password.  5**:** System displays admin page  7**:** System display deactivate account page.  9. The system validates the existence of the account.  10: The system displays the searched account.  12. The system displays “are you sure you want to deactivate”.  15: System deactivates user account.  16: System display account deactivated successfully. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2, searched account not exist system display, user not found use case continue with step 2. | |

*Table 11 Use case documentation for update account*

|  |  |  |
| --- | --- | --- |
| Use case name | Update Account | |
| Scenario 5 | Update user account | |
| Actor | Admin, user | |
| Pre-Conditions | The user has been needed to access system | |
| Post-Conditions: | The user able to get modified user account | |
| Description | This activity is performed when the administrator wants to update user account. | |
| Basic course of action | Actor action | System response |
| 1**:** System user initiate to login  3: System user enters username, user type and password.  6: System user select update user account page.  I  8**:** User search any account he/she want to update by using ID.  12. The user click Update button to the searched account.  14. The user fills the update. | 2**:** System displays login page.  4**:** System checks the validity and then authentication and authorization of username user type and password.  5**:** System displays Admin page.  7**:** System display update account page.  9: The system validate the entry data is valid.  10. The system validates the existence of the account.  11: The system displays the searched account.  13: The system displays the update form.  15: The system validates the entry.  16: System changes the account and display successful message. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step2, searched account not exist system display, user not found use case continue with step 2. Manager leave the form unfilled**,** system informs form fill is required, use case continues with step 2. | |

Use case documentation for add feedback

|  |  |  |
| --- | --- | --- |
| Use case name | Add feedback to the system | |
| Scenario 6 | Giving feedback | |
| Actor | User | |
| Pre-Conditions | The User need to initiate the system | |
| Post-Conditions | Entered user comment or suggestion saved and viewable to admin | |
| Description | This activity is performed when user wants to give feedback about the strength and weakness of the system. | |
| Basic course of action | Actor action | System response |
| 1**:** The user initiates the system.  3: student click on add feedback button.  5: User writes a comment.  9. Use case end. | 2**:** System displays home page.  4: System display comment form.  6**:** The system validate the entry data is valid.  7: The system save the comment.  8**:** System displays your comment saved successfully. |
| Alternative course of action | Step 4: The user leave the form un-filled, system display error fill the form, use case continues with go to step 3, user case end.The user entered invalid data,the system describes which entered data was invalid the use case continues step 3, use case end. | |

*Table 14 Use case documentation for view feedback*

|  |  |  |
| --- | --- | --- |
| Use case name | View feedback | |
| Scenario 11 | View feedback | |
| Actor | Admin/Manager | |
| Pre-Conditions | The administrator must login success fully | |
| Post-Conditions | View the feedback from the patient and from any user of system. | |
| Description | This activity is performed when the administrator wants to view feedback. | |
| Basic course of action | Actor action | System response |
| 1**:** The user click on login button the system.  3: System administrator enters username, user type and password.  6: System administrator select view feedback button.  8: The admin can view all user comments now. | 2**:** System displays login page.  4**:** System checks the validity and then authentication and authorization of username user type and password.  5**:** With successful login to the system, system displays admin page.  7: The system displays all user comments for the administrator. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2. | |

*Table 15 Use case documentation for add patient info*

|  |  |  |
| --- | --- | --- |
| Use case name | Register patient prescription | |
| Scenario 12 | Add Patient prescription | |
| Actor | Pharmacist | |
| Pre-Conditions | The Pharmacist must login success fully | |
| Post-Conditions | The patient prescription information has been recorded success fully. | |
| Description | This activity is performed when Pharmacist add patient information and prescription. | |
| Basic course of action | Actor action | System response |
| 1**:** The user click on login button from the home page of the web based Drugstore management system.  3: System Pharmacist enters username, user type and password.  6.The user click add patient prescription button.  8:The Pharmacist will fill the data which is to be added. | 2**:** System displays login page.  4**:** System checks the validity and then authentication and authorization of username user type and password.  5**:** With successful login to the system, system displays Pharmacist page.  7:The system display form to add necessary information about patient detail.  9: The system will check format validity.  10. The system saves added data to database. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2. | |

*Table 15 Use case documentation for update patient information*

|  |  |  |
| --- | --- | --- |
| Use case name | Update Employee information | |
| Scenario 12 | Update user status | |
| Actor | Admin | |
| Pre-Conditions | The Admin login success fully | |
| Post-Conditions | The employee information has been updated success fully. | |
| Description | This activity is performed when employee changed and need additional information the Manager update employee status to the system. | |
| Basic course of action | Actor action | System response |
| 1. The user clicks the update patient info button.  8: The Admin will fill the data which is to be updated. | 7: The system display form to update necessary information about employee.  9: The system will check format validity.  10. The system saves updated data to database. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2. | |

*Table 15 Use case documentation for view medicine*

|  |  |  |
| --- | --- | --- |
| Use case name | View Medicine | |
| Scenario 12 | View medicine | |
| Actor | Manager and pharmacist | |
| Pre-Conditions | The users must access the system success fully | |
| Post-Conditions | The medicine must viewable success fully. | |
| Description | This activity is performed when users wants to check and view medicine. | |
| Basic course of action | Actor action | System response |
| 1**:** The user initiates the home page of the web based drugstore management system click login button.  3: the users enter their username and password.  5. The user click view medicine menu.  8: The user will view the medicine status. | 2**:** System displays login page.  4: system validate and authenticate the provided username and password if it correct and valid the system redirect users to their respective page.  7: The system displays all necessary information about medicine. |
| Alternative course of action | Step 4: If the username and password is not validated, system displays error message and go to step 2. | |

*Table 15 Use case documentation for add drug prescription*

|  |  |  |
| --- | --- | --- |
| Use case name | Add drug/ Medicine | |
| Scenario 12 | Add medicine | |
| Actor | Manager | |
| Pre-Conditions | The manager must login success fully | |
| Post-Conditions | The drug/medicine information has been recorded success fully. | |
| Description | This activity is performed when manageradd new drug and treatment to drugstore database. | |
| Basic course of action | Actor action | System response |
| 1. The user click add drug/medicine button.  3: The manager will fill the data which is to be added. | 2: The system display form to add necessary information about medicine.  4: The system will check format validity.  5. The system saves added data to database. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2. | |

*Table 15 Use case documentation for view prescription*

|  |  |  |
| --- | --- | --- |
| Use case name | View report | |
| Scenario 12 | View report | |
| Actor | Manager and admin | |
| Pre-Conditions | The users must login success fully | |
| Post-Conditions | The report information has been viewable success fully. | |
| Description | This activity is performed when users need to view report on drug, prescription, patient, sales. | |
| Basic course of action | Actor action | System response |
| 1. The user click view report button.   3. The users view any report related to drugstore. | 2: The system display necessary information about report detail. |
| Alternative course of action | Step 4: If the username, user type and password is not validated and verified, system displays error message and go to step 2. | |

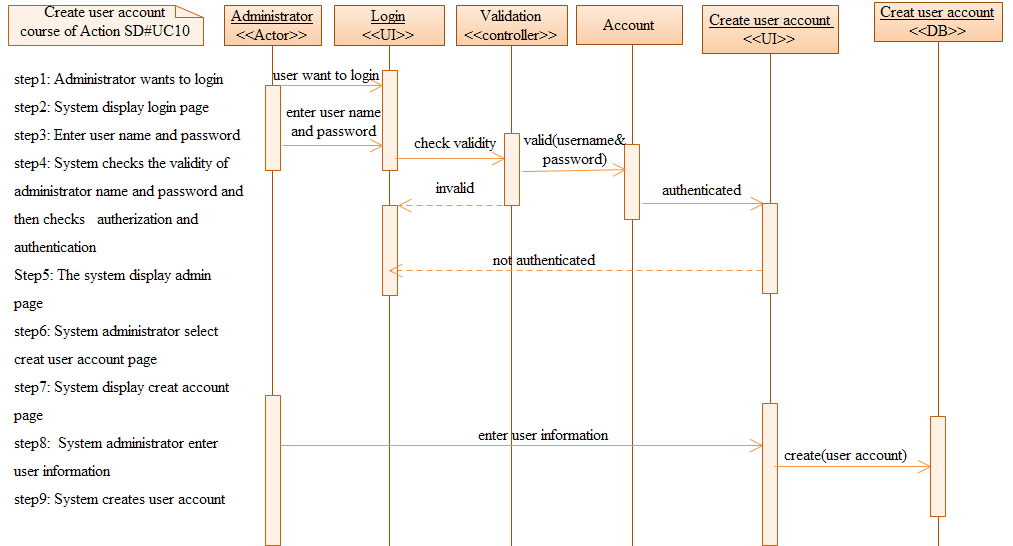
## Sequence Diagram

A sequence diagram in a UML is a kind of interaction diagram that shows how processes operate with one another and in what order. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. It shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

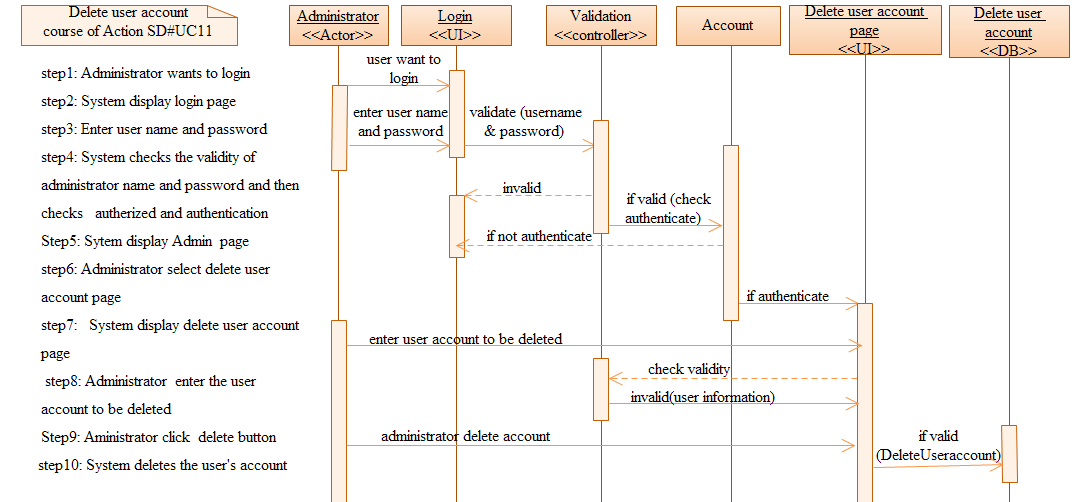
*Figure 1Sequence diagram for login*



*Figure 2Sequence diagram for create user account*



*Figure 3Sequence diagram for Delete user account*



*Figure 4 Sequence diagram for Order diminished drug*



*Figure 5Sequence diagram forGive comment*



*Figure 6 Sequence diagram for Register New drug*



*Figure 7Sequence diagram for Verify drug*



*Figure 8 Sequence diagram for view expired drug*



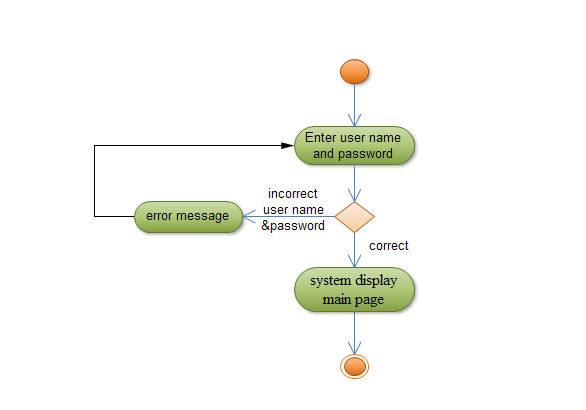
## Activity Diagram

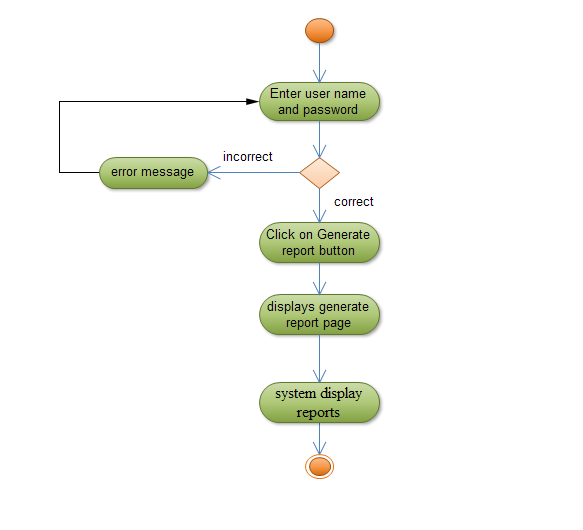
Activity diagram is another important diagram in UML to describe dynamic aspects of the system. Activity diagram is basically a flow chart to represent the flow form one activity to another activity. The activity can be described as an operation of the system. So the control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Activity diagrams deals with all type of flow control by using different elements like fork, join etc.

**Purpose:**

The basic purposes of activity diagrams are similar to other four diagrams. It captures the dynamic behavior of the system. Other four diagrams are used to show the message flow from one object to another but activity diagram is used to show message flow from one activity to another.

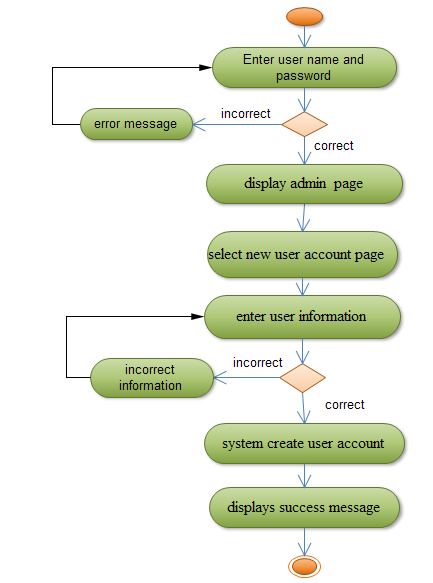
Activity is a particular operation of the system. Activity diagrams are not only used for visualizing dynamic nature of a system but they are also used to construct the executable system by using forward and reverse engineering techniques. The only missing thing in activity diagram is themessage part. It does not show any message flow from one activity to another. Activity diagram is some time considered as the flow chart. Although the diagrams looks like a flow chart but it is not. It shows different flow like parallel, branched, concurrent and single.

1. Activity diagram for login
2. Activity diagram for Generate report



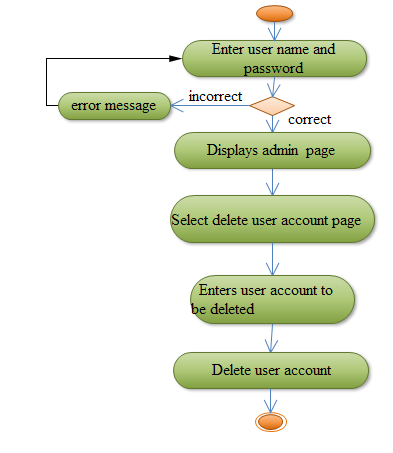
*Figure 9Activity diagram for generate report*

1. Activity diagram for Administrator create user account

****

*Figure 10Activity diagram for create user account*

1. Activity diagram for delete user account

****

*Figure 11Activity diagram for delete user account*

Activity diagram for add feedback



New medicine



New prescription



View medicine



View expired medicine



Order new medicine



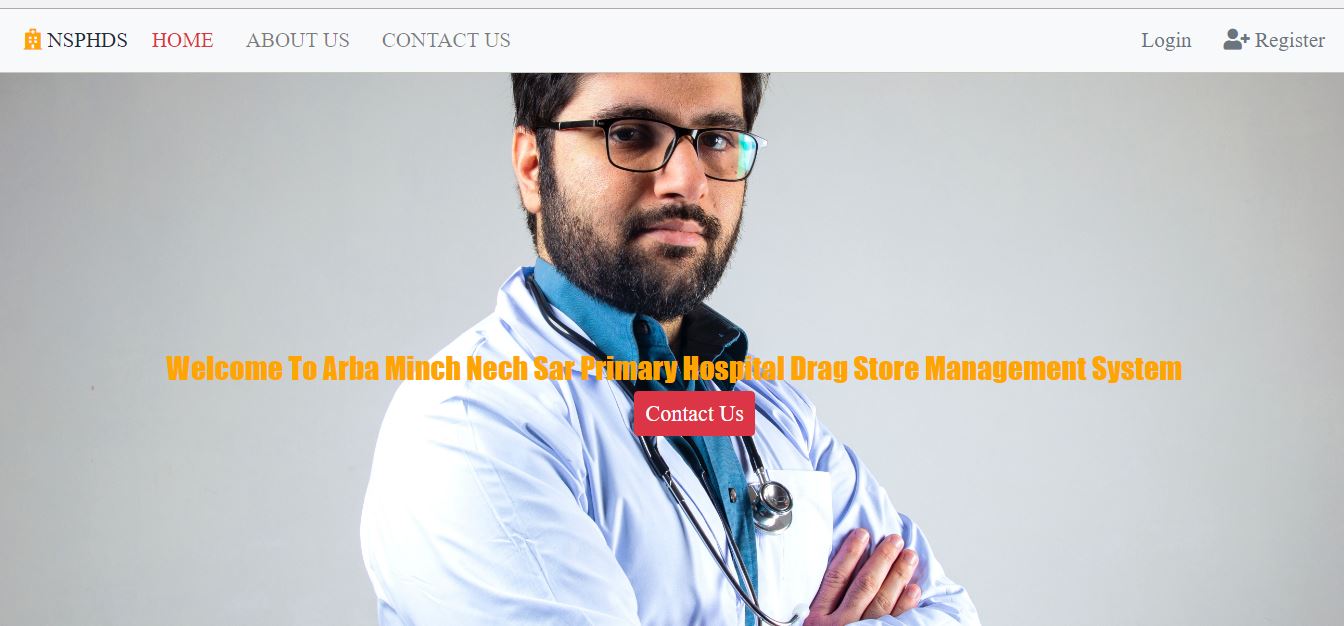
View ordered medicine



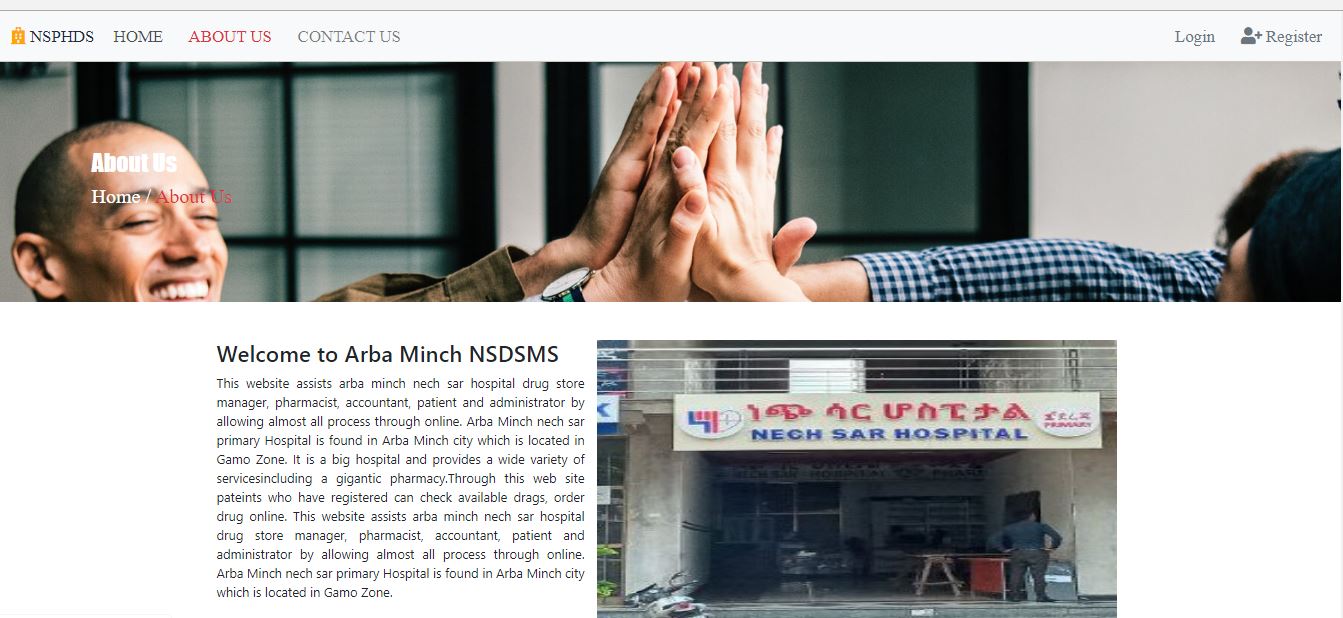
## User interface design

User interface design is the design of computers, applications, software application and websites with the focus on the user‘s experience and interaction. Users communicate with the system through the following user interfaces.

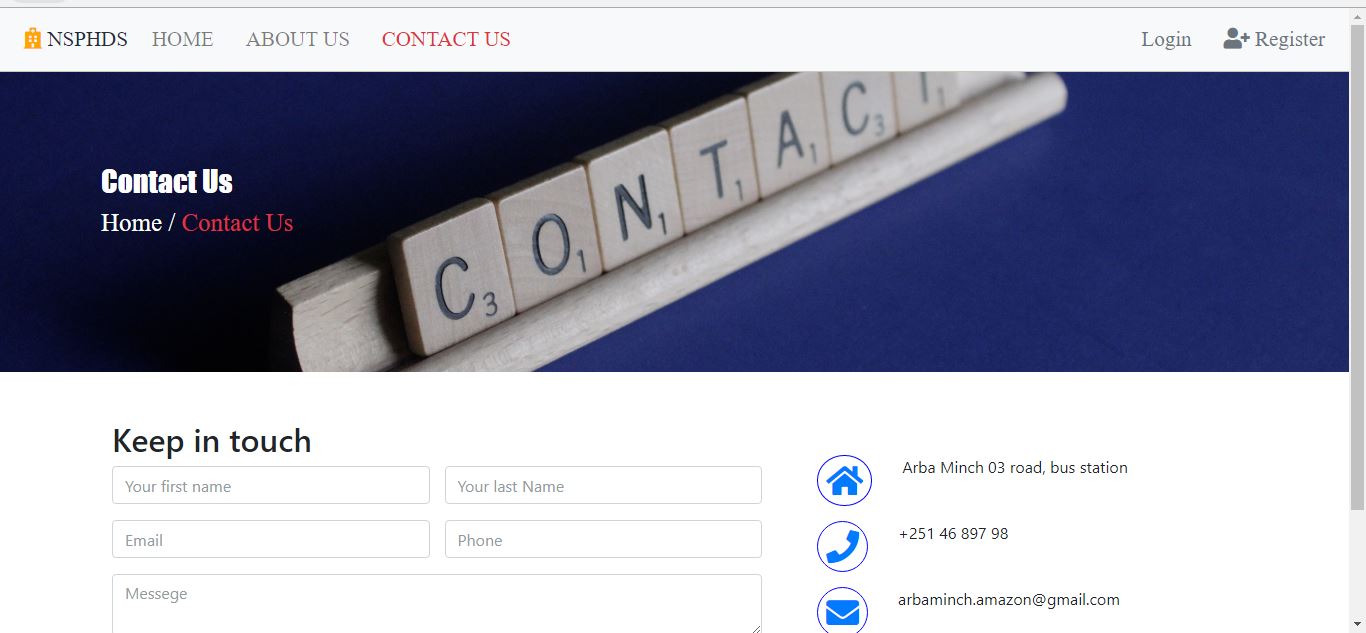
Home Page: This form appears on the site in which the system deployed is opened and contains some links which lead the user to other page according to his privilege, and if the user is authorized user or has an account, he/she will directly go to the page that he want by entering correct username and password.

****

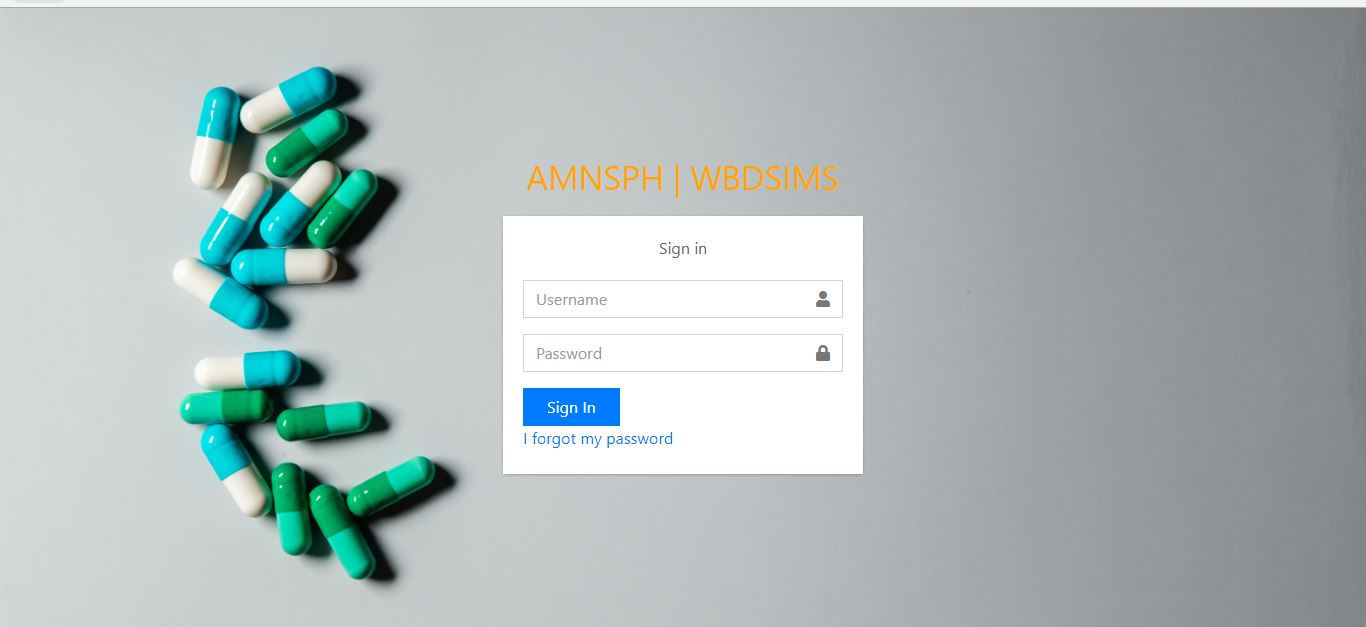
***User interface design for home page***

******

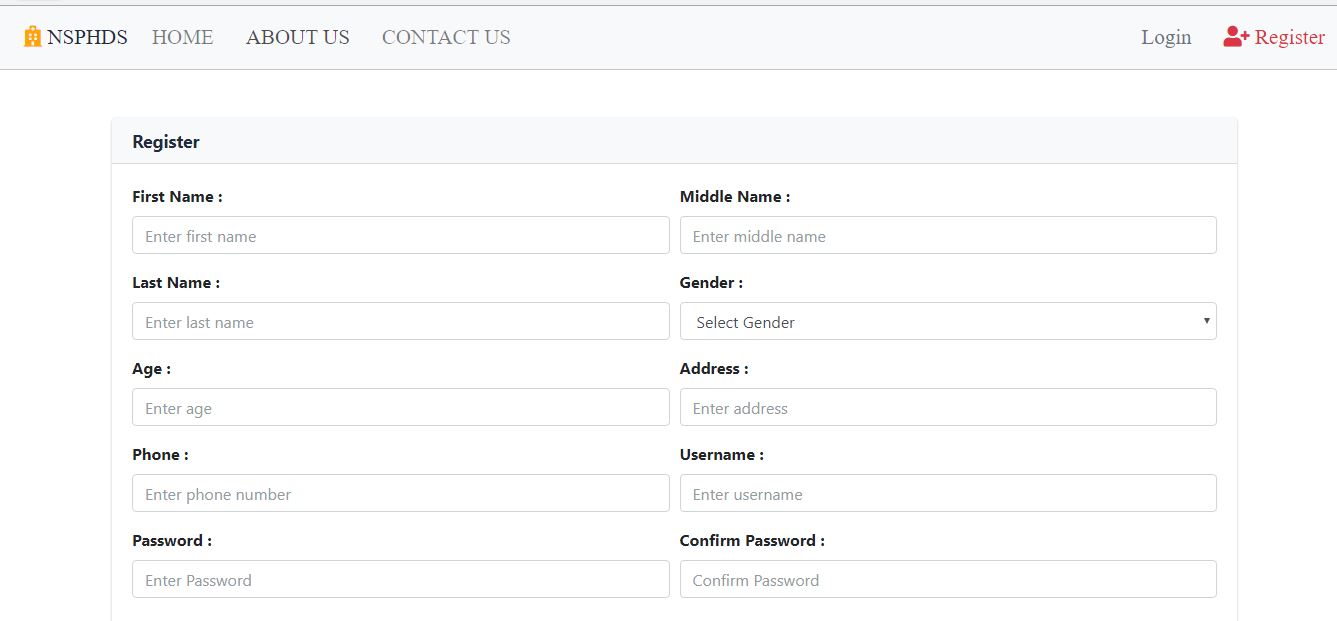
***User interface design for about us page***

******

***User interface design for contact us page***



***User interface design for login page***



***User interface design for register page***

CHAPTER FOUR

SYSTEM DESIGN



## Overview of system design

After investigating the current working system, we were able to identify the critical problems clearly observed (that was explained in the drawback of the existing system in the description existing system). The design part is very important so as to make the implementation very easy. The different types of the system modeling techniques that are used for the implementation of the system such as deployment and component modeling are show in detail. Not only the system modeling techniques but also some system design techniques such as system decomposition design are cover in detail in this phase. Design is process of describing, organizing, and structuring system components at architectural design level and detailed design level. Design converts functional models from analysis into models that represent the solution. Our project which is web based drug store management system which deals with the problems of managing drug data and generating different report for the users. It provides more efficient, reliable, time, resources saving system.

**Purpose of the system**

This document describes the design issues of the overall system. It provides the complete architectural overview of the proposed system. It is intended to capture and express the significant architectural decisions which have been made on the system.

**Design goal**

The Design Goals specify the qualities of the system that should be achieved and addressed during the design of the system. The design goals for the system are grouped into four categories. These are:

* Performance
* Dependability
* Maintenance
* End user

**Performance**

In order for the web based drug store management system is to make centralized system that the system to give the services more than two users concurrently the system should meet the following performance criteria’s.

* **Response time**: - Depending on the network connection that the user machine has the system is going to interact and respond to user’s request in a maximum of a second, if the user is just viewing the pages, but if the user’s request requires the processing of the data base, like searching for drug data, is going to take an average of 1-5 seconds of communication latency with the server system.
* **Memory**:-The client system requires an average of 10-15 megabits of RAM memory to be loaded on a user’s web browser. The server system is going to require up to 40 GB of memory to store all the data and other components of the system.

**Dependability**

Web based drug store management system should achieve the following dependability characteristics in order to resist crash and be available and reliable.

* **Robustness**: - since the system is a web based system, that mainly use a menu driven entry there wouldn’t be an input problem by the user side. But for the server side there might be an error during the process of entering a data. In this time the system will provide an error page and the system will continue without failure or crush.
* **Availability**: - as long as there is an internet connection the system will be available 7 days a week and 24 hours a day for authenticated users.
* **Security**: - the system will provide a user name and password that will manage their own page according to their level of access.
* **Reliability**: the information provided by the system is as reliable as it is presented on the web page interface, and this is maintained by the persistent database.

**Maintenance**

In time of failure or need modification the system need to be maintained. To be maintainable the system should meet the following maintenance criteria.

* **Extensibility**: - if it is needed to add new functionality to the system, this must be achieved by only making a separate page and integrate this page with the existing system.
* **Modifiability**: - if in the system, some functionality requires to be modified, this modification must be done specifically to that function or page without affecting the overall system organization.
* **Portability**: - the system is developed to be viewed and retrieved from any web browser regardless of their version and platform it resides in it.
* **Readability**: - the system code can be viewed by clicking on the current web page and choose “view the source code” option.

**End user**

From the user point of view the system should provide the following end user criteria’s so that the system can achieve at least 90% usability by the user.

* **Utility**: - in order to help the user, to easily understand and interact with the system, the system must provide the following utilities.
* Mouse over tips
* Help menu
* **Usability**: to enhance the usability of the system, the system should be designed incorporating the following usability concepts
* Consistent page pattern
* Less overcrowded interface.

**Backup and Recovery**

We have used backup mechanisms such as removable flash disks, CDs and hard disks. Because the data might lose due to computer viruses or power fluctuation at the time of formatting our computer. And also we use sql server backup mechanism by importing data to other working drives into the computer or flash disk.

**No Redundancy**

The proposed system will avoid repetition of data anywhere in the database.

**Priorities of design goals**

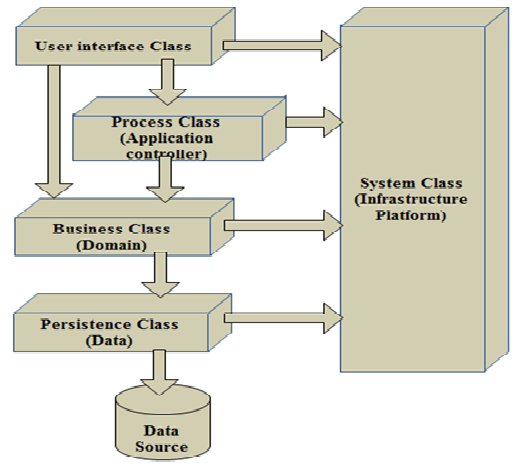
The design goals of the DMS are prioritized as follows

*Table 11 table for priority of design goals*

|  |  |
| --- | --- |
| **Priority** | **Design goal** |
| 1 | End user |
| 2 | Performance |
| 3 | dependability |
| 4 | Maintenance |

**Class type architecture diagram**

* **User interface Layer**:-provides user interface for accessing the system for programmer and end user. There are two categories of interface class \_user interface (UI) classes for end user and system interface (SI) class for programmer.
* **Controller/process Layer**:-the process layer implements business logic that involves collaborating with several domain classes or even other process classes in the system.
* **Business/Domain Layer**:-the class which uses to write the function which works as mediator to transfer data from process layer to persistence layer.
* **Persistence Layer**:-which is also class to get or set data to database queries back and forth. This layer only interacts with the database. The database queries or stored procedures will be written here to access the data from database or to perform any operation to the database.
* **System Layer**:-system classes provide operating-system-specific functionality for our application, isolating our software from the operating system (OS) by wrapping OS-specific feature, increasing the portability of our application.



**Proposed system architecture**

**Overview**

Nech Sar Primary Hospital drug store management system is a web based system, which is used to avoid the current manual system. Because of this, the system will have software architecture. In order to propose the DMS software architecture, we will user 3-tier architecture. Three-tier architecture allows any one of the three tiers to be upgraded or replaced independently. The user interface is implemented on a desktop PC and uses a standard graphical user interface with different modules running on the application server. The relational database management system on the database server contains the computer data storage logic. The middle tiers are usually multitier. In this case, we will have:

* **Presentation layer**: - Occupies the top level and displays information related to services available on a website. This tier communicates with other tiers by sending results to the browser and other tiers in the network. In order to display user data through user interface.
* **Application (business) layer**: -Also called the middle tier, logic tier, business logic or logic tier, this tier is pulled from the presentation tier. It controls application functionality by performing detailed processing. Also used to handle the data validation.
* **Data access layer**: - Houses database servers where information is stored and retrieved. Data in this tier is kept independent of application servers or business logic. Also used to communicate with the database by constructing SQL queries.

*Figure 12 architectural diagram for new system*

User

Local area network

Web server

Arba Minch Nech Sar Primary Hospital drugstore server

Database

AMNS drugstore

DMS

DMS admin

Server Side

Data Access Layer

**Hardware/software mapping**

Nech Sar Primary Hospital web based drug store management system is a web-based application that will be accessed through WAN. The web server will run over xampp/wamp Server, The programming language used to develop this product will be PHP version 5.2.6 and some scripting language such as hypertext markup language (HTML), Java script (JS) and we have used MYSQL version 5.0.51b as the database management system.

*Figure 13 diagram for client server architecture*

**Client/Presentation layer**



Data Access layer (MySQL database)

**Http**Php



Web server xampp

**Application layer**

**State chart Diagram**

State chart diagram is one of the five UML diagrams used to model dynamic nature of a system. They define different states of an object during its lifetime. And these states are changed by events. So State chart diagrams are useful to model reactive systems. Reactive systems can be defined as a system that responds to external or internal events. State chart diagram describes the flow of control from one state to another state. States are defined as a condition in which an object exists and it changes when some event is triggered. So the most important purpose of State chart diagram is to model life time of an object from creation to termination. State chart diagrams are also used for forward and reverse engineering of a system. But the main purpose is to model reactive system. Following are the main purposes of using State chart diagrams:-

* To model dynamic aspect of a system.
* To model life time of a reactive system.
* To describe different states of an object during its life time.

*Figure 14 state diagram for login*



*Figure 15 state diagram for add feedback*

****

*Figure 16 state diagram for create account*

****

*Figure 17 state diagram for delete account*

****

**Class model**

Class diagrams basically represent the object oriented view of a system which is static in nature. It is generally used for development purpose. The class diagram is used to refine the use case diagram and define a detailed design of the system. The class diagram classifies the actors defined in the use case diagram into a set of interrelated classes. These functionalities provided by the class are termed “methods” of the class. Apart from this each class may have certain attributes that uniquely identify the class. This is the most widely used diagram at the time of system construction.



**Deployment diagram**

It describes the physical architecture of the hardware and software in the system. They depict the software components, processors, and devices that make up the system’s architecture. A deployment modeling depicts a static view of the run-time configuration of processing nodes and components that run on those nodes. And it shows: -

* The hardware for the system.
* The software that is installed on the hardware.
* Depict the hardware/network infrastructure of an organization.
* Depict a major deployment configuration of a business application.



**Component diagram**

Component diagrams show how the physical components of a system are organized. And also shows which component or objects will be accessed by whom and what type of security infrastructures it is using. It is a UML diagram that depicts the software components that comprise an application, system or enterprise. The components, their interrelationships, interactions and their public interfaces are depicted.



**CHAPTER FIVE**

**IMPLEMENTATION AND TESTING**

3. 1. **Overview**

Coding and Implementation refers to the Coding of all the design modules mentioned the design pattern of the system starting from requirement analysis to Design phase. After the due coding and testing the system will be implemented for the purpose it is designed and developed.

* 1. **Database management**

In WBDMS database connection is very typical for the Web server to contact the database to get information as needed. PHP uses a technology called PHP Data Objects (PDO) to connect to the database.

* PDO (PHP data objects)

Classic PHP pages used PHP Data Objects (PDO) to access and modify databases. PDO is a programming interface used to access data. This method was efficient and fairly easy for developers to learn and implement. However, PDO suffered from a dated model for data access with many limitations, such as the inability to transmit data so it is easily and universally accessible. Coupled with the move from standard SQL databases to more distributed types of data (such as XML).

Here is the code that create a connection to the database is made.  
<?php

error\_reporting (E\_ALL ^ E\_NOTICE ^ E\_WARNING);

$con=mysql\_pconnect('localhost','root','')or die("cannot connect to server");

mysql\_select\_db('drug')or die("cannot connect to database");

?>

The above statement creates a connection to the database with a PDOConnection object. This object tells PHP where to go to get the data it needs. Since the data is stored in the same computer as the application, the SERVER is given as *localhost.*

* 1. **Implementation detail**
     1. **Sample coding**

Sample coding for home page of Arba Minch Nech Sar Primary Hospital drugstore management system are shown below.

<?php

include("connect\_db.php");

//Start session

session\_start();

//Unset the variables stored in session

session\_destroy();

?>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<title> Arba Minch Nech Sar Primary Hospital </title>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<link href="css/menu.css" rel="stylesheet" type="text/css" media="screen" />

<link href="css/menuCss.css" rel="stylesheet" type="text/css" media="screen" />

<link href="style/mystyle\_login.css" rel="stylesheet" type="text/css" />

<style>

#content {

height: auto;

}

#main{

height: auto;}

</style>

</head>

<body>

<center>

<table style="border:1px solid #3366CC;border-radius:5px " width="950px">

<tr>

<td colspan="2" height="60px" bgcolor="green">

<p align="left"><a href="contacts.php"><img width="1000px" height="100px" src="images/hd\_logo.jpg"></a>

<ul id="menu">

<ul>

<li class="active"><a href="index.php">Home</a></li>

<li ><a href="medicine.php">Medicine</a>

</li>

<li><a href="product.php">Verify</a></li>

<li><a href="contacts.php">Contact Us</a></li>

<li><a href="login.php">Login</a></li>

</ul>

</p>

</td>

</tr>

<tr>

<td valign="top" width="200px" bgcolor="green">

<br><br>

<table style="border:1px solid #3366CC;border-radius:5px" width="200px">

<tr>

<th bgcolor="#000000" style="border-radius:5px"><font color="white">Related Links</font></th>

</tr>

<tr><td></td></tr>

<tr>

<td bgcolor="#000000">

<a href="site.php"><font color="white">Site Map</font></a>

</td>

</tr>

<tr>

<td bgcolor="#000000">

<a href="about.php"><font color="white">About Us</font></a>

</td>

</tr>

<tr>

<td bgcolor="#000000">

<a href="developer.php"><font color="white">Developer</font></a>

</td>

</tr>

<tr>

<td>

</td>

</tr>

<tr><td></td></tr>

</table>

</td>

<td valign="top" style="border:1px solid #3366CC;border-radius:5px ">

<table><tr>

<!DOCTYPE html>

<html>

<head>

<title></title>

<meta http-equiv="content-type" content="text/html; charset=utf-8" />

<meta name="description" content="Made with beautiful, responsive image sliders in a few clicks. Awesome skins and animations. Image carousel" />

<!-- Start HEAD section --><!-- add to the <head> of your page -->

<link rel="stylesheet" type="text/css" href="engine1/style.css" />

<script type="text/javascript" src="engine1/jquery.js"></script>

<!-- End HEAD section -->

</head>

<body style="background-color:#d7d7d7;margin:0">

<!-- Start BODY section --><!-- add to the <body> of your page -->

<div id="wowslider-container1">

<div class="ws\_images"><ul>

<li><img src="data1/images/img1.jpg" alt="img1" title="img1" id="wows1\_0"/></li>

<li><img src="data1/images/img2.jpg" alt="img2" title="img2" id="wows1\_1"/></li>

<li><a href="#"><img src="data1/images/img3.jpg" alt="full screen slider" title="img3" id="wows1\_2"/></a></li>

<li><img src="data1/images/shr\_290913\_hospital2.jpg" alt="shr\_290913\_hospital2" title="shr\_290913\_hospital2" id="wows1\_3"/></li>

</ul></div>

<div class="ws\_bullets"><div>

<a href="#" title="img1"><img src="data1/tooltips/img1.jpg" alt="img1"/>1</a>

<a href="#" title="img2"><img src="data1/tooltips/img2.jpg" alt="img2"/>2</a>

<a href="#" title="img3"><img src="data1/tooltips/img3.jpg" alt="img3"/>3</a>

<a href="#" title="shr\_290913\_hospital2"><img src="data1/tooltips/shr\_290913\_hospital2.jpg" alt="shr\_290913\_hospital2"/>4</a>

</div></div><span class="wsl"><a href="#">image carousel</a></span>

<div class="ws\_shadow"></div>

</div>

<script type="text/javascript" src="engine1/wowslider.js"></script>

<script type="text/javascript" src="engine1/script.js"></script>

<!-- End BODY section -->

</body>

</html>

</tr></table>

</div>

<div id="footer" align="Center Arba Minch Nech Sar Primary Hospital Drugstore 2019. Copyright All Rights Reserved</div>

</td>

</tr>

<tr>

</tr>

</table>

</center>

</body>

</html>

Here is login page sample code

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<title> Arba Minch Nech Sar Primary Hospital Drugstore</title>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

<link href="css/menu.css" rel="stylesheet" type="text/css" media="screen" />

<link href="css/menuCss.css" rel="stylesheet" type="text/css" media="screen" />

<link href="style/mystyle\_login.css" rel="stylesheet" type="text/css" />

<style>

#content {

height: auto;

}

#main{

height: auto;}

</style>

</head>

<body>

<center>

<table style="border:1px solid #3366CC;border-radius:5px " width="950px">

<tr>

<td colspan="2" height="60px" bgcolor="green">

<p align="left"><a href="contacts.php"><img width="1000px" height="100px" src="images/hd\_logo.jpg"></a>

<ul id="menu">

<ul>

<li class="active"><a href="index.php">Home</a></li>

<li ><a href="medicine.php">Medicine</a>

</li>

<li><a href="product.php">Verify</a></li>

<li><a href="contacts.php">Contact Us</a></li>

<li><a href="login.php">Login</a></li>

</ul>

</div>

</p>

</td>

</tr>

<tr>

<td valign="top" width="200px" bgcolor="green">

<br><br>

<table style="border:1px solid #3366CC;border-radius:5px" width="200px">

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<td>

</td>

</tr>

<tr><td></td></tr>

</table>

</td>

<td valign="top" style="border:1px solid #3366CC;border-radius:5px " >

<table><tr>

<?php

include\_once 'connect\_db.php';

if(isset($\_POST['submit'])){

$username=$\_POST['username'];

$password=$\_POST['password'];

$position=$\_POST['position'];

switch($position){

case 'Admin':

$result=mysql\_query("SELECT admin\_id, username FROM admin WHERE username='$username' AND password='$password'");

$row=mysql\_fetch\_array($result);

if($row>0){

session\_start();

$\_SESSION['admin\_id']=$row[0];

$\_SESSION['username']=$row[1];

header("location:http://".$\_SERVER['HTTP\_HOST'].dirname($\_SERVER['PHP\_SELF'])."/admin.php");

}else{

$message="<font color=red>Invalid login Try Again</font>";

}

break;

case 'Pharmacist':

$result=mysql\_query("SELECT pharmacist\_id, first\_name,last\_name,staff\_id,username FROM pharmacist WHERE username='$username' AND password='$password'");

$row=mysql\_fetch\_array($result);

if($row>0){

session\_start();

$\_SESSION['pharmacist\_id']=$row[0];

$\_SESSION['first\_name']=$row[1];

$\_SESSION['last\_name']=$row[2];

$\_SESSION['staff\_id']=$row[3];

$\_SESSION['username']=$row[4];

header("location:http://".$\_SERVER['HTTP\_HOST'].dirname($\_SERVER['PHP\_SELF'])."/pharmacist.php");

}else{

$message="<font color=red>Invalid login Try Again</font>";

}

break;

case 'Manager':

$result=mysql\_query("SELECT manager\_id, first\_name,last\_name,staff\_id,username FROM manager WHERE username='$username' AND password='$password'");

$row=mysql\_fetch\_array($result);

if($row>0){

session\_start();

$\_SESSION['manager\_id']=$row[0];

$\_SESSION['first\_name']=$row[1];

$\_SESSION['last\_name']=$row[2];

$\_SESSION['staff\_id']=$row[3];

$\_SESSION['username']=$row[4];

header("location:http://".$\_SERVER['HTTP\_HOST'].dirname($\_SERVER['PHP\_SELF'])."/manager.php");

}else{

$message="<font color=red>Invalid login Try Again</font>";

}

break;

}}

echo <<<LOGIN

<!DOCTYPE html>

<html>

<head>

<title> Arba Minch Nech Sar Primary Hospital Drugstore</title>

<link rel="stylesheet" type="text/css" href="style/mystyle\_login.css">

</head>

<body>

<div id="content">

<div id="main">

<section class="container">

<div class="login">

<h1>Login here</h1>

$message

<form method="post" action="login.php">

<p><input type="text" name="username" value="" placeholder="Username"></p>

<p><input type="password" name="password" value="" placeholder="Password"></p>

<p><select name="position">

<option>--Select position--</option>

<option>Admin</option>

<option>Pharmacist</option>

<option>Manager</option>

</select></p>

<p class="submit"><input type="submit" name="submit" value="Login"></p>

</form>

</div>

</section>

</div>

<div id="footer" align="Center"> Arba Minch Nech Sar Primary Hospital Drugstore 2019. Copyright All Rights Reserved</div>

</div>

</body>

</html>

LOGIN;

?>

</tr></table>

</td>

</tr>

</table>

</center>

</div>

</div>

</div>

</body>

</html>

* 1. **User manual preparation**

Preparing user manual is important for users of the system since it help them to understand how the system is used.

1. **Welcome page.**

All of this page’s links like home, about us, add feedback and product and service provided by drugstore can be accessed by any users expect the login part.

1. **Login**

This page gives authentication for the users to be accessed. Even the doctor could not access unless registered first by the admin. And all drug store staff also could not access without gain privilege from admin and unless uploaded first by admin. But if they once registered they can change the password into their own and use the system. In addition to this patient have to make registration for use system and to gain additional service from drugstore.

If the user success on the login page; after submission each user will get their own working place page. E.g. if the user is an admin, they will get the bellow snapshotted page. Such page is also hold for other user with their perspective job.

* 1. **System testing**
     1. **Objective**

The main objectives of conducting testing on the system are:

* Testing that the system satisfies the functional requirements
* Testing that the system satisfies the non-functional requirements
* Testing the system’s weak point or failure condition
  + 1. **Scope**

This test plan covers a full system test of the DMS system. This includes operator and user procedures, as well as programs and job control. In addition to comprehensively testing multiprogramming functionality, external interfaces, security, recovery and performance will also be evaluated.

* 1. **Feature to be tested or not to be tested**
     1. **Feature to be tested**

This section lists the functional requirements used for creating the test-case table, the test cases that were used to verify the interface table, and the results for the test-cases table.

*Table 18 List of Functional Requirements.*

|  |  |
| --- | --- |
| Functional requirement Number | Functional requirement short description |
| FR01 | The DMS application shall have three types of authentication: Manager authentication, pharmacist authentication, and admin authentication. |
| FR02 | The DMS application shall be accessible to all the user to browse all their profile information. |
| FR03 | The manager shall be able to view the patient status they added to the DMS. |
| FR04 | The admin shall be able to add new/revised service item as well as to add/modify the employee information. |
| FR05 | The pharmacist shall be able to view all the medicine info. |
| FR06 | The manager shall be able to view all the report and comment from users. |
| FR07 | The pharmacist shall be able to check out expired drug. |
| FR08 | The pharmacist shall not be able to fill order form without providing valid information for all rows in the drug order form. |
| FR09 | The manager shall not be able to fill new medicine form if any of the columns in the drug registration form are left empty. |

* + 1. **Feature not to be tested**
* No other than mentioned above in section
  1. **Test case specification**

Table below shows the functional requirements used to write the test cases along with the test case numbers for each test case and a short description of the test cases.

*Table 19Table for test case specification*

|  |  |
| --- | --- |
| Test case no. | Test-case short description |
| TC01 | To test the Login/Authentication interface for the Admin. |
| TC02 | To test the Login/Authentication interface for the Pharmacist. |
| TC03 | To test the Login/Authentication interface for the Manager. |
| TC04 | To test the verifyinterface if it verify drug or not. |
| TC05 | To test, pharmacist can order replenished drug. |
| TC06 | To test, users can view their profile they add in the DMS system. |
| TC07 | To test, pharmacist can view patient information. |
| TC08 | To test, pharmacist can add new patient information. |
| TC09 | To test, admin can add new employee information. |
| TC10 | To test, manager can view all registered users. |
| TC11 | To test, manager/admin can view all user comment and report. |
| TC12 | To test that pharmacist check out expired drug. |
| TC13 | To test that pharmacist are not able to submit order form if the information in any of the fields is not valid. |
| TC14 | To test that manager are not able to submit medicine registration form if the information in any of the fields is left blank. |

* 1. **Pass/Fail criteria**

This section lists the results that were produced by running the test cases. Table below lists the test cases that were used while testing the interface along with the expected result and the actual results for each test case.

*Table 20 Table for pass/fail criteria*

|  |  |  |
| --- | --- | --- |
| Taste case number | Expected result | Actual result |
| TC01 | Pass | Pass |
| TC02 | Pass | Pass |
| TC03 | Pass | Pass |
| TC04 | Pass | Pass |
| TC05 | Pass | Pass |
| TC06 | Pass | Pass |
| TC07 | Pass | Pass |
| TC08 | Pass | Pass |
| TC09 | Pass | Pass |
| TC10 | Pass | Pass |
| TC11 | Pass | Pass |
| TC12 | Pass | Pass |
| TC13 | Pass | Pass |

* 1. **Installation process**

Since the project is a web based System, there is no need to install it on a particular machine rather it will be hosted on a server.

* 1. **Start-up Strategy**

Once the system has been published, the user can start and access his/her authorized page by entering the correct user name and password with proper authentication and authorization processes.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

2. 1. **Conclusion**

Providing health service to the society and managing societies’ health information task is one of the main activities to be done at Arba Minch Nech Sar Primary Hospital in past few years. So as to facilitative the working model in to an automated system, we developed a web based drugstore management system to serve the hospital with digitalized features and its friendly user interface to accomplish their tasks. The system facilitates tasks performing environment with several benefits for the employees with its remarkable features such as friendly user interface, minimum time of computation, efficient data handling and retrieval with security of the data. In addition to that it’s so quite easy in the system to add drug, register prescription of patient and to record expired drug detail. It also provide wide advantage for pharmacist when the drug in the store finished. Through various challenging, now we have come to the completion phase of this project. We believe our work will ensure a significant contribution to the unit of drugstore office in Arba Minch Nech Sar Primary Hospital and its future mission.

* 1. **Recommendation**

According to scope of our project the team develops web application. Because of the time constraint we cannot do beyond to our scopes, but in the future the team believes that this system can be fully operational by having enough time and fully information. Finally the team would recommend that further work will do on the system in order to make the system performance better and can add further functionality.

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