

**HARAMAYA UNIVERSITY**

**COLLEGE OF COMPUTING AND INFORMATICS**

**DEPARTMENT OF INFORMATION SCIENCE**

**HARAR BLOOD BANK MANAGEMENT SYSTEM**

**(WEB BASED)**

**BY: NAME ID**

**1. ABDIWAK BESHADA 0141/12**

**2. AMANU’EL ASMAMAW**

**3. DESALEGN ERMIAS**

**Advisor Name:**

**ABEBE SHEMELIS (MSc)**

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TABLE OF CONTENTS

[CERTIFICATE i](#_Toc453168472)

[DECLARATION ii](#_Toc453168473)

[ACKNOWLEDGMENT iii](#_Toc453168474)

[TABLE OF CONTENTS iv](#_Toc453168475)

[ACRONYMS x](#_Toc453168476)

[ABSTRACT xi](#_Toc453168477)

[CHAPTER ONE 1](#_Toc453168478)

[INTRODUCTION 1](#_Toc453168479)

[1.1 BACKGROUND OF THE PROJECT 1](#_Toc453168480)

[1.2 STATEMENT OF THE PROBLEM 2](#_Toc453168481)

[1.3 OBJECTIVES 3](#_Toc453168482)

[1.3.1 General Objective of the project 3](#_Toc453168483)

[1.3.2 Specific Objective of the project 3](#_Toc453168484)

[1.4 SCOPE AND LIMITATION OF THE PROJECT 3](#_Toc453168485)

[1.4.1 Scope of the project 3](#_Toc453168486)

[1.4.2 Limitation of the project 4](#_Toc453168487)

[1.5 SIGNIFICANCE OF THE PROJECT 4](#_Toc453168488)

[1.6 BENEFICIARIES OF THE PROJECT 5](#_Toc453168489)

[1.7 FEASIBILITY ANALYSIS 6](#_Toc453168490)

[1.7.1 Technical feasibility 6](#_Toc453168491)

[1.7.2 Operational feasibility 6](#_Toc453168492)

[1.7.3 Schedule feasibility 6](#_Toc453168493)

[1.7.4 Economical feasibility 7](#_Toc453168494)

[1.8 SYSTEM DEVELOPMENT METHODOLOGIES 9](#_Toc453168495)

[1.8.1 Data modeling techniques 9](#_Toc453168496)

[1.8.1.1 Data analysis methodology 10](#_Toc453168497)

[1.8.1.2 Data design methodology 10](#_Toc453168498)

[1.8.1.3Development tools 11](#_Toc453168499)

[1.9 TASK BREAKDOWN AND DELIVERABLES 12](#_Toc453168500)

[1.10 TIME SCHEDULE OF THE PROJECT 14](#_Toc453168501)

[CHAPTER TWO 15](#_Toc453168502)

[SYSTEM ANALYSIS 15](#_Toc453168503)

[2.1 INTRODUCTION 15](#_Toc453168504)

[2.2 EXISTING SYSTEM 15](#_Toc453168505)

[2.2.1 Existing System Description 15](#_Toc453168506)

[2.2.2 Problem of Existing System 15](#_Toc453168507)

[2.2.3 Alternative Solutions 16](#_Toc453168508)

[2.2.4 The Existing system performance is weak in case of following reasons 16](#_Toc453168509)

[2.2.5 Players of the existing system 17](#_Toc453168510)

[2.2.6 Forms and other Existing Systems Documents 17](#_Toc453168511)

[2.2.4.1 Donor enrollment form 18](#_Toc453168512)

[2.2.7 Business rules of existing system 18](#_Toc453168513)

[2.3 Requirement Gathering 19](#_Toc453168514)

[2.3.1 Requirement Gathering Methodologies 19](#_Toc453168515)

[2.3.1.1 Interview 20](#_Toc453168516)

[2.3.1.2 Record review 20](#_Toc453168517)

[2.3.1.3 Observation 20](#_Toc453168518)

[2.4 PROPOSED SYSTEM 20](#_Toc453168519)

[2.4.1 Overview of proposed system 20](#_Toc453168520)

[2.5 REQUIREMENT SPECIFICATION 21](#_Toc453168521)

[2.*5.*1 Functional requirement 21](#_Toc453168522)

[2.5.2 Nonfunctional Requirement 22](#_Toc453168523)

[*2.5.2*.1 User interface and human factor 22](#_Toc453168524)

[*2.5.2*.2 Documentation 22](#_Toc453168525)

[*2.5.2*.3Performance characteristics 22](#_Toc453168526)

[*2.5.2*.4 Error handling 22](#_Toc453168527)

[*2.5.2*.5 Quality Issues 22](#_Toc453168528)

[*2.5.2*.6 System Modifications 23](#_Toc453168529)

[*2.5.2*.7 Physical environment 23](#_Toc453168530)

[*2.5.2*.8 Security 23](#_Toc453168531)

[2.6 PLAYERS OF THE NEW SYSTEM 24](#_Toc453168532)

[2.7 SYSTEM MODEL 24](#_Toc453168533)

[2.7.1 Scenario 24](#_Toc453168534)

[2.7.2 Use Case Diagrams 26](#_Toc453168535)

[2.7.2.1 Essential Use case Diagram 26](#_Toc453168536)

[2.7.2.2 Proposed system Use case Diagram 28](#_Toc453168537)

[2.7.2.3 Use case documentation 29](#_Toc453168538)

[2.8 ACTIVITY DIAGRAM 44](#_Toc453168539)

[2.9 OBJECT MODEL 56](#_Toc453168540)

[2.9.1. Data Dictionary 56](#_Toc453168541)

[2.9.2. Class diagram 58](#_Toc453168542)

[2.9.3 Dynamic Modeling 59](#_Toc453168543)

[2.9.3.1 State chart diagrams 59](#_Toc453168544)

[2.9.3.2 Sequence Diagram 65](#_Toc453168545)

[2.10 USER INTERFACE DESIGN 79](#_Toc453168546)

[CHAPTER THREE 83](#_Toc453168547)

[SYSTEM DESIGN 83](#_Toc453168548)

[3.1 INTRODUCTION 83](#_Toc453168549)

[3.2 PURPOSE OF THE SYSTEM DESIGN 83](#_Toc453168550)

[3.3 DESIGN GOALS 83](#_Toc453168551)

[3.4 EXISTING SOFTWARE ARCHITECTURE 84](#_Toc453168552)

[3.5 PROPOSEDSOFTWARE ARCHITECTURE 84](#_Toc453168553)

[3.6 SUBSYSTEM DECOMPOSITION 84](#_Toc453168554)

[3.7 COMPONENT DIAGRAM 86](#_Toc453168555)

[3.8 DEPLOYMENT DIAGRAM 88](#_Toc453168556)

[3.9 PERSISTENCE DATA MANAGEMENT 88](#_Toc453168557)

[3.9 ACCESS CONTROL 90](#_Toc453168558)

[3.10 DETAILED CLASS DIAGRAM 91](#_Toc453168559)

[3.11 PACKAGE DIAGRAM 92](#_Toc453168560)

[CHAPTER FOUR 93](#_Toc453168561)

[IMPLEMENTATION AND TESTING 93](#_Toc453168562)

[4.1 INTRODUCTION 93](#_Toc453168563)

[4.2 CODING 93](#_Toc453168564)

[4.3 FINAL TESTING OF THE SYSTEM 96](#_Toc453168565)

[4.3.1 Black box testing 96](#_Toc453168566)

[4.3.2 White box testing 96](#_Toc453168567)

[4.4 USER MANUAL PREPARATION 98](#_Toc453168568)

[4.5 TRAINING 98](#_Toc453168569)

[4.6 INSTALLATION 98](#_Toc453168570)

[4.7 STARTUP STRATEGY 98](#_Toc453168571)

[CHAPTER FIVE 98](#_Toc453168572)

[CONCLUSION AND RECOMMENDATION 98](#_Toc453168573)

[5.1 CONCLUSION 98](#_Toc453168574)

[5.2 RECOMMENDATION 99](#_Toc453168575)

[5.3 FUTURE IMPROVEMENT 100](#_Toc453168576)

[APPENDICES 101](#_Toc453168577)

[Appendix I 101](#_Toc453168578)

[Appendix II 102](#_Toc453168579)

[REFERENCES 103](#_Toc453168580)

**List of Tables**

[Table 1 Lists of Hardware and Software costs 9](#_Toc453168186)

[Table 2 development tool 11](#_Toc453168187)

[Table 3 Task Breakdown and Deliverables 14](#_Toc453168188)

[Table 4 business rule1 18](#_Toc453168189)

[Table 5 business rule2 18](#_Toc453168190)

[Table 6 business rule3 19](#_Toc453168191)

[Table 7 business rule4 19](#_Toc453168192)

[Table 8 business rule5 19](#_Toc453168193)

[Table 9 business rule6 19](#_Toc453168194)

[Table 10 Use case description for Login 29](#_Toc453168195)

[Table 11 Use case description for manage account 30](#_Toc453168196)

[Table 12 Use case description for post information 31](#_Toc453168197)

[Table 13 Use case description for view report 32](#_Toc453168198)

[Table 14 Use case description for Approve 33](#_Toc453168199)

[Table 15 Use case description for view comment 34](#_Toc453168200)

[Table 16 Use case description for Hospital registration 35](#_Toc453168201)

[Table 17 Use case description for donation request 36](#_Toc453168202)

[Table 18 Use case description for generate report 37](#_Toc453168203)

[Table 19 Use case description for Give comment 38](#_Toc453168204)

[Table 20 Use case description for blood request 39](#_Toc453168205)

[Table 21 Use case description for collect blood 40](#_Toc453168206)

[Table 22 Use case description for donor registration 41](#_Toc453168207)

[Table 23 Use case description for blood distribution 42](#_Toc453168208)

[Table 24 Use case description for Manage stock 42](#_Toc453168209)

[Table 25 Data dictionary for Admin 56](#_Toc453168210)

[Table 26 Data dictionary for Donor 56](#_Toc453168211)

[Table 27 Data dictionary for Nurse 57](#_Toc453168212)

[Table 28 Data dictionary for Hospital 57](#_Toc453168213)

[Table 29 Data dictionary for Inventory manager 57](#_Toc453168214)

[Table 30 Access control 90](#_Toc453168215)

[Table 31 Test case to register 96](#_Toc453168216)

[Table 32 Test case to login 97](#_Toc453168217)

List of Figures

[Figure 1 Task Breakdown 13](#_Toc453171687)

[Figure 2 Project time schedule 14](#_Toc453171688)

[Figure 3 donor enrollment form 18](#_Toc453171689)

[Figure 4 Essential Use case Diagram 27](#_Toc453171690)

[Figure 5 Proposed system use case diagram 29](#_Toc453171691)

[Figure 6 Activity diagram for login. 44](#_Toc453171692)

[Figure 7 Activity diagram for Manage account 45](#_Toc453171693)

[Figure 8 Activity Diagram for Hospital registration 46](#_Toc453171694)

[Figure 9 Activity diagram for post new information 47](#_Toc453171695)

[Figure 10 Activity diagram for View report 48](#_Toc453171696)

[Figure 11 Activity diagram for Approve 49](#_Toc453171697)

[Figure 12 Activity diagram for View comment 49](#_Toc453171698)

[Figure 13 Activity diagram for Donation request 50](#_Toc453171699)

[Figure 14 Activity diagram for give Comment 51](#_Toc453171700)

[Figure 15 Activity diagram for Send blood request 52](#_Toc453171701)

[Figure 16 Activity diagram for Collect blood 53](#_Toc453171702)

[Figure 17 Activity diagram donor registration system 53](#_Toc453171703)

[Figure 18 Activity diagram for blood distribution 54](#_Toc453171704)

[Figure 19 Activity diagram for manage stock 55](#_Toc453171705)

[Figure 20 Class diagram 58](#_Toc453171706)

[Figure 21 State diagrams for Login 59](#_Toc453171707)

[Figure 22 State Diagram for donor registration 60](#_Toc453171708)

[Figure 23 State Diagram for view information 61](#_Toc453171709)

[Figure 24 State Diagram for add blood 62](#_Toc453171710)

[Figure 25 State Diagram for add new information 63](#_Toc453171711)

[Figure 26 State Diagram for approve request 64](#_Toc453171712)

[Figure 27 Sequence Diagram for login 65](#_Toc453171713)

[Figure 28 Sequence Diagram for Manage account 66](#_Toc453171714)

[Figure 29 Sequence Diagram for post information 67](#_Toc453171715)

[Figure 30 Sequence Diagram for View report 68](#_Toc453171716)

[Figure 31 Sequence Diagram for Approve 69](#_Toc453171717)

[Figure 32 Sequence Diagram for View comment 70](#_Toc453171718)

[Figure 33 Sequence Diagram for Hospital Registration 71](#_Toc453171719)

[Figure 34 Sequence Diagram for Donation request 72](#_Toc453171720)

[Figure 35 Sequence Diagram for give comment 73](#_Toc453171721)

[Figure 36 Sequence Diagram for Send blood request 74](#_Toc453171722)

[Figure 37 Sequence Diagram for Collect blood 75](#_Toc453171723)

[Figure 38 Sequence Diagram for donor registration 76](#_Toc453171724)

[Figure 39 Sequence Diagram for blood distribution 77](#_Toc453171725)

[Figure 40 Sequence Diagram for Manage stock 78](#_Toc453171726)

[Figure 41 User interface prototype for login 79](#_Toc453171727)

[Figure 42 User interface prototype for create account 80](#_Toc453171728)

[Figure 43 User interface prototype for comment 80](#_Toc453171729)

[Figure 44 User interface prototype for donor registration 81](#_Toc453171730)

[Figure 45 Home page 82](#_Toc453171731)

[Figure 46 Proposed software architectures 84](#_Toc453171732)

[Figure 47 Subsystem decomposition 85](#_Toc453171733)

[Figure 48 Component diagram 87](#_Toc453171734)

[Figure 49 Deployment diagram 88](#_Toc453171735)

[Figure 50 Persistent data management 89](#_Toc453171736)

[Figure 51 Detailed class diagrams 91](#_Toc453171737)

[Figure 52 Package diagram 92](#_Toc453171738)

# ACRONYMS

FMOH: Federal ministry of health

CDC: Central disease control and prevention

ERCS: Ethiopia Red Cross society

OOSD: Object oriented system development methodology

Reg.no: Registration number

Hep b: hepatitis b

Hep c: hepatitis c

ABO: blood group

Exp.date: Expired date

Fig : Figure

Php: Php: Hyper Text Preprocessor

Admin: Administrator

DB: Database

GUI: Graphical User Interface

HTML: Hypertext markup Language

INFO: Information

MS: Microsoft

MYSQL: Structured Query Language

CSS: Cascading style sheet

WBBMS: Web based blood bank management system

OS: Operating System

CDROM: Compact Disk Read Only Memory

# CHAPTER ONE

# INTRODUCTION

The project that going to be develop is about Web based blood bank management system for Harar blood bank. The main purpose of the project is to handle and maintain Harar blood bank management system and also provide efficient transfusion services.

The system manage blood transfusion process starting from donor registration, blood collection, blood testing, storing blood in blood stock and distribution of blood for the hospitals through patient name.

This project is intended to provide information about the availability of blood in emergency conditions their respective locations. Reservation date of Blood donation through online and maintaining the status of donors for Gathering Volunteers for blood bank and hospitals send request through patient name to get blood from blood bank. Our project can manage blood types, quantity and expiry dates for each category of blood that stored in blood transfusion unit. System shows total amount of blood inside the stock for efficiently management of blood bank in addition to that, this system show to the inventory manger which blood types are expired.

# 1.1 BACKGROUND OF THE PROJECT

In Ethiopia blood bank service introduced in 1969 on yikatet12 hospitals. Ethiopian blood bank supported by FMOH and CDC Separated from ERCS since 2004.

Blood bank system in Ethiopia has one main bank in Addis Ababa and 26 sub branch around all Ethiopia. North Gondar blood bank is one of 26 blood bank branches.

North Gondar blood bank was established by federal government and Amhara regional state since in 2006 E.C. this organization was begin giving small capacity of blood service. The aim of the organization is to provide efficient service to user, to increase the capacity to provide blood for the recipient, to increases the number blood donors by teaching the society and facilitating blood donating service for the blood donors. From time to time the capacity of it is increasing but the organization was working with manual system. Since the organization is using manual system this makes the employee to fail with data redundancy and erroneous data storing. Generally this organization was established to save the life of people who are affected by these problem like accidents, cancer, sickle cell, premature and surgery.

Ethiopian people’s are donating and accepting blood time to time, there has been a good rise in the number of people who donate blood but the system is very old and paper based, therefore we are very interested to make computerized the system “North Gondar blood bank management system”.

# 1.2 STATEMENT OF THE PROBLEM

In the current system documenting, writing, finding and searching of the specific information of the blood is done manual. The administrators cannot manage the blood stock starting from the blood collection, to blood screening, processing, storage, distribution and lastly transfusion through this system. Moreover, there is no logging function available So that each process or workflow cannot be traced from the database. The system not showed the expired blood. These types of system make the worker to document erroneous and redundancy information and it also consume the time of worker for completing specific task. So we have identified the following problem in the existing system.

* Document Mismanagement: Chances for losing the vital information related to hospital, blood and blood donors.
* Difficult to know amount of blood in stock.
* Error handling is not efficient
* Requires More Resources: Consumes more resources and costs such as paper, pen.
* It becomes tedious for a person to search blood in case of emergency.
* There is also no centralized database used to keep the donors' records.
* Security is less.
* The system not efficient, reliable, available and difficult to get data fast from the paper.
* The system does not show the inventory manager when the blood expired.
* Difficult to prepare organized report.
* Difficult to give pack number to collected blood.
* Difficult to know fit blood during blood transfusion service.
* Difficult for making comment the system user to blood bank services.
* Less awareness among people about blood donation and blood transfusion services.
* Difficult to know how match time have donor donated blood before.

# 1.3 OBJECTIVES

## 1.3.1 General Objective of the project

The general objective of this project is to develop web based Blood Bank management system for Harar city.

## 1.3.2 Specific Objective of the project

* Gathering requirements.
* Identifying and defining of the problem that the existing system have.
* Analyzing the existing system.
* Identifying functional and nonfunctional requirements.
* Design interactive user interfaces for the Harar city web based blood bank management system to users.
* Create a database to register blood donor, hospital and to store personal profiles for individual donor and hospital of the blood bank.
* Coding and testing.
* Implementation of the new system.
* Prepare the documentation and train the users.

# 1.4 SCOPE AND LIMITATION OF THE PROJECT

## 1.4.1 Scope of the project

* Donor registration, adds new blood, and hospital request.
* Keep the record of all donors.
* Search, update and discard the expired blood from database.
* Shows how much blood inside the stock and separates blood by their blood group.
* Gives pack number to the collected blood.
* Store screened unscreened and infectious blood separately.

## 1.4.2 Limitation of the project

Our project will not include the following.

* Not support all nation and nationalities of Ethiopian language it only use English language.
* The system cannot help people that have visual impairment because of lack of sound sensor machine.
* Because of lack time and knowledge in Android we can’t………………………..

# 1.5 SIGNIFICANCE OF THE PROJECT

The current system is not using computerized data processing System so making the system online will give many benefits from the following four aspects. These are:

**For Blood donors**

* + It provides the unique identification number easily at the time of blood donation camp which helps him for the future correspondence.
  + The system gives the unique user id and password for those donors who are applying online. This feature helps administrator to collect the information of all the donors area wise and blood group wise.
  + Donors can view the blood donation camp organizing at the different places.
  + Donor can check the status of the particular blood group just on one click sitting at home**.**

**For blood seekers**

* Seeker can get the information of the desired blood group from the central inventory
* Seeker can get the list of donors’ area wise, blood group wise if the desired blood group is not available in the central inventory.
* Seeker can get the information of that blood group which is not fit for blood transfusion.

**For the organization**

* The camp is getting rid from manual procedure. Now they to do the entries in the information system.
* The probability of error should be minimal.
* Information retrieval should be precise and effective.
* Report can be generated of donors, seekers, total consumption of the blood units and overall report.
* The organization can get the information which blood is in demand but rarely available and which blood group is rarely in demand but plenty in stock.
* Can get the information which is maximum cause for which the blood units are required like accidental cases, heart surgery, delivery cases.
* Can view the list of discarded blood units, they can also view the reason for which the blood units are discarded.
* Can view the central inventory as it shows the total account number of units of the particular blood group.

**For The Developers**

* When we develop this system our performance will increase.
* When we gather information by interview method our communication skill will be improved.
* Develop our team knowledge and skills how to conduct and prepare a website.
* Our problem solving skill will be increase.

# 1.6 FEASIBILITY ANALYSIS

To bring the successful completion of this project goals and objectives the feasibilities issues listed below has determined the project viability or the discipline of planning, organizing, and managing resources.

## 1.6.1 Technical feasibility

As the system has been built by concentrating on the graphical user interface concepts, the application can also be handled very easily with a novice user. This involves questions such as whether the most of the technology need for the system has exists in the Harar blood bank. Because the system is too customize according to Harar blood bank information transferring system. The system is self-explanatory and does not need any extra sophisticated training.

## 1.6.2 Operational feasibility

The system will provide adequate through put at desire time to the user and also give the need information in a timely usefully formatted way. The system also has security to gives access privilege providing account for an authorize person. This system provides help description to the user about how to use the system. And other technical modification on the system is done by the developers.

## 1.6.3 Schedule feasibility

The project is intending to be with in fixed time interval. Unless and otherwise we may fall in difficulty in cost estimation and as well as we may fall in the financial problem. To overcome such problems we have fixed the time interval in which we should finish the development of the whole time among different section of project.

## 1.6.4 Economical feasibility

As cost/benefit analysis, show the new system is developed using minimum cost and it give a lot of benefits such as advancing the services of the system, decreasing the work load of the users. The organization does not using any media advertising because it makes information online and every one can get the information from the site.

**Tangible benefits:** are benefits derived from the creation of an information system that can be measured in money and with consistency.

The team has identified the following:-

* Increase in flexibility of the modifying blood bank information system.
* Provide higher data backup by designing database for the blood bank.
* Reduce resource requirements or unnecessary wastage of resource in blood bank like paper, pen and decrease payment for advertising gives for TV, Radio etc.
* Increase the speed of activities during searching information.
* Increase blood bank management system performance
* More timely information for advertising blood transfusion services 24 hour.

**Intangible benefits:** are benefits derived the creation of an information system that cannot be easily measured in money and consistency.

The intangible benefits of the new system are:

* Increase in accuracy of blood bank detail information.
* Faster decision making by searching records from data base.
* Increase security by providing authorized user can access.
* Reduce work load of the organization system users faster decision making by searching records from data base.
* Error reduction during filling necessary information about blood donation process.
* Increase efficiency of blood bank management system performance.

**1**. **Cost Reduction and Avoidance**: - To calculate the following things will be consider.

* Total number of workers in Harar blood bank of the existing system= 15
* Average Salary of each workers per month = 1500.00Birr
* Total money required for payment per year= 15\*1500\*12= **270,000.000Birr**
* **Total** stationary materials like( pen ,print and paper ) expense daily in the existing system =150 birr
* Average monthly expense= 30\*150=4500.00birr
* Total stationary expense for year=4500\*12=**54000.00birr**
* **Total cost** = Total stationary expense per year + Total money required for payment per year=270,000.000Birr+54000.00birr=**324,000.00birr**
* Average Number of workers needed when the new system is deployed= 8
* Average salary of each of them per month = 1800.00Birr
* Total money required for payment per year= 8\*1800\*12= 172,800.00Birr
* And total stationary expense per year in the new system= 15000.00birr
* **Total cost** required per year in the new system=172,800 + 15000=**187,800.00birr**
* Difference between before and after deployment money required for expense
* Cost Reduction and Avoidance= 324,000.00birr -187,800.00Birr= **136200.00Birr**

**Net Profit** == **136200.00Birr**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Stationary Costs   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Name | Unit | Amount | Unit price | Total price | | Pens | Piece | 20 | 4birr | 80 birr | | Copy | - | - | 200 | 200 | | Note book | 1 | 1 | 45 | 45 | | Paper | Mass | 1packet | 120 | 120 birr | | Transportation | - | 10 | 12 | 120 | | **Total** | | | | 565 birr | |

Table 1 Lists of stationary cost

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Types of cost | Name | Quantity | Unit Price | Total price |
| Hardware cost | Computer | 1 | Free | Free |
| Flash(8GB) | 1 | 150 | 150 |
| CD ROM | 1 | 10 | 10 |
| Print | - | 200 | 200 |
| Other material | - | 300 | 300 |
| Software cost | Xampp server | 1 | Free | Free |
| Notepad++ | 1 | Free | Free |
| Edraw max | 1 | Free | Free |
| Microsoft office 2007 | 1 | Free | Free |
| Microsoft vision | 1 | Free | Free |
| Window 7 OS | 1 | Free | Free |
| Total cost | -- | -- | -- | 660 |

Table 1 Lists of Hardware and Software costs

# 1.7 SYSTEM DEVELOPMENT METHODOLOGIES

## 1.8.1 Data modeling techniques

This project involves building a dynamic web-based blood bank management system. In order to achieve our project, an appropriate software design methodology would be chosen **iterative data model.**

Typically iterative development is used in conjunction with incremental development in which a longer software development cycle is split into smaller segments that build upon each other.

We choose this iterative data model because of it:-

* Building and improving the product step by step.
* Can get the reliable user feedback.
* Less time is spent on documenting and more time is given for designing.
* Can only create a high-level design of the application before we actually begin to build.

The phases which come under the iterative data model method are as follows:

* Requirement gathering
* Requirement Analysis
* Designs
* Implementation and testing

### 1.7.1.1 Data analysis methodology

After gathering different information from stakeholders the project team has analyzed requirements by using Unified Modeling Language models like use case diagram, sequence diagram and class diagram. Since:-

* UML is a modeling language widely used to visualize the object oriented designs.
* UML makes it easy to visualize the software design.
* UML diagrams can be easily decoded and converted into most of the popular object oriented programming languages.

### 1.7.1.2 Data design methodology

The team plan to use the object oriented system analysis and design Development Methodology for the development of the system among the different methodologies. Because it is better way to construct, manage and assemble objects that are implemented in our system.

We used OOSAD because of the following important features:

**Increase reusability**: - the object oriented provides opportunities for reuse of blood bank information easily updating or modifying by the form.

**Extensibility: -**when you to need to add new feature to the blood bank system you only need to make changes in one part of the applicable class.

**Improved quality**: -blood bank information management system improved quality and efficiency to blood transfusion services effectively by accept system user feedback and also easily managing the blood stock.

**Real-World Modeling:**  Object-oriented systems tend to model the real world in a more complete fashion than do traditional methods.

**Reduced maintenance cost**: - Software organizations currently spend significant resources maintain operating system by developing manual documentation of our system so the object oriented development methods helps us to overcome this problem.

**Managed complexity**:-The object oriented methods solve our system complexity in the following way, by design our system software expectation that it will need to be modified and being able to respond quickly when our system environment changed.

### 1.7.1.3Development tools

The team plan to use the following software Development tools for the development of the system among different available tools.

|  |  |  |
| --- | --- | --- |
| **Activities** | | **Tools/program** |
| Documentation | | MS word 2016 |
| Design | | EdrawMax |
| Editing | | Paint |
| Client side script | | java script |
| Database server | | MYSQL server |
| Interface | | Html |
| Presentations | | PowerPoint |
| Web server | Apache XAMPP server | |
| Implementation | HTML, PHP, Visual Studio Code, CSS | |

Table 2 development tool

# CHAPTER TWO

# SYSTEM ANALYSIS

# 2.1 INTRODUCTION

In this chapter this project discuss about topics like how the current system is operating and how the proposed application intend to replace the existing system. The different requirement analysis techniques are also discussed under this chapter with their results found from those techniques. The major activities performed or identified are: modeling the function of the use case, identifying actors, identifying use case, constructing use case model and use case scenarios and final designing of user interface.

# 2.5 SYSTEM REQUIREMENT SPECIFICATION

The functional and nonfunctional requirement of the proposed system is identify from requirement use cases associated with each actor and use case interaction. This enables the project team to have a clear idea about the structure and content of the information system.

## 2.*5.*1 Functional requirement

Functional requirements capture the intended behavior of the system. The proposed system is designed to do the following functionalities:

* Retrieve blood donors and hospitals from a database; the user/employee searches this information whenever it is required.
* Renew blood donors, blood group, hospital and blood testing information; administrator can update this information by assigning the new value to the old value.
* Discard old information from a database and infectious blood.
* Store new donors, hospital, blood group record in database, this is done by only privileged users of the bank.
* Generate of reports about the work of north Gondar blood bank management system by date per years per division of resource in a given time.
* Register and Keep record of donors and recipients in the database.

## 2.5.2 Nonfunctional Requirement

The non-functional requirement of the system deals with how well the system provides service to the user [1].

### *2.5.2*.1 User interface and human factor

Since users of the system will interface with the software to be deployed on a personal computer.

* Users can easily input and retriever customers profile and history
* Users easily navigate and access our web page by using user interface designed
* The system must be compatible with any environment and user friendly

### *2.5.2*.2 Documentation

Documentation will help the project team to make a knowledge management and also used for users to guide how to operate the system. Therefore it is a necessary requirement and it helps for maintenance purpose. The documentation is including proposal, project report, and final document.

### *2.5.2*.3 Performance characteristics

Since the system is going to be accessed by different users with different needs, it should be capable of handling and processing their queries quickly. Besides the software, Hardware will also be a great factor in the systems’ performance. Generally, the system should be able to handle many users and it will be responsive.

### *2.5.2*.4 Error handling

Errors could rise from users and from the system. Errors that occurred from the wrong doing of users will be handled by appropriate exception handling mechanisms. Generally, the system must handle the error and should display error message if the user inputted the characters that are mismatched to corresponding data types.

### *2.5.2*.5 Quality Issues

Since the system to be developed is web based and used different latest software when it will develop, the system should a fast and efficient service to all users. Adaptability, availability, flexibility, and reliability are the key issues of this requirement. Use suitable software and hardware to develop system, will able to achieve this requirement.

* **Availability:-**the system shall be available at any time for those who want to use it but it may be out of use when the power is turn off and if there is no connection.
* **Usability:-**

By training users to become familiar with the system and by designing user friendly interface, the end users are able to place an order within few response times. The system shall have a help support.

* **No Redundancy:-**The proposed system can be avoided reputation of data anywhere in the database.

### *2.5.2*.6 System Modifications

The System modification can be achieve easily because the system is going to be designed using an object oriented approach. The team would recommend that further work should be done on the system in order to make the system perform better like official website of others. For example currently, the system will not perform different function.

### *2.5.2*.7 Physical environment

The server must be put on a place that has high security room. And the client must put in the local area it must connect with server.

### *2.5.2*.8 Security

The administrator should provide high security interface for user and protect their personal data. The system administrator should regular evaluate risk, monitoring abnormal status and backup data. We are going to develop a secured database. There are different categories of users namely Administrator, Nurse, Lab technician, Donor who will be viewing either all or some specific information from the database. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, append etc. All other users only have the rights to retrieve the information about database.

* The system shall provide high level of security by blocking anyone to view system secured page.
* The external security should be provided by given the login authentication.

# 2.7 SYSTEM MODEL

## 2.7.1 Scenario

This describes a particular sequence of activities within a use case. Flow of event Describes how and when use case starts and ends [1].

1. Scenario name: **Login.**

The admin enter username and password and select login option, then the system display home page for the admin

2. Scenario name: **Manage account.**

First admin must login into the system and the system display admin page then the admin select one of the listed links, for example if he wants to create new account click to create account link and system displays create account form then the admin fill correctly needed information and then the system displays account successfully created message.

3. Scenario name: **Post info.**

First the admin must login into the system and the system displays admin page then admin select add info menu and the system display rich text box form when the admin fill the form and select submit button, then the system display successfully added message.

**4.** Scenario name: **Hospital Registration**

First the admin must login into the system and the system displays admin page then admin select hospital registration menu and the system display registration form when the admin fill the form and select register button, then the system display hospital successfully registered message.

**5.** Scenario name: **Donation request**

First donor login into the system and the system display donor page, donor select donation request link and the system display donation request form the donor fill the donation request form and select send button then the system generate successfully send message.

7. Scenario name: **View report.**

First the system users must login into the system and the system display admin page then admin select view report menu the system display view report form and admin enters report date and select submit button then the system displays viewed report message.

8. Scenario name: **Approve**

First the admin must login into the system and the system display admin page then admin select approve request menu and the system display requested information and check the requested information and if it is correct the system generate successfully approved message.

9. Scenario name: **View comment.**

First the system user must login into the system select view comment menu then the system display the feedback given by the customer.

10. Scenario name: **Give comment.**

The system display user page and the user select comment the system link

then the system display the contact us page with feedback form, when the customer or the visitor fill the required field select submit after that the system display thanks for give us comment message.

11. Scenario name: **blood request.**

First the hospital admin must login into the system and system display hospital page, hospital admin select blood request link and the system display request form and admin fill request form and select send button then the system generate your request is successfully sent message.

12. Scenario name**: collect blood**

First Nurse must login into the system and system display nurse page, the nurse select collect blood link and the system display collect blood form then nurse fill collected blood information, the system check the filled info and if it is correct it generate the blood is successfully recorded message.

13. Scenario name: **donor registration**

First Nurse must login into the system and system display nurse page, the nurse select donor registration link and the system display registration form then nurse fill donor information, the system check the filled info and if it is correct it generate the donor is successfully registered message.

14. Scenario name: **Distribution**

First inventory manager must login into the system and the system display inventory manager page, the manager select distribution link and the system display distribution form and manager search the matched blood if exist distribute and select distribute button then the system generate successfully distributed message.

15. Scenario name: **Manage stock**

First inventory manager must login into the system and the system display inventory manager page, the manager select manage stock link and the system display manage stock form and manager select update, register or discard blood link if the manager want to discard the expired blood select it by its pack number and select discard button then the system generate blood is successfully discarded message.

## 2.7.2 Use Case Diagrams

The second step is to construct the use case model which graphically represents the interaction of the system with the external environment. The major actors that plays major role out of the system are: - administrator, nurse, lab technician, inventory manager, hospital and donor the use cases incorporated in the system are:-Login, manage account, add new information, approve, view report, Register donor, register hospital, donation request, add new blood, collect blood, blood request, blood distribution and searching process.

The following figure specifies the use case model of the system.

### 2.7.2.1 Essential Use case Diagram

Essential use case modeling is a simplified abstract, generalized use case that captures the intentions of the user in a technology and implementation independent manner. It identifies use case and actors of the proposed system [3].

Post

Information

Viewreport

Approve

Request

Distribute

Manage

Stock

View

Comment

Manager

INVENTORY

MANAGER

Hospital

Registration

Donation

Request

Give

Comment

Blood

Request

Donor

Registration

Collect

Blood

Donor

Hospital

Nurse

Generate

Report

Figure 4 Essential Use case Diagram

### 2.7.2.2 Proposed system Use case Diagram

Post

Information

View report

Approve

Request

Distribute

Manage stock

View

Comment

Manage

Account

Admin

INVENTORY

MANAGER

Hospital

Registration

Donation

Request

Give

Comment

Blood

Request

Donor

Registration

Collect

Blood

Add new

Blood

Discard

Blood

Create

Account

Update

Account

Delete

Account

Donor

Hospital

Nurse

Login

<<Include>>

Extend

Extend

Extend

Extend

Extend

Generate

Report

Figure 5 Proposed system use case diagram

### 2.7.2.3 Use case documentation

The third step is to document each of the above use case events to determine the requirement use cases as described in the following section.

Table 10 Use case description for Login

|  |  |  |
| --- | --- | --- |
| Use case id | UC#1 | |
| Use case name | Login | |
| Actors | Admin, Donor, Hospital, nurse, Inventory manager. | |
| Description | The authentication for authorized users in the system to interact with the system Gondar web based blood bank. | |
| Goal | To be accessed by an authorized and trust system user | |
| Precondition | Any user must have user name and password. | |
| Basic flow of action | Actor action | System response |
| **Step1:**user activate the system  **Step3:**user enter user name and password | **Step2:**system show login interface  **Step4:** the system check the authentication of user name and password  **Step5:**system display user page |
| Post condition | System transfer control to user main screen to precede actions. | |
| Alternative action | **A.** If the username and password is invalid.  **1.** The system displays error message.  **2.** The system continues at **step 2** to fill user name and password again. | |

Table 11 Use case description for manage account

|  |  |  |
| --- | --- | --- |
| Use case id | UC#2 | |
| Use case name | manage account | |
| Actor | Admin | |
| Precondition | The System administrator must login to control the account | |
| Description | This activity is performed when the admin want to manage the account | |
| Goal | To control the system users activity. | |
| Basic course of action | Actor action | System response |
| **Step1:** admin enter user name and password  **Step4:** admin select mange account page :-  1.create account  2.update account  3.delete account  If create account  **Step6:**admin enter user account information  If update account  **Step10:**admin enter user account information to be updated  If to delete account  **Step13:** admin enter user account information to be deleted | **Step2:** the system check the authentication of user name and password  **Step3:**the system display admin page  **Step5:** System display create account page.  **Step7:**system check created user account information  **Step8:**System creates user account  **Step9:** System display update account page.  **Step11:**system check updated user account information  **Step12:** System display delete account page.  **Step14:**system check deleted user account information |
| Post condition | The system admin successfully create, update and delete the account! | |
| Alternative course of action | 1. If invalid entry. 2. The system displays error message.   **2.** Go to **step 6** to fill again. | |

Table 12 Use case description for post information

|  |  |  |
| --- | --- | --- |
| Use case id | UC#3 | |
| Use case name | Post information | |
| Actor | Admin | |
| Description | Post new information to create awareness and use full information | |
| Goal | To post new information to the blood bank users and customers | |
| Precondition | The System admin must login to post new information | |
| Basic course of action | Actor action | System response |
| **Step1:** admin enter user name and password  **Step4:** admin select post information link  **Step6:**System admin enter post available information | **Step2:** the system check the authentication of user name and password  **Step3:**the system display main admin page  **Step5:** System display post information page.  **Step7:**system check posted information  **Step8:**System posted new information |
| Post condition | The system posted information will be viewed by an authorized users | |
| Alternative course of action | 1. If the new submitted information is not valid. 2. The system displays error message. 3. Go to**Step5** to post again. | |

Table 13 Use case description for view report

|  |  |  |
| --- | --- | --- |
| Use case id | UC#4 | |
| Use case name | View report | |
| Actors | Donor, Hospital, nurse, Inventory manager. | |
| Description | View the reported that is generated by admin | |
| Goal | To view about all activities that have been done in organization | |
| Precondition | The actors must be log in to the system | |
| Basic flow of action | Actor action | System response |
| **Step1:** user enter user name and password  **Step4:**user select view report link | **Step2:** the system check the authentication of user name and password  **Step3:**system display user page  **Step5:** system display report |
| Post condition | The admin view report | |
| Alternative action | **A.** If no new report found to be reported.  **1.** The system displays error message.  **2.** Go to **step4** to view report again. | |

Table 14 Use case description for Approve

|  |  |  |
| --- | --- | --- |
| Use case id | UC#5 | |
| Use case name | Approve | |
| Primary actors | Admin | |
| Description | For Approving those who send donation request to donate blood. | |
| Goal | Give decision for the donor appointment | |
| Precondition | Admin to approve must be view the donor donation request | |
| Basic flow of action | Actor action | System response |
| **Step1:**admin enter user name and password  **Step4:**admin select approve form  **Step6:** admin search request and  if the request is valid approve | **Step2:** the system check the authentication of user name and password  **Step3:**system display admin page  **Step5:**the system display approve  **Step7:**system check information  **Step8:**system display the request is approved |
| Post condition | Send for donor session date to donate the blood | |
| Alternative action | The request is may be disapproved | |

Table 15 Use case description for view comment

|  |  |  |
| --- | --- | --- |
| Use case id | UC#6 | |
| Use case name | View comment | |
| actor | Admin | |
| Description | Users can see the comments that are submitted from the user, customer and other parties. | |
| Goal | To view user feedback about the system. | |
| Precondition | Login to the system | |
| Basic flow of action | Actor action | System response |
| **Step1:** admin enter user name and password  **Step4:**admin select view comment link  **Step6:**admin view comment | **Step2:** the system check the authentication of user name and password  **Step3:**system display admin page  **Step5:**system display comment records |
| Post condition | Admin views the submitted comments. | |
| Alternative action | **A.** If there is no comment.  **1.** The system displays error message.  **2.** Go to **step4** to view comment again. | |

Table 16 Use case description for Hospital registration

|  |  |  |
| --- | --- | --- |
| Use case id | UC#7 | |
| **Use case name** | **Hospital Registration** | |
| actor | **Admin** | |
| Description | **for registration to get access from the blood bank** | |
| Goal | **To access the system and to be the system member.** | |
| Precondition | Go to the site and register | |
| Basic flow of action | **Actor action** | **System response** |
| **Step1:** admin enter user name and password  **Step4:Admin select registration link**  **Step6:Admin fill hospital registration form** | **Step2:** the system check the authentication of user name and password  **Step3:**system display admin page  **Step5:** the system display hospital registration form  **Step7:**system check hospital registration information  **Step8:**system Display successfully registered |
| Post condition | If valid successfully register if not valid Alternate action | |
| Alternative action | A. If not correctly fill to registered  1. The system displays error message.  2. Go to **step5** to fill again registration information | |

Table 17 Use case description for donation request

|  |  |  |
| --- | --- | --- |
| Use case id | UC#8 | |
| Use case name Use case id | Donation request | |
| actor | Donor | |
| Description | The donor should be visit the blood bank makes appointment date for the blood donation purpose. | |
| Goal | To specify the donation date. | |
| Precondition | Want to make appointment date for the donation | |
| Basic flow of action | Actor action | System response |
| **Step1:**Donor activate the system  **Step3:**donor select donation request link  **Step5:**fill the donation request form and send | **Step2:**system display main page  **Step4:**system display donation request menu  **Step6:**system save the request in DB |
| Post condition | If Get appointment date to donate blood | |
| Alternative action | 1. If donor do not fill the form correctly to send donation request   1. The system displays error message.  2. Go to **step5** to fill again donation request. | |

Table 18 Use case description for generate report

|  |  |  |
| --- | --- | --- |
| Use case id | UC#9 | |
| Use case name Use case id | Generate report | |
| actor | Admin | |
| Description | Generating the report that of activities have been done. | |
| Goal | To generate the required report information for users and customers | |
| Precondition | Generating to click generate button | |
| Basic flow of action | Actor action | System response |
| **Step1:** admin enter user name and password  **Step4:Admin select generate report link** | **Step2:** the system check the authentication of user name and password  **Step3:**system display admin page  **Step5:**system check report  **Step6:**system display the result |
| Post condition | Display the generated report | |
| Alternative action | A. If fail to generate  1.the system display error message  2. Go to **step6** to check again. | |

Table 19 Use case description for Give comment

|  |  |  |
| --- | --- | --- |
| Use case id | UC#10 | |
| Use case name | Give Comment | |
| actors | System user and customer | |
| Description | Comment the blood bank system about any thing | |
| Goal | To give the weakness and strength of the system | |
| Precondition | User must have valid email address comment the system | |
| Basic flow of action | Actor action | System response |
| **Step1:**User initiate the system  **Step3:**user select feedback link  **Step5:**user write comment about the system | **Step2:**system display user page  **Step4:**system display feedback form  **Step6:**system check comment information  **Step7:**system display comment submitted |
| Post condition | User send comment to the system | |
| Alternative action | 1. When fill to send the comment if not valid   1. The system displays error message.  2. Go to **step4** to fill again comment. | |

Table 20 Use case description for blood request

|  |  |  |
| --- | --- | --- |
| Use case id | UC#11 | |
| Use case name | blood request | |
| Primary actors | Hospital | |
| Description | Sending request for required blood unit, blood group. with the patient name just for the identification of blood accepter | |
| Goal | Asking blood from the blood bank for the patient. | |
| Precondition | Hospital send request to blood bank. | |
| Basic flow of action | Actor | System response |
| **Step1:**hospital enter user name and password  **Step4:**hospital select send blood request link  **Step6:**user fill the blood request in the name of patient | **Step2:** the system check the authentication of user name and password  **Step3:**system display hospital page  **Step5:**system display blood request form  **Step7:**system check blood request information  **Step8:**system display inserted request record |
| Post condition | Indirectly accept the required blood thorough patient name | |
| Alternative action | 1. If the hospital fails to fill the form correctly.   1. The system displays error message.  2. Go to **step6** to fill again the request. | |

Table 21 Use case description for collect blood

|  |  |  |
| --- | --- | --- |
| Use case id | UC#12 | |
| Use case name | collect blood | |
| Primary actors | Nurse | |
| Description | To Collect The Blood from voluntary donors by filling full information, | |
| Goal | To Collect The Blood from voluntary donors | |
| Precondition | Fill collected blood information | |
| Basic flow of action | Actor | System response |
| **Step1:**nurse enter user name and password  **Step4:**nurse select collect blood link  **Step6:** fill collect blood information  **Step8:**nurse print out record then give for donor | **Step2:** the system check the authentication of user name and password  **Step3:**system display nurse page  **Step5:**system display collect blood menu  **Step7:**system check collect blood information  **Step8:**system display collected blood record |
| Post condition | Submit collected blood information | |
| Alternative action | A. If nurse not enter valid entry to fill blood collection form  1. The system displays error message.  2. Go to **step6** to fill again the collected blood. | |

Table 22 Use case description for donor registration

|  |  |  |
| --- | --- | --- |
| Use case id | UC#13 | |
| Use case name | donor registration | |
| actor | Nurse | |
| Description | To register new donor and search the old donor for the blood collection mechanism | |
| Goal | To search the old blood donor. | |
| Precondition | Register new donor | |
| Basic flow of action | Actor | System response |
| **Step1:**nurse enter user name and password  **Step4:**nurse select view donor registration link  **Step6:**the volunteer old donor search() from donor registration and  If the new donor come fill the donor registration form  **Step8:**nurse view donor record information | **Step2:** the system check the authentication of user name and password  **Step3:**system display nurse page  **Step5:**system display donor registration form  **Step7:**the system check donor registration information  **Step8:**system display new donor information |
| Post condition | Register detail donor information | |
| Alternative action | **A.** If Nurse is filled invalid new donor registration information  1. The system displays error message.  2. Go to **step6** to register new donor or search old donor | |

|  |  |  |
| --- | --- | --- |
| Use case id | UC#14 | |
| Use case name | Distributed | |
| Primary actors | Inventory manager | |
| Description | **For Blood distribution.** blood accepter must be come using hospital blood donation request | |
| Goal | **To distribute the safe blood to the hospitals.** | |
| Precondition | Searching the blood fit from the stock | |
| Basic flow of action | Actor action | System responses |
| **Step1:** Enter User name & password  **Step4**:inventory manger select blood distribution link  **Step6:**search() from blood stock that fit with the blood accepter | **Step2:** the system check the authentication of user name and password  **Step3:**the system display inventory manager page  **Step5:**the system display distribution form  **Step7:**system check blood stock information  **Step8:**system display fit blood |
| Post condition | Distribute blood for the accepter | |
| Alternative action | A. If Filled entry to distribute blood is invalid  1. The system displays error message.  2. Go to **step6** to search fit blood from the stock for the distribution. | |

Table 23 Use case description for blood distribution

Table 24 Use case description for Manage stock

|  |  |  |
| --- | --- | --- |
| Use case id | UC#15 | |
| Use case name | Manage stock | |
| Primary actors | Inventory manager | |
| Description | Manage the amount of blood in stock too knows the amount of Blood per level and the expired blood. and also to insert new blood | |
| Goal | To manage the blood in the blood stock. | |
| Precondition | view the Details of the Blood Stock | |
| Basic flow of action | Actor | System response |
| **Step1**:enter user name and  Pass word  **Step4:**inventory manger select blood stock link  **Step6:**inventory manger select  1.register blood  2.discard blood  If select register blood  **Step7:**inventory manager fill blood registration form  If select discard blood  **Step11:**inventory manager check if blood expired  **Step12:**enter expired blood information and click discard | **Step2:** the system check the authentication of user name and password  **Step3:**the system display inventory manger page  **Steps5:**the system display mange stock form  **Step8:**system display blood registration form  **Step9:**system check register blood information  **Step10:**system display blood successfully registered  **Step13:**system display blood successfully discarded |
| Post condition | Add new blood to stock, view the Less amount of Blood per level and expired blood | |
| Alternative action | A. If invalid entry is filled to the inventory manger to add new blood or discard blood  1. The system displays error message.  2. Go to **step6** to fill again the add new blood or discard. | |