**[Drug Inventory System for Wonji Shoa Hospital]**



A Senior Project Documentation Submitted to DebreBerhan University in Partial Fulfillment of the Requirement for the Degree of Bachelor of Science in Information Technology

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# DECLARATION

We hereby declare that this project is entitled Wonji-Shoa Hospital Drug Store Inventory System is our own work. This project work is neither in part nor entirely submitted to any university for any other degree. It is being submitted in partial fulfillment of the academic requirements for the bachelor degree in Information Communication Technology. We swear that all the materials used have been properly referenced. The result of our project is carried out under supervision of Endelkachew.

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At last but not least, to start and to complete every activity, it is up on him, since our effort is blessed we are lucky, as a result it becomes tangible now and tomorrow it may be a vital ingredient for further implementation to simplify life, for all thanks God!

# Abstract

Drug Inventory system is a set of computer programs that obtains the supplies of drugs, distribute the drugs and monitors the inventory control of the drugs. Using the pharmaceutical department of Wonji-Shoa hospital as a case study, the department using manual method to operate lacks good storage of information system for drugs. Recording system tends to be complex and the method of tracking expired drug is poor. The good approach to this problem is to involve the use of computer by designing the form, using Access in developing the database and Visual basic as the programming language, to enable keeping accurate record of drug and prevent sales of expired drug. This guarantees the person’s right to good health care and ensures that drugs received are genuine and safe.

# ACRONYMS

SQL: Structural Query Language

ODBC: Object Database Connectivity

ASP: Active Server Pages

VB: Visual Basic

MSDE: Microsoft SQL Server Desktop Engine

DBMS: Database Management system

EMF: Electromotive Force

MS: Microsoft

GUI: Graphical User Interface

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# Chapter One

# Introduction

## Background of The Hospital

The Wonji-Shoa Hospital found in Oromia regional state, East shoa Zone, Adama woreda surrounding Wonji-Shoa sugar factory to the south. Wonji-Shoa Hospital was established as Organization in 1956 E.C for the purpose of providing various medications for wonji community and all staff of Wonji-Shoa Sugar Factory.

## Background of The Project

This project which is drug inventory system provides a computer based information management system in a Pharmacy Department of the Wonji-Shoa Hospital by designing a cost effective, user friendly application, incorporating key attributes of data integrity and system security suitable for use in the pharmacy department of the hospital using Microsoft Access software in developing the database and visual basic as the programming language. The overall aim of this project is to optimize time and material in the processing of data needed for effective operation of large pharmacy department of a hospital. By this approach, data integrity, data redundancy, and consistency will be ensured. Drugs are the chemical substances that are administered to patients for curative purposes and prophylaxis. It can also be known as a medicine, because it is the essential part of peoples care. The ability of the computer to store and retrieve information at a very fast and efficient rate makes its application useful in management operations.

Drug management involves drug procurement, drug distribution, drug tracking and its information management. Drug distribution is concerned with distribution of drugs within the different medical units or departments in a hospital, while drug procurement is concerned with the purchasing activities of the drugs by the pharmacy department of the hospital. In the same vein, drug tracking is concern with the continuous monitoring of the actual quantity of drugs held in the hospital pharmacy or any other drug warehouse /store. It also controls the stock level.

Pharmaceutical unit in a hospital is concerned with drug management activities. They carry out the responsibility of making appropriate selection and drugs used by formulating an annual, monthly, weekly or daily list of drugs requirement and management reports. However, in some hospitals today, some pharmacists still use the manual system of operation which can lead to inappropriate drug management errors due to problems of handling voluminous file within a short period of time. This could make data to be easily inaccessible and also delivery of drugs can lead to misplacement of patients’ files.

### Vision

To see citizen who are intelligent, strong, Healthy, and so sociable in the society that contribute to the development of a country.

### Mission

Serving the customers who come for services such as disease prevention, advice, and checkup and testing their health condition, so as to give fast and good services to the people to guarantee and have healthier society in development of the country.

## Statement of the Problem

Drug procurement, tracking, distribution and information management in this regard are routine processes carried out in various hospitals across Ethiopia. It is a common place to observe that these routine processes are still preformed manually or are minimally computerized even in these Hospitals. This manual approach to these routine operations has a lot of problems associated with it, ranging from poor handling of drug data of patients, lack of good storage information system for drugs and drug dispensary, delays, to the difficulty in retrieving information on drugs and patients’ records. In view of all these problems, it becomes necessary to develop a computer based drug information management system and distribution tracking system. This is what this research project is set to address by computerizing the routine processes in our hospitals and in particular that of Pharmacy Department of Wonji-Shoa Hospital.

## Objective of the Project

### General Objectives

The general objective is to design and implement automated drug inventory system.

### Specific Objectives

This project is aimed: -

* To create a system that will provide easy Query to all related details of drug and generate any kind of report and search records, Records can be exported to excel.
* To create a system that provides up-to-date Collective Records of drug of all categories
* To create a system that provides Database Backup and Recovery.
* To create a system that provides the capability to view Logs.

To manipulate the hospital transactions with instant confirmation

## Scope and limitation of the project

### Scope of the project

The scope of the project is listed in the following:-

* New store item registration.
* Check availability items in the data base.
* Store item expired date checking before the actual expired date reaches.
* System checks expired date whenever the users login.
* Sale drugs.
* Manage account.
* Register employee.
* Register drug
* View employee.
* Delete employee.
* Register customer.

### Limitation of the project

Our project has the following limitations:

* Can’t order to take medicine, it only recommend for the entered medical information.
* The system organization does not have any interaction with other organization system.
* The system applies to only wonji shoa hospital.
* The system does not have any physical control mechanism.

Because of in the following reasons

**Shortage of time:** We are student and in learning process we have shortage of time to complete the project in one semester. This enforces our project team to minimize the project scope.

**Lack of Materials:** There is no enough computer access.

**Shortage of money:** As we are students it is difficult to spend much amount of money on the project that means we can’t go to any other Amhara Credit and Saving institutions other than Debre Berhan*.*

## Methodology and software tools

### Methodology

In developing this project we have been using the following standard information system development methodologies.

1.7.1.1 **Interview:**

To determine the objective and scope of the system we have interviewed the Record officer and those responsible employees for handling records of a patient.

1.7.1.2 **Analyzing existing document (forms and queries):**

In addition to the interview we have observed existing documents that include organizational rules form and queries for allocating and controlling resources used by the system.

1.7.1.3 **Observing the working environment:**

Finally we have observed the working environment to assure those requests gathered using the interview and existing document stated above.

### Software tool used

We will use the following software tools to develop our system

1. MySQL:- this software was used to create the database of the project.
2. Ms. Word 2013:- used to write document
3. JavaScript: - JavaScript is very interesting language used to validate data and develop different messages. We used to validate our data which we used in html code.
4. Firefox browser:- used to browse user interface and other references
5. Adobe photo shop CS6:- this software is used to edit images
6. Edraw Max 7.9:- To develop the UML(Unified Modeling Language ) diagrams our project team used this software.
7. notepad++, Dreamweaver: - Dreamweaver is important to write our html code and PHP codes.
8. PHP- Is used to develop or create a dynamic website.
9. Other related software’s

## Feasibility of the project

The feasibility study proposes one or more conceptual solution to the problem set of the project. In fact, it is an evaluation of whether it is worthwhile to proceed with project or not. Feasibility analysis usually considers a number of project alternatives, one that is chosen as the most satisfactory solution. These alternatives also need to be evaluated in a broad way without committing too many resources. Various steps involved in feasibility analysis are:

1. To propose a set of solution that can realize the project goal. These solutions are usually descriptions of what the new system should look like.
2. Evaluation of feasibility of such solutions. Such evaluation often indicates shortcomings in the initial goals. This step is repeated as the goals are adjusted and the alternative solutions are evaluated.
3. Assuring management control in making certain that output is correct

### Economic Feasibility:

The system being developed is economic with respect to Hospital’s point of view. It is cost effective in the sense that has eliminated the paper work completely. The system is also time effective because the calculations are automated which are made at the end of the month or as per the user requirement. The result obtained contains minimum errors and are highly accurate as the data is required.

### Technical Feasibility:

The technical requirement for the system is economic and it does not use any other additional Hardware and software.

### Operational Feasibility:

The system working is quite easy to use and learn due to its simple but attractive interface. User requires no special training for operating the system.

## Beneficiaries of the project

After this project is finished and properly used it gives great benefits to employees and customers of the hospital.

The following are main benefits.

* Minimize time delay in getting information/reports of placed customer’s information.
* It avoids redundancy of data during record customer’s information.
* Displays most secured and reliable drug inventory system.
* Fast data insertion of the customer’s information.

## Motivation

Drugs are the base for one country and for the society in order to ensure giving healthy care . Using new technology is also must in order to satisfy customers need. So the team member is interested to develop proposed system in order to create suitable environment for the organization by consider some organization problems.

## Project Plan activities

We have time frame to meet the project objective. We will meet three times in week with group members and one times a week contact with our advisors to discuss and reach conclusion about the project work processes. In order to complete the project, we have the common meeting group member’s time is:

1. 2:00-6:00 PM Tuesday

2. 2:00-6:00 PM Sunday

3. 2:00 – 6:00 PM Friday.

And we contact with advisors on Monday 10:00-11:30 AM.

## Project Schedule

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No | | Phases | |  | | | | | |
|  | | *thAug-* 14*thAug* | | *thAug-*  *22rdAug* | *23thAug-*  *thAug* | *1stOct-*  *1stJul* | *2ndJul-*  *thJul* | *thJul-16 Aug* |
| 1 | Requirement gathering | |  | |  |  |  |  |  |
| 2 | Requirement analysis | |  | |  |  |  |  |  |
| 3 | Design | |  | |  |  |  |  |  |
| 4 | Implementation | |  | |  |  |  |  |  |
| 5 | Installation and testing | |  | |  |  |  |  |  |
| 6 | Project closure | |  | |  |  |  |  |  |

*Table1.1. Project Schedule*

## Project Organization team

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Address | | Responsibility |
| Email | Phone Number |
| Taye Dori | [daye07@gmail.com](mailto:derejetsegaye07@gmail.com) | 0920213567 | Analyst |
| Suye Hirbora | [deeta2008@gmail.com](mailto:dengeta2008@gmail.com) | 0967795674 | Designer |
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*Table1.2Project Organizations*

# Chapter 2

# Description of Existing System

## *Introduction* of the current system

The current system of Wonji Shoa Hospital is manual system. That means checking expired date and availability of drugs is done by checking every drug inside the pharmacy. This leads loosing time and resource of the organization. An existing system compromises different players to carry out its job.

## Players in the existing system

Among those different actors (players), the most common are:

* P**harmacist**

The customer comes with the ordered prescription then the pharmacist looks that order of drug and gives the drug accordingly. The customer gets his/her requested service from the pharmacist*.*

* **Pharmacy manager**

The manager gets reports from the pharmacist, store coordinator, and cashier. The reports help the manager to see how services are given to the client.

* **Store coordinator**

Store coordinator is responsible to register the drugs that buy from the private sectors or from the governmental association, and also control the drug that are goes out to the stock.

* **Cashier**

The cashier receives the cost of the drug from the customer ordered by the pharmacist.

## Functions of current system

The existing system has the following functions

* *Drug Registration*: -Whenever the new drug come in in to store, the pharmacy manager registers those drugs.
* *Report preparation*: Report is being prepared in the form of paper documentation from the work done by either of employees.
* *Document collection*: Document is being collected from the prepared report according to their function and submitted time to allocated place (it may be shelf, depends on the drugs name, type, and cost).
* *Buying process*: Even if buying is don orally and manually it is needed
* The patient goes to the pharmacy and give the order receipt to the pharmacist and the receive the required drug.
* *Recruit and* a*ssign employee*: The pharmacy manager prepare procurement form and procure employees based on that agreement.
* *Manage Drugs:* The pharmacy manager manages drugs using paper and roving.
* *Remove Document of drugs:* When drugs are sold or bought or rejected the pharmacy manager removes the document of these drug by finding them from the shelf/cabinet.
* *Managing patient appointment:* The pharmacist is responsible to manage patient schedules.

The general activity of the existing system is depicted bellow.

Figure General process of Drug invent system for Showa Hospital

## Business rule

The existing system has its own mechanism in which its customers are treated.

These include:

* The pharmacist must treat customers in good manner and should address customer’s request.
* The cashier should receive the price of medicine honestly from customers and he/she should generate report for manager.
* Manager should control the entire activity in the stock and should receive clear and appropriate report from the workers of the pharmacy.
* Sold drug should order in their identifiable type to facilitate searching requested drug.
* Manager should control the overall information from any biases properly.
* Forms should contain stock information appropriately.
* Pharmacist doesn’t sell the expired drug.

## Reports generated in the existing system

*Report preparation and generation*: In the existing system is being prepared in the form of paper documentation from the work done either by pharmacist, pharmacy manager or other employees. These paper document reports are prepared by the following employees:

* **Report prepared by Pharmacist:**

The pharmacist prepares the following reports:

* How many drugs are there in each store? How many of them are sold and how many of them are available?
* How many birr is sold?
* The detail of drugs (There number, type, cost…)

## from and other documents of the existing system

There are so many types of pharmacy Forms; Some of the are listed below:

1. **The Receipt Form**

It is a paper format that indicates as the patient or pharmacy buys and sell drug.

1. **Report Form**

It is a paper format to display the number, type and cost of drugs.

1. **Other Forms**

There are also other forms for different activities.

## Alternative solutions

In order to overcome the current system problems that exist in the functioning of DISWSH, our project team members have put down alternative options. These are:

* Change manual system in to computerized system (online) without affecting the structure of the existing system.
* Fetching records from paper or excel to the new system.
* Manage different (branches) pharmacies online:

Record drugs into the new system

## Bottlenecks of Existing system

In the existing system drug registration is done manually which is time taking, exhausting and has no accuracy. The whole document is stored using file cabinets and suspension filing system for a long period of time. This makes overcrowded and easy to damage. Generally, the existing system faces a lot of problems, and these problems results due to the manual system of accomplishing its operations. Such as

* Performance
  + Doing activities using manual document results week performance
  + Is time consuming
* Information (and Data)
  + Outputs
* Lack of any necessary or relevant information
* Too much information – information overload
* Information that is not accurate
* Information that is not timely to its subsequent use
  + Inputs
* Data is not captured in time to be useful
* Data is not accurately captured – contains errors
* Data is difficult to capture
* Data is captured redundantly – same data is captured more than once
* Too much and/or illegal data is captured
  + Stored Data
* Data is stored redundantly in multiple files
* Data is not secure from accident or vandalism (because data is stored in paper)
* Data is not well organized
* Data is not flexible – not easy to meet new information needs from stored data
* Economics
  + Costs
    - Costs are too high (needs too much resource like employee and paper)
  + Profits
    - New Construction who have a system can be explored
    - Current dealing can be improved to systemized
* Control (and Security)
* Too little security or control
* Input data is not adequately edited
* Crimes (e.g. fraud, theft, embezzlement) are (or can be) committed against the data
* Ethics are breached on data or information – refers to data or information getting to unauthorized people
* Redundantly stored data is inconsistent in different files or databases
* Processing errors are occurring by people
* Efficiency
  + People waste time
    - Data is redundantly input or copied and processed.
  + waste drugs and manpower
    - Effort required for tasks is excessive (too much workers)
    - Holdings required for tasks is excessive (e.g. paper)
* Service
  + The Existing system produces inaccurate, inconsistent and unreliable results
  + It is not easy and awkward to use

It is difficult to coordinate with other systems

## Practices to be preserved

The current Wonji Showa Hospital Drug Inventory Management System has an experience to be encouraged or the strong sides of different operation of services. They are:

* Keeping the security of the drug physically.
* Manual signature.
* Physical control of drugs in a store.
* Identifying the expired and new holdings.
* Dispatching useless drugs.
* Wearing uniform and safety clothes
* Holding Identification card

## Requirements of the existing system

### Functional requirements

The functional requirement is the services that are provided by the system. It also describes the interactions between the system and the user, and any other external system.

The new system is expected to provide the following functionalities.

* **Input requirement**
* Store drug information.
* Each input item information must include drug id, drug name, code, quantity, manufactured company, and expiry date.
* **Output requirement**
* The system display report for the pharmacy manager.
* The system should store all the data related with all the tasks performed into a database
* Display storedrug that are reach to expired date.
* When there is no drug in the store the system response the low stock drugs.

Generally, our system has the following functionalities

* **Registration; The system shall register drugs**
* **Login; Authorized user can login the system, includes pharmacy manager and pharmacist.**
* **Authentication; The system shall authenticate users to identify who is the right user.**
* **Generating Report; The system should report about each drug.**
* **Manage drug detail; The system should register, update information and delete drugs.**
* **Manage appointment detail; The system should register, update information and the appointment of the project.**
* **View Post; Employees of the pharmacy can see any post.**

### Non-functional requirements

Nonfunctional requirement describes user visible aspects of the system that are not designed to the functional behavior of the system. Some of the nonfunctional requirements are:

**The following are nonfunctional requirement:**

* **Security:**
* The system shall provide high level of security by blocking an authorised user to view secured system page.
* The external security should be provided by giving login authentication.
* **Performance:**
* The system shall minimize errors and should display clear error message that guides users.
* For login in to the system password and user name should be matched to the password and name.
* There shall be various ways of retrieving data and it shall take less time.
* **Usability**
* The end user shall be able to access any page fast according to the internet connection speed.
* The desktop application should record the information of holdings offline.
* **Availability**
* The availability of the software shall be for everyone who has an internet connection and always for stock manager.
* The system shall be available for 24 hours and 7 days a week.
* **Correctness**
* The results of the functions should be correct and accurate.
* It should validate the entered data before saving to database.
* **Flexibility**
* The operation shall be flexible and reports shall be presented in different ways.
* **Maintainability**
* After the deployment of the project if any error occurs then it should be easily maintained by the software developer.
* **Portability**
* The software shall work properly in any browsers and smart phones.
* **Reliability**
* The performance of the software shall be better which will increase the reliability of the Service.
* **Reusability**
* The data and record that are saved shall be reused if needed.
* **Robustness**
* If there is any error in any window or module, then it should not affect the remaining part of the software
* **Design Constraints:**
* The system shall replace the existing system.
* Performance
* The system will function fast.
* Very short response time.
* The system must be operationally all over the year.
* **User interface**
* The system should be user-friendly interactive.
* The pharmacist can easily retrieve information in the stock.
* The skilled person interacts with the system properly.
* **Security and access permission**
* The system should allow login to only authorized users.
* **Storage requirement**
* The system should store all the data related with all the tasks performed into the database

# Chapter three

# System Analysis

## Introduction

This chapter focuses on developing the requirement and analysis models for the new system using the use case model, sequence diagram, activity diagram and class diagram.

## Use Case Diagram

A use case is used to identify a sequence of actions that provides a measurable value to the actor which is participating in our system and our use case describes a way to which the environment interacts with the system.

The following use cases have been identified from the system specification

**Use case**

* Login
* Manage account
* Create account
* Delete account
* Register employee
* View employee
* Delete employee
* Register drug
* Register Customer
* View drug
* Delete drug
* Check expire date
* Sale Drug

The identified actors that will be participating in the system are:

* Manager
* Hospital pharmacist
* Cashier
* Store cordinatore

Use Case diagram

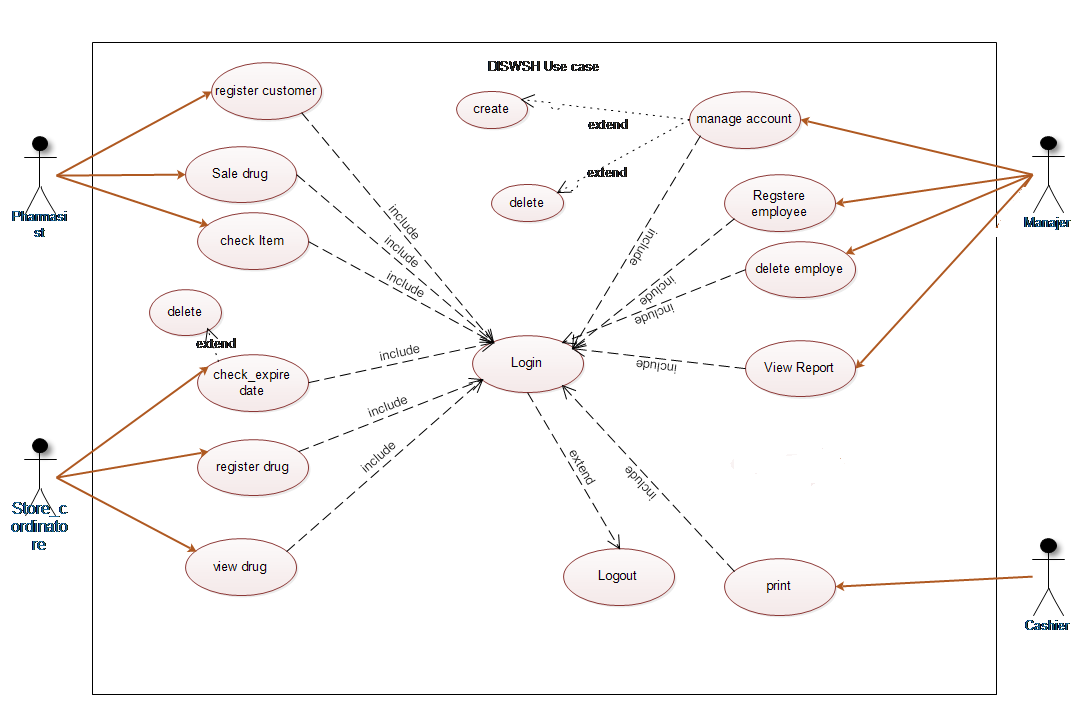


Figure 2 use case diagram for ACSIS

**Include** is used to extract use case fragments that are duplicated in multiple use cases.

**Extend** is used when a use case adds steps to another first class use case.

Use «include» to abstract sequences of steps out of the base Use Cases that are useful to the analyst to avoid repetitious descriptions.

Use «extend», sparingly, to overlay additional functionality on top of a well formed Use Case to divide up the complexity of a large and complex Use Case.

### Use case diagram description

|  |  |
| --- | --- |
| **Name** | **Login** |
| **ID** | **UC1** |
| Actors | Manager, Pharmacist, Casher, Store coordinator |
| Description | In order to get into or access the system |
| Pre condition | 1. The Manager, Store coordinator, pharmacist, or Cashier must open the system |
| Flow of events | 1. Open the system. 2. Click on login link. 3. Login form displayed. 4. Select account type and enter enter user name and password. 5. Click on the login button. 6. System verifies in the account database. 7. Main form displayed. 8. End of use case. |
| Post condition | 1. Access the system |

Table 3Essential use case description for login

|  |  |
| --- | --- |
| **Name** | **Manage Account** |
| **ID** | **UC2** |
| Actors | Manager |
| Description | Create new account, delete an account. |
| Pre condition | 1. The manager initiates the system. 2. The manager should have a valid user name and password. |
| Flow of event | 1. The manager opens the system. 2. The manager log to his or her page. 3. The manager click on the create account or delete account link. 4. The system displays create or delete account form. 5. The manager inserts the necessary information of the user. 6. The manager clicks on sign up or delete button. 7. The system verifies the inserted information. 8. Then the system will generate successfully message 9. End of use case. |
| Post condition | 1. Access the system 2. Close the system |

Table 4Essential use case description for manage account

|  |  |
| --- | --- |
| **Name** | **Employee Registration** |
| **ID** | **UC3** |
| Actor’s | Manager |
| Description | Register the information of the workers in the pharmacy |
| Pre condition | 1. Initiate the system 2. Have user name and password |
| Flow of event | 1. The manager opens the system. 2. The manager log to his or her page 3. The manager click on the register employee link. 4. The system displays the register employee form. 5. The manager inserts the necessary information of the employee. 6. The manager click on the register button. 7. Then the system will generate successfully message 8. End of use case. |
| Post condition | 1. Access the system 2. Close the system |

Table 5Essential use case description for employee registration

|  |  |
| --- | --- |
| **Name** | **Delete Employee** |
| **ID** | **UC4** |
| Actor’s | Manager |
| Description | Delete the employee when it is necessary. |
| Pre condition | 1. Initiate the system. 2. Have user name and password. |
| Flow of event | 1. The manager log to his or her page. 2. The manager click on delete employee link. 3. The system displays the delete employee form. 4. The manager enters the id\_no of the employee. 5. Click on the delete button. 6. Then the system will generate successfully message 7. End of use case |
| post condition | 1. Return to home page or 2. Close the system |

Table 6Essential use case description for delete employee

|  |  |
| --- | --- |
| **Name** | **Register Drug** |
| **ID** | **UC 5** |
| Actors | Store coordinator |
| Description | Registering the new drug from the store in to the data base. |
| Pre condition | 1. Initiate the system. 2. Have user name and password. |
| Flow of event | 1. The Store coordinator opens the system. 2. The Store coordinator log to his or her page. 3. The Store coordinator click on Register drug link. 4. The system displays the register drug form. 5. The Store coordinator will enter the attributes of the drug. 6. Then click on submit. 7. Then the system will generate successfully message. 8. End of use case |
| Post condition | 1. Return to home page or 2. Close the system |

Table 7Essential use case description for register drug

|  |  |
| --- | --- |
| **Name** | **Check Expired Date** |
| **ID** | **UC 6** |
| Actors | Store coordinator |
| Description | In order to check the drug that is the verge of the expired date. |
| Pre condition | 1. Initiate the system. 2. Have user name and password. |
| Flow of event | 1. Open the system. 2. The Store Coordinator log to his or her page. 3. The Store coordinator click on check expired date link. 4. Then the form will be displayed. 5. The Store coordinator enters the expired date of the drug. 6. Then Store coordinator clicks on search button. 7. The system displays the list of the dug that is inserted in its date. 8. The Store coordinator click on the clear button. 9. Then the system will response successfully message. 10. End of use case. |
| Post Condition | 1. Return to home page or 2. Close the system |

Table 8Essential use case description for check expire date

|  |  |
| --- | --- |
| **Name** | **Sale Drug** |
| **ID** | **UC 7** |
| Actors | Pharmacist |
| Description | To purchase the drug to the customer |
| Pre condition | 1. The customer brings with his/her prescription. |
| Flow of event | 1. The pharmacist opens the system. 2. The home page will be displayed. 3. The pharmacist inserts user name and password. 4. The system will verify the user name and password. 5. The pharmacist click on check list link. 6. Then the system displays the drug list. 7. Then return to sale drug link. 8. Click on sale drug link. 9. Enter the necessary information of the customer and the drug. 10. Then click on the load button. 11. Then the system will response successfully message. 12. End of use case. |
| Post condition | 1. Return to home page or 2. Close the system |

Table 9Essential use case description for sale drug

|  |  |
| --- | --- |
| **Name** | **print** |
| **ID** | **UC 8** |
| Actors | Cashier |
| Description | Printing saled drug for the customer |
| Pre condition | 1. There must be list of drug that must be inserted by the pharmacist. |
| Flow of event | 1. Open the system. 2. The home page will be displayed. 3. The cashier inserts user name and password with their account type. 4. The system will verify the user name and password. 5. Then the system display his/her page. 6. The cashier click on fetch drug link. 7. The list of drugs with corresponding quantity and price. 8. The cashier calculates the total price. 9. Then click to print. 10. Then the system will display response. 11. End of use case. |
| Post condition | 1. Return to their appropriate page. 2. Close the system |

Table 10Essential use case description for print

## Sequence diagram

A sequence diagram in a unified modeling language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence**.**

Figure 31sequance diagram of login



Figure 4sequence diagram for register drug



Figure 5Sequence diagram for check expire date



Figure 6Sequence diagram for sale drug

## Activity diagram

An Activity diagram is similar to a flowchart to represent the flow from one activity to another activity. Activity diagrams and State chart diagrams are related. While a State chart diagram focuses attention on an object undergoing a process (or on a process as an object), an Activity diagram focuses on the flow of activities involved in a single process. The Activity diagram shows how these single-process activities depend on one another.



Figure activity diagram for login

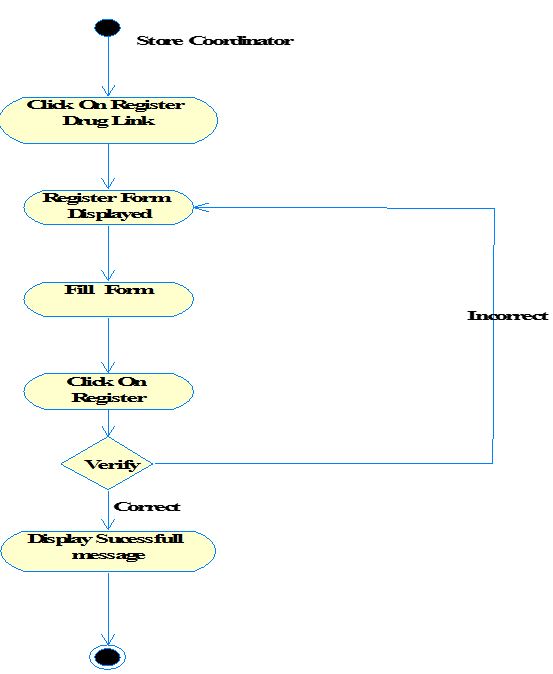


Figure activity diagram for register drug

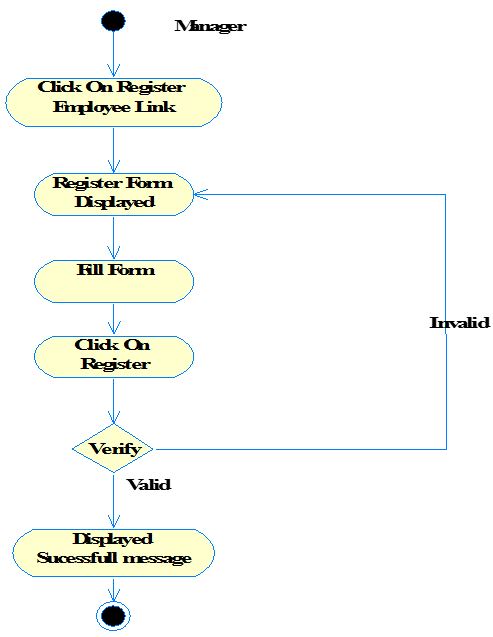


Figure activity diagram for register employee

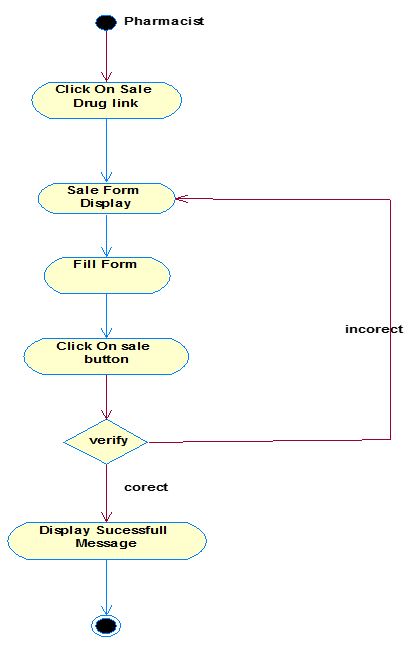


Figure 10Activity diagram for sale drug

## *Class* modeling diagram

Class diagrams in the [Unified Modeling Language](http://en.wikipedia.org/wiki/Unified_Modeling_Language) (UML) is a type of static structure diagram that describes the structure of a system by showing the system's [classes](http://en.wikipedia.org/wiki/Class_%28computer_science%29), their attributes, operations (or methods), and the relationships among the classes. The class diagram with its corresponding objects will be present in the following diagram.

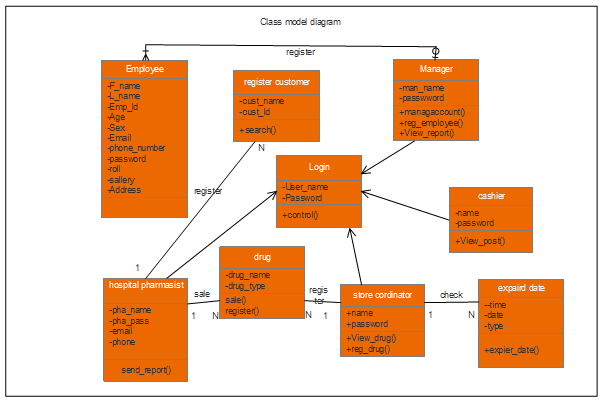


Figure Class modeling diagram

## State Chart modeling

In this part the team used to model the behaviors of the objects by drawing the state diagram. The state diagram depicts the state of objects as their attributes change from state to the other state. State chart modeling is used to show the sequence of states that an object goes through, the cause the transition from one state to other and the action that result from a state change.



Figure 12State chart for login



Figure 13State chart for register drug



Figure 14 stat chart for delete employee



Figure 15State chart for delete drag

## User interface design

User interface design is the overall process of designing how a user will be able to interact with a system.

The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals.

This topic shows how user interface of our system is designed in a systematic and practical way. It bridges the gap between traditional performance perspectives, which often uses manual performance action, and the new computerized system.

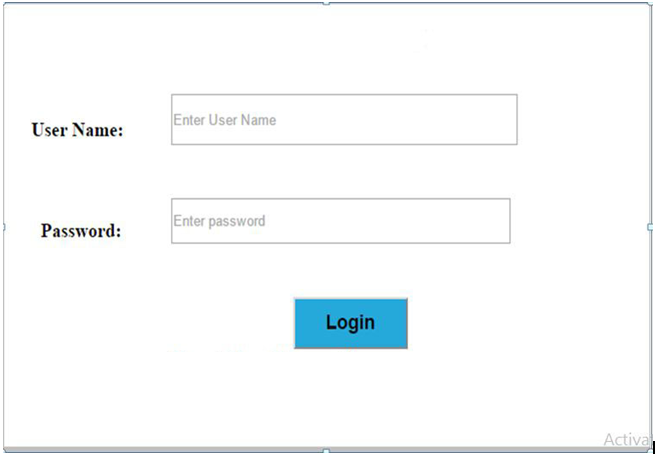


Figure 16User interface login page

Explanation for Login Form

* The form has two text boxes namely username text box, password text box and also one button called login button.
* The user enters the username and password on the space provided
* If the user misses any of the inputs it will ask the user to enter the missed one.
* If the user enters wrong password or user name it also displays wrong message input.
* If the user name, and the password are correct the system display working area for the user.

# Chapter Four

# System Design

## Introduction

This chapter includes the design phase of this project. The main purpose of the project, goals of design, Current and proposed system software architecture will be discussed in detail.

System design is the transformation of the analysis model into a system design model. Up to now we were in the problem domain. System design is the first part to get into the solution domain in a software development. This chapter focuses on transforming the analysis model into the design model that takes into account the non-functional requirements and constraints described in the problem statement and requirement analysis sections discussed earlier.

The purpose of designing is to show the direction how the system is built and to obtain clear and enough information needed to drive the actual implementation of the system. It is based on understanding of the model the software built on. The objectives of design are to model the system with high quality. Implementing of high quality system depend on the nature of design created by the designer. If one wants to change to the system after it has been put in to operation depends on the quality of the system design. So if the system is design effetely, it will be easy to make changes to it.

### Purpose of the system

The system is designed to implement a solution to an application domain which consists of Drug Inventory System for Wonji shoa Hospital.  This will be achieved by delivering a software system that will interact with the corresponding actors such as manager, pharmacist, Cashier and Store coordinator.

The main purpose of the proposed system is to improve some activities through computerized way that simplifies the workload of the existing system and speedup the operation of the system.

The main aim of the proposed system

* Is to reduce human errors by providing user-friendly input and output capabilities and record keeping.
* To provide highly security data (protect data from unauthorized user).
* The customer’s data will be placed in proper way on database.
* The customer’s data will not be redundant.
* Modernization and the expansion of the social financial system to the customer will be increased.
* Due to having well manner database system the user will perform each activity in efficient and effective way without work load.

### Design goal

The goal of the system is to satisfy the functional and nonfunctional requirements as specified in the requirements specification document.

Design goals describe the qualities of the system that the developers should consider.

* **Reliability:** Drug inventory system for wenji shewa hospital system should be reliable.
* **Fault Tolerance:** Drug inventory system for wenji shewa hospital should be fault tolerant to loss of connectivity with the service.
* **Security:** Drug inventory system for wenji shewa hospital should be secured, i.e., not allow other users or unauthorized users to access data that has no the right to access it.
* **Modifiability:** Drug inventory system for wenji shewa hospital system should be modifiable for further modification and enhancement of the application.
* **Performance**: - The system should respond fast with high throughput, i.e. it should perform the task quickly possible as possible such as allocating students and proctors, viewing student and dormitory information etc.
* **Cost**: The system should be developed with minimum cost possible. In reality there is always trade-offs or disadvantages and therefore from its previous experience the organization prefers to invest more on development cost than maintenance cost to minimize bugs which may appear at the later stage.
* **End User Criteria**: - The system should have simple and understandable graphical user Interface such as forms and buttons, which have descriptive names. It should give reliable response for each user request at least before the session expires. All the interfaces, forms and buttons are written or designed in a simple language or common language so that the user can access it without any difficult.

## Proposed System software architecture

### Overview

Software architecture refers to the subsystem decomposition in terms of subsystem Responsibilities, dependencies among subsystems, subsystem mapping to hardware, and Major policy decisions such as control flow, access control, and data storage. The proposed system will have two tier client-server software architectures. The clients request to the server and the server response to the client, then the client can get the information whatever they request to the server.

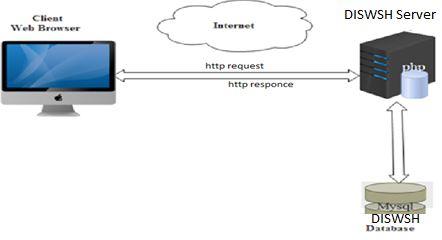


Figure 17Software Architecture of the system

### Subsystem decomposition

The system will be built on a layered architecture. A layered architecture makes it easier to maintain or modify one part of the system without affecting the others. If for example the users need a modification on the User interface, they could get it without affecting the whole or the rest of the system. During decomposition of the system we decompose our system in to individual unit that can be perform by one team member and one subsystem modification do not affect the other subsystem and each subsystem class are related with each other

The following diagram shows the layers that the system will be constructed on.

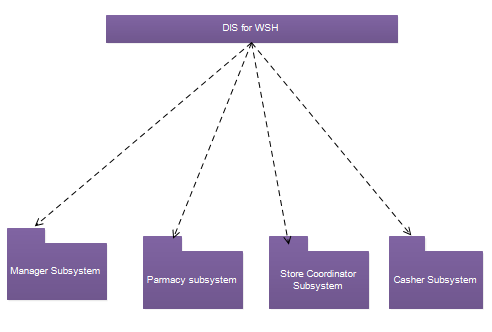


Figure 18layered architecture of the system decomposition

## Hardware/Software mapping

The diagram shown below depicts the outline of the deployment scheme for the Drug Inventory System for Wonji Shoa Hospital.

The Manager’s Computer and the other pharmacist, store coordinator and cashier Computer communicate with the DISWSH server via HTTP/HTTPS protocol using the Browser in their respective computers. The DISWSH Server has a xamp Application Server running on a particular port listening for requests from the Manager’s as well as the employee’s computer.

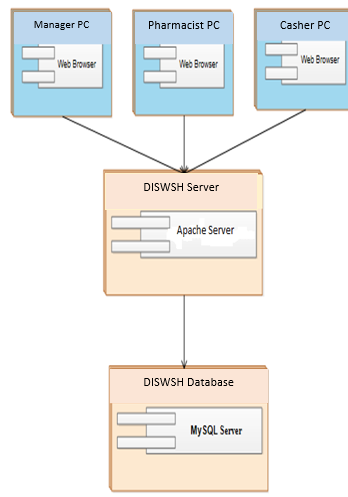


Figure hardware and software architecture

## Data base design

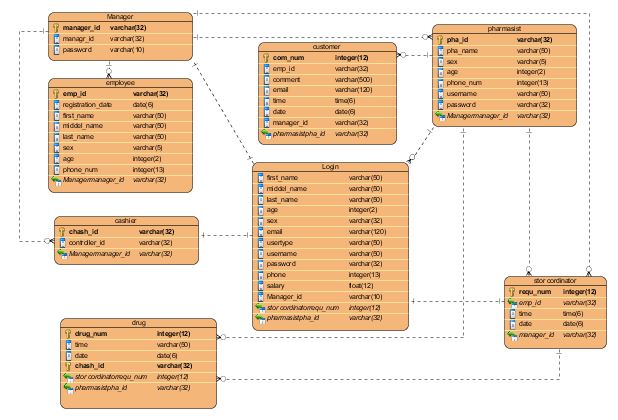


Figure 20 database design

## Component diagram



Figure 21 component diagram

## Deployment diagram



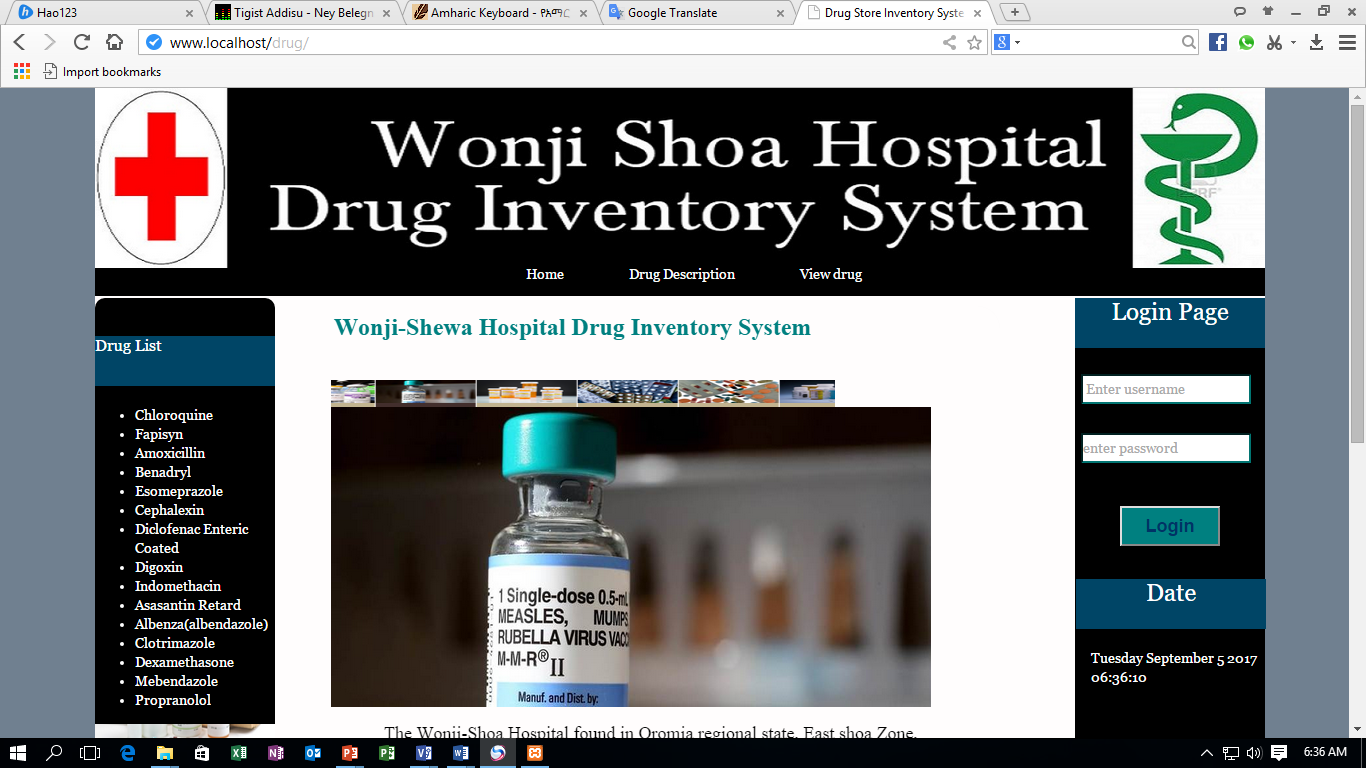
Figure 22 deployment diagram

## 4.7 User Interface Design

**Sample Users Interface**

The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals what is often called user-centered design. Good user interface design facilitates finishing the task at hand without drawing unnecessary attention to it.  
The following interface design pictures describe the logical characteristics of some interfaces  
between the system and the users. So the sample interfaces are shown as follows:

**Home Pag**



**Manager main page**



**Pharmacist Main page**



Store Cordinator main page



Cashier’s Main Page



Sample Code

Login

<?php

require("connection.php");

if(isset($\_POST['login']))

{

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

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

$\_SESSION['username']=$uname;

$result=mysql\_query("Select \* from user where username='$uname' and status='active' and password='$upass'");

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

$username=$row['username'];

$\_SESSION['usertype']=$row['usertype'];

$status=$row['status'];

$password=$row['password'];

//$password=mc\_decrypt($row['password'], ENCRYPTION\_KEY);

if($username!=null&&$\_SESSION['usertype']!=null && $status!=null && $password!=null){

session\_start();

$\_SESSION['username']=$uname;

$\_SESSION['password']=$upass;

$\_SESSION['usertype']=$row['usertype'];

$\_SESSION['status']=$status;

$password=$upass;

if($password==$upass)

{

if($\_SESSION['usertype']=="admin" and $\_SESSION['status']='active'){

$\_SESSION['userid']=$row['userid'];

header("location:admin.php");

}

else if($\_SESSION['usertype']=="cordinator" and $\_SESSION['status']='active'){

$\_SESSION['userid']=$row['userid'];

}

else if($\_SESSION['usertype']=="pharmasist" and $\_SESSION['status']='active'){

$\_SESSION['userid']=$row['userid'];

header('location:pharmasist.php');

}

else if($\_SESSION['usertype']=="cashier" and $\_SESSION['status']='active'){

$\_SESSION['userid']=$row['userid'];

header('location:cashier.php');

}

}

else

{

echo '<script type="text/javascript">

alert("Please enter correct username and password !")

window.location="index.php"</script>';

}

}

else

{

echo '<script type="text/javascript">

alert("Please enter correct username and password !")

window.location="index.php"</script>';

}

}

?>

<!DOCTYPE html>

<html>

<head>

<title>Drug Store Inventory System </title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no">

<link href="layout/styles/layout.css" rel="stylesheet" type="text/css" media="all">

<link href="styles.php" rel="stylesheet" type="text/css"/>

<script type = "text/javascript" >

function preventBack()

{

window.history.forward();

}

setTimeout("preventBack()", 0);

window.onunload=function(){null};

</script>

<style>

h5

{

background-color:#004566;

height:50px;

color:#ffffff;

}

.form-signin {

max-width: 250px;

padding: 6px;

margin: 0 auto;

color: #002625;

}

#right button

{

background-color: #008080;

color: #fffbfb;

width: 170px;

height: 40px;

}

#right select

{

width: 170px;

height: 30px;

}

#right input

{

margin-bottom: 10px;

border-top-left-radius: 0;

border-top-right-radius: 0;

border-color:#017572;

width: 170px;

height: 30px;

}

#right h5{

width: 170px;

}

#leftt hr{

color: white;

}

</style>

<script>

function validatePassword() {

var currentPassword,newPassword,confirmPassword,output = true;

currentPassword = document.frmChange.currentPassword;

newPassword = document.frmChange.newPassword;

confirmPassword = document.frmChange.confirmPassword;

if(!currentPassword.value) {

currentPassword.focus();

document.getElementById("currentPassword").innerHTML = "required";

output = false;

}

else if(!newPassword.value) {

newPassword.focus();

document.getElementById("newPassword").innerHTML = "required";

output = false;

}

else if(!confirmPassword.value) {

confirmPassword.focus();

document.getElementById("confirmPassword").innerHTML = "required";

output = false;

}

if(newPassword.value != confirmPassword.value) {

newPassword.value="";

confirmPassword.value="";

newPassword.focus();

document.getElementById("confirmPassword").innerHTML = "not same";

output = false;

}

return output;

}

</script>

<style>

#register

{

margin-left: 70px;

width: 500px;

height: auto;

}

</style>

</head>

<body id="body">

<div id="contaner">

<header id="header" class="clear">

<div id="header1">

<img src ="dimage/final1.jpg" alt="m1" width="1100px" height="140px" />

</div>

</header>

<div class="wrapper row2">

<div class="rounded">

<nav id="mainav" class="clear">

<ul class="clear">

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

<li class="active"><a href="description.php" target="content">Drug Description</a></li>

<li class="active"><a href="viewdrugi.php" target="content">View drug</a></li>

</ul>

</nav>

</div>

</div>

<div id="leftt" style="width: 180px;

height: 910px;

background-color:#000000;

font-size: !important;

border-bottom-right-radius: !important;

margin-left: 1X;

margin-bottom: 20PX;

margin-top: -18PX;

border: 20PX;

float: left;

border-radius: 10PX;

margin-right: 1PX;">

<br/><br />

<h5> Drug List</h5>

<ul>

<li><a href="c.php" target="content">Chloroquine</a></li>

<li><a href="f.php"target="content">Fapisyn</a></li>

<li><a href="a.php" target="content">Amoxicillin</a></li>

<li><a href="b.php" target="content">Benadryl</a></li>

<li><a href="e.php" target="content"> Esomeprazole</a></li>

<li><a href="ce.php" target="content">Cephalexin</a></li>

<li><a href="di.php" target="content"> Diclofenac Enteric Coated</a></li>

<li><a href="dig.php" target="content"> Digoxin</a></li>

<li><a href="i.php" target="content">Indomethacin</a></li>

<li><a href="as.php" target="content"> Asasantin Retard</a></li> Clotrimazole

<li><a href="al.php" target="content"> Albenza(albendazole)</a></li>

<li><a href="cl.php" target="content">Clotrimazole</a></li>

<li><a href="de.php" target="content">Dexamethasone</a></li>

<li><a href="me.php" target="content">Mebendazole</a></li>

<li><a href="p.php" target="content"> Propranolol</a></li>

</ul>

<marquee behavior direction="up"><img src="dimage/15.jpg"></marquee>

<img src="dimage/3.jpg">

<marquee behavior direction="down"><img src="dimage/13.jpg"></marquee>

<marquee behavior direction="up"><img src="dimage/9.jpg"></marquee>

</div><!-- close left div---->

<div id="centerrrr">

<div id="register" style="background-color: #fffdfd;margin-left: 25px;width: 880px;height: auto;margin-top: -10px;border-radius: 23PX;border: 0PX SOLID">

<iframe src="indexframe.php" name="content" width="700px" height="840px" frameBorder="0" scrolling="yes" style="">

</iframe>

<br />

<br />

</div><br /><br />

</div><!-- close center div---->

<div id="right" style="margin-top: -930px">

<h5 style="width: 190px;height:50px;" align="center"><font size="5"> Login Page</font> </h5>

<img src="dimage/user.png" style="padding-left:30px;">

<div class = "container">

<form class = "form-signin" action="login.php" method = "post">

<input type = "text" class = "form-control" name = "username" placeholder = " Enter username " required ></br>

<input type = "password" class = "form-control"

name = "password" placeholder = "enter password " required><br />

<p align="center"> <button class = "" type = "submit"

name = "login" style="width: 100px"><font size="4"><b><font color="#003366"> Login</font></b></font></button></p>

<br />

<div id ="cal" style="width: 180px; margin-left: 10px;">

<h5 style="width: 190px;margin-left: -15px" align="center"><font size="5"> Date</font></h5>

<table width="180px" height="40px">

<script type="text/javascript" src="date\_time.js"></script>

<body>

<font color="white"><span id="date\_time"></span>

<script type="text/javascript">window.onload = date\_time('date\_time');</script></font>

</body>

<head>

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

<link rel="stylesheet" media="screen, print, handheld" type="text/css" href="calendar.css" />

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

</head>

<script type="text/javascript">

</script>

</table>

</div>

</div><!-- close right div---->

</div><!-- close container div---->

<div id="footer">

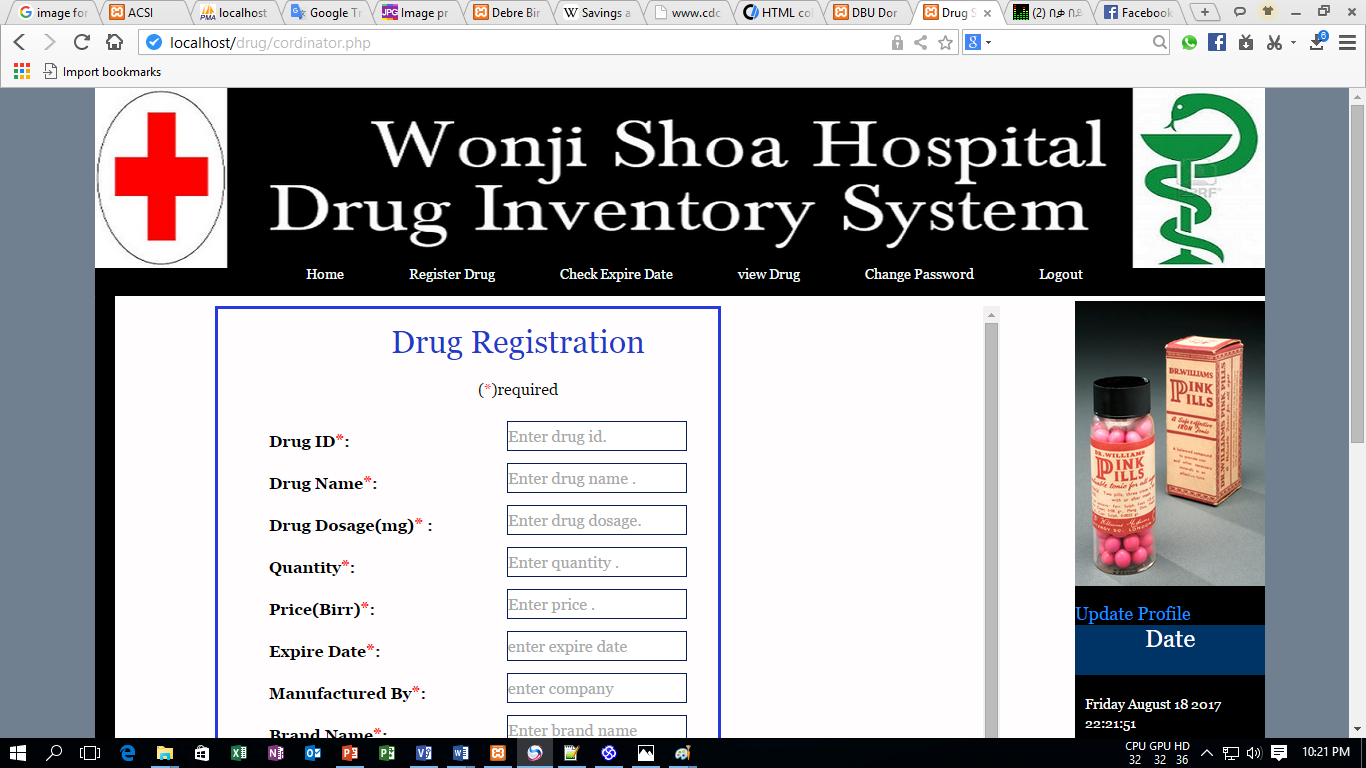
<b><strong><center>Developed By IT 2009 Graduated Summer Students <center></strong></b> <br/>

</div><!---close footer div--->

</body>

</html>

**Drug Registration**



<?php

include("connection.php");

session\_start();

if($\_SESSION['usertype']!='cordinator' || $\_SESSION['username']=="" ){

header("location:index.php");

}

if(isset($\_SESSION['userid']))

{

$mail=$\_SESSION['userid'];

} else {

?>

<script>

alert('You Are Not Logged In !! Please Login to access this page');

alert(window.location='index.php');

</script>

<?php

}

?>

<?php

$user\_id=$\_SESSION['userid'];

$user=$\_SESSION['username'];

?>

<html>

<head>

<title>Drug Inventory System </title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no">

<link href="layout/styles/layout.css" rel="stylesheet" type="text/css" media="all">

<link href="styles.php" rel="stylesheet" type="text/css"/>

<script type="text/javascript" src="jquery-1.4.1.min.js"></script>

<link rel="stylesheet" type="text/css" media="all" href="5/date.css" />

<link rel="stylesheet" type="text/css" media="all" href="includes/jquery/jquery-ui-custom.css" />

<script src="includes/jquery/jquery-1.10.2.js"></script>

<script src="includes/jquery/jquery-ui-custom.js"></script>

<script type="text/javascript" src="5/date.js"></script>

<script type="text/javascript">

$(document).ready(function()

{

$(".building").change(function()

{

var id=$(this).val();

var dataString = 'id='+ id;

$.ajax

({

type: "POST",

url: "get\_location.php",

data: dataString,

cache: false,

success: function(html)

{

$(".department").html(html);

}

});

});

$(".department").change(function()

{

var id=$(this).val();

var dataString = 'id='+ id;

$.ajax

({

type: "POST",

url: "get\_college.php",

data: dataString,

cache: false,

success: function(html)

{

$(".city").html(html);

}

});

});

});

</script>

<style>

.multiselect {

width: 200px;

}

.Location

{

width: 200px;

}

.selectBox {

position: relative;

}

.locationbox

{

position: relative;

}

.selectBox select {

width: 100%;

font-weight: bold;

}

.locationbox select

{

width: 100%;

font-weight: bold;

}

.overSelect {

position: absolute;

left: 0; right: 0; top: 0; bottom: 0;

}

#checkboxes {

display: none;

border: 1px #dadada solid;

}

#checkboxes label {

display: block;

}

#checkboxes label:hover {

background-color: #1e90ff;

}

#checkboxesss {

display: none;

border: 1px #dadada solid;

}

#checkboxesss label {

display: block;

}

#checkboxesss label:hover {

background-color: #1e90ff;

}

#locationcheckboxes {

display: none;

border: 1px #dadada solid;

}

#locationcheckboxes label {

display: block;

}

#locationcheckboxes label:hover {

background-color: #1e90ff;

}

</style>

<script>

var expanded = false;

function showCheckboxes() {

var checkboxes = document.getElementById("checkboxes");

if (!expanded) {

checkboxes.style.display = "block";

expanded = true;

} else {

checkboxes.style.display = "none";

expanded = false;

}

}

</script>

<script>

var expanded = false;

function showCheckboxess() {

var checkboxes = document.getElementById("checkboxesss");

if (!expanded) {

checkboxes.style.display = "block";

expanded = true;

} else {

checkboxes.style.display = "none";

expanded = false;

}

}

</script>

<SCRIPT language=Javascript>

<!--

function isNumberKey(evt)

{

var charCode = (evt.which) ? evt.which : event.keyCode

if (charCode > 31 && (charCode < 48 || charCode > 57))

return false;

return true;

}

//-->

</SCRIPT>

<script>

jQuery(document).ready(function($) {var dateToday = new Date();

var dates = $("#dateStart, #dateEnd").datepicker({

defaultDate: "+1w",

dateFormat: 'yy-mm-dd',

changeMonth: true,

numberOfMonths: 1,

minDate: dateToday,

onSelect: function(selectedDate) {

var option = this.id == "dateStart" ? "minDate" : "maxDate",

instance = $(this).data("datepicker"),

date = $.datepicker.parseDate(instance.settings.dateFormat || $.datepicker.settings.dateFormat, selectedDate, instance.settings);

dates.not(this).datepicker("option", option, date);

}

});

});

</script>

</head>

<body>

<div id="register" style="

border: solid 3px #2739dc;width: 500px;height: 850px;margin-left:95px ">

<?php

// define variables and set to empty values

$aErr=$bErr=$cErr=$dErr=$eErr=$fErr=$gErr=$hErr=$iErr=$jErr=$kErr="";

$a=$b=$c=$d=$e=$f=$g=$h=$i=$j=$k=$l=$m=$date="";

if ($\_SERVER["REQUEST\_METHOD"] == "POST")

{

//no-----------------------------------

if (empty($\_POST["did"]))

{$aErr = "<font color='red'>Please enter drug id </font>";}

/\*else

{

$a = test\_input($\_POST["sender"]);

// check if name only contains letters and whitespace

}\*/

//cid-----------------------------------

if (empty($\_POST["dname"]))

{$bErr = "<font color='red'>Please enetr Drug Name </font>";}

else

{

$b = test\_input($\_POST["dname"]);

// check if e-mail address syntax is valid

if (!preg\_match("/^[a-zA-Z]\*$/",$g))

{

$bErr = "<font color='red'>Please enter correct drug name</font>";

}

}

//

if (empty($\_POST["ddosage"]))

{$cErr = "<font color='red'>Please enter Drug dosage </font>";}

//housetype

if (empty($\_POST["quantity"]))

{$dErr = "<font color='red'>Please enter quantity</font>";}

if (empty($\_POST["price"]))

{$eErr = "<font color='red'>Please enter price</font>";}

if (empty($\_POST["expire"]))

{$fErr = "<font color='red'>Expire Date is required</font>";}

if (empty($\_POST["country"]))

{$gErr = "<font color='red'> Please enter manufactured country</font>";}

if (empty($\_POST["bname"]))

{$hErr = "<font color='red'>Drug brand is required</font>";}

}

function test\_input($data)

{

$data = trim($data);

$data = stripslashes($data);

$data = htmlspecialchars($data);

return $data;

}

?>

<form method="post" action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]);?>">

<table cellpadding="1" width="100%" align="center"

cellspacing="0" style="margin-left: 50px" >

<tr>

<th colspan=2>

<h1><font size="6" color="#2439ca"> Drug Registration</font></h1>

</th>

</tr>

<tr><td><b>Drug ID:</b></td><td>

<input type="text" name="did" size="25" placeholder="Enter drug id."

style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;" >

<span class="error"> <?php echo $aErr;?></span></td></tr>

<tr><td><b> Drug Name:</b></td><td>

<input type="text" name="dname" size="25" placeholder="Enter drug name ."

style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

<span class="error"> <?php echo $bErr;?></span>

</td>

</tr>

<tr><td><b> Drug Dosage(mg) :</b></td><td>

<input type="text" name="ddosage" onKeyPress="return isNumberKey(event); size="25" placeholder="Enter drug dosage."

style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

<span class="error"> <?php echo $cErr;?></span></td>

</tr>

<tr><td><b>Quantity:</b></td><td>

<input type="text" name="quantity" size="25"onKeyPress="return isNumberKey(event);" placeholder="Enter quantity ."

style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;" >

<span class="error"> <?php echo $dErr;?></span></td></tr>

<tr><td><b>Price(Birr):</b></td><td>

<input type="text" onKeyPress="return isNumberKey(event);" name="price" size="25" placeholder="Enter price ."

style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;" >

<span class="error"> <?php echo $eErr;?></span></td></tr>

<tr><td>

<b>Expire Date:</b></td ><td><input type="text" name="expire" size="25" placeholder="enter expire date" id="dateStart" style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

<span class="error"> <?php echo $fErr;?></span></td>

</tr>

<tr><td>

<b>Manufactured By:</b></td ><td><input type="text" name="country" size="25" placeholder="enter company" id="" style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

<span class="error"> <?php echo $gErr;?></span></td>

</tr>

<tr>

<td ><b> Brand Name:</b></td>

<td><input type="text" name="bname" size="25" placeholder="Enter brand name " value="" style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

<span class="error"> <?php echo $hErr;?></span></td>

</tr>

<tr><td>

<b>Registration Date:</b></td ><td><input type="text" name="date" size="25" placeholder="enter date" readonly value="<?php echo date('Y-m-d');?>" id="datereg" style=" margin-bottom: 10px;width: 180px;height: 30px;border:1px Solid #071f56;">

</td>

</tr>

<tr>

<p><input type="hidden" name="status"/></p>

<td>

<button type="submit" name="submit" style="background-color:#003366;color: #fffdfd;width: 100px;height: 30px;border:1px Solid #071f56;">Register</button>

</td>

<td>

<button type="reset" style="background-color:red;color: #;width: 100px;height: 30px">Reset</button>

</td>

</tr>

</table>

</form>

<?php

if($aErr==TRUE)

echo " <font color='red'>error please enter valid data</font>";

elseif($bErr==TRUE)

echo "<font color='red'>error please enter valid data</font> ";

elseif($cErr==TRUE)

echo "<font color='red'>error please enter valid data </font>";

elseif($dErr==TRUE)

echo "<font color='red'>error please enter valid data </font>";

else {

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

{

$a=$\_POST['did'] ;

$b= $\_POST['dname'] ;

$c=$\_POST['ddosage'] ;

$d=$\_POST['quantity'] ;

/\*$f=$\_POST['location'] ;\*/

$e=$\_POST['price'] ;

$f=$\_POST['expire'] ;

$g=$\_POST['country'] ;

$h=$\_POST['bname'] ;

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

$date=$\_POST["date"];

$con=mysql\_connect("localhost","root","");

mysql\_select\_db("drug",$con);

$insert=mysql\_query("insert into drug(drug\_id,drug\_name,drug\_dosage,quantity,price,expire\_date,company,drug\_brand,reg\_date,status) values('$a','$b','$c'+'mg','$d','$e','$f','$g','$h','$date','available')");

if($insert)

{

echo '<Script>alert("Drug Information sucessfully registerd")</script>';

}

else

{

echo mysql\_error();

}

} }

?>

</div>

</body>

</html>

**CHAPTER FIVE**

**IMPLEMENTATION AND TESTING**

**5.1 Introduction**

The implementation phase is the most crucial phase in which it transforms the design and analysis of the system into a tangible system by writing the code to the system to be developed and make it operational and applicable by testing and debugging the functionalities that are done. This phase involves the construction of the actual project result. during this phase that the project becomes visible to outsiders, to whom it may appear that the project has just begun. This makes the implementation stage more essential step to develop the required system. So, it is the most vital and necessary stage in achieving a successful system and in giving the users confidence that the new system will work and be effective by testing the system that is already implemented. In this phase, the production system is installed, initial user training is completed, user documentation is delivered, and the post implementation review meeting is held. When this phase is completed, the application is in steady state production. Once the system is in steady-state production, it is reviewed to ensure that we met all of the goals in the project plan for a satisfactory result.The result of this phase consists of source code, together with documentation to make the code more readable. This is what we call software implementation. The purpose of these activities is to convert the final physical system specification into working model with reliable software and hardware, document the work that has been done, and provide help for current and future users and take care of the system.

**5.2 Testing Procedures**

The test plan is designed to analyze the logic used in the implementation of the drug inventory system. The tests will allow us to ensure correct program flow, and to determine the error-handling capability of the system.

Once coding has begun, the testing process can be beginning and proceed in parallel. As each program module is produced, it can be tested individually, as a part of larger program, and then as a part of larger system.

* Unit testing: Unit test is a way of testing each of the system functionality independently. Accordingly, the team has tested each one of the major activities and the rest accompanying activities independently using different user input, different login mechanisms and any technique of fault finding so that an incorrect functioning of the activities was corrected at the right time.
* Integration Testing: Integration testing is testing in which a group of components are combined to produce output. Also, the interaction between software and hardware is tested in integration testing if software and hardware components have any relation.
* System testing: It is the final step of testing. In this system tested the entire system as a whole with all forms, code, modules. In this we tested all the functionalities in the System. All errors in the forms, functions, modules have been tested. Finally, System testing ensures that the entire integrated software system meets the desired requirements. It tests a configuration to ensure known and predictable results.

**5.3 Hardware software acquisitions**

To implement (develop) this project we shall use HTML, JavaScript for front end (developing  
Graphic user interface).  
Tools we will use additional software to different tasks.  
⮚Microsoft word 2010/2013  
⮚Microsoft PowerPoint 2010/2013  
⮚Xamp Web Server

**5.4 User manual preparation**

User manual preparation since the system is computerized ,everything important for the  
user will be explained and implemented while preparation of short training document when the  
system is deployed.

**5.5 Training**

Training manuals serve the important purpose of providing a consistent way to communicate instructions to employees about how to perform essential functions of their jobs by using the system. They benefit ICT officer responsible for educating workers about the system as well as employees themselves, by providing content and structure necessary to train new hires and to manage the performance of incumbent workers. To be effective, training manuals is based on functionalities and instructional objectives. Information should be provided about the processes and procedures employees are required to follow as well as tasks that form the basis of the jobs they are charged with performing.

## 5.6 Installation

Installation of our proposed system at minimum requires a computer to serve as a computer to run the program. In addition, WAMP or XAMPP software needs to be installed and configured so that the database and other interrelated functions can be process.

Generally speaking, to do this project we used PHP,HTML,JAVASCRIPT,CSS as front ende and XAMP Server as back end database.

## 5.7 Start-up strategy

Once the system has start-up strategies: the first start-up strategy is for the manager ,pharmasist,store coordinator and cashier who require the username and password to access the system in all cases of users. The owner accessibility part is restricted for the owner and the other are do as it. The users or customers start-up strategy part is the system home page which does not require the username and password and it can be viewed by anybody.

**CHAPTER SIX**

**CONCLUSION AND RECOMMENDATION**

**6.1Conclusions**  
In the process of developing Drug Inventory System for Wonji Shoa Hospital (DISWSH) we have learned a lot enough.

when we have go through the data collection part we collect all information about the system using some data collection method, in the analysis part we use our knowledge on the system analysis to analysis those collected data, In the design part we put forward our knowledge of Object Oriented design software engineering which support Iterative method developing software, and also of designing Database for database management system.

In the Implementation session, also we are beneficial we use currently accepted and familiar programming Languages PHP and its complimentary Database MYSQL server 2012.

Passing through the development of this software, it gives us a lot of knowledge on the area of computing science not only theoretically but also practically, which shows the challenges in the real world to develop software in the society to adhere data management.

**6.2 Recommendations**

The team recommends training to the Manager and the User how they use the software. The team also recommends that the Manager who has the information of the store coordinator, Manager, and pharmasist is fully responsible and ethical that must be keeping confidential.

**In the user side**: we recommended that after all the installation process of software in the institution computer users who use this software must have the basic knowledge on computer, and other related software to perform their tasks.

**In the organizations side:** The institution must have enough computers, cables, printer, scanner, and other network devices.

# Appendixes

1. How the existing systems work?
2. How store coordinator registers new drugs?
3. How store coordinator identify expired drugs ?
4. How pharmacist serviced customers?
5. How manager manage users?

**References**[1] 2010 - Beginning ASP.NET 4 in C# 2010 (Apress)

[2] Software engineering, second edition, by Shari, ©1999

[4] Essential.C.Sharp.3.0.For.dot.NET.Framework.3.5

[5] Wonji Shoa hospital