Acknowledgement

The satisfaction that accompanies the successful completion of any task in this project so far would be incomplete without the sincere expression of gratitude to the group of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement crown all the efforts with success. We return our thanks and honor to our almighty God who has continually remained faithful throughout the period of the project. Also our sincere gratitude's goes to our supervisor Mr.Samuel Olala for the guidance, inspiration and constructive suggestions that has helped me in the preparation of this project. Our colleagues can also never go unmentioned for they have greatly contributed to the success that has been realized so far in this project. God bless you all

ABSTRACT

Emergency situations, such as accidents, create an immediate and critical need for specific blood types. In addition, advances in medicine have also increased the need of blood for various treatments and surgeries. In short, blood is a saver of all existing lives. So in such emergency cases, it is difficult for hospital staff to collect blood in case of shortage of blood without having appropriate resources. Our system solves this problem. The main objective of the development of this application is to overcome the problems that exist in the current system.The blood drive system is intended to automate the blood bank activities such as finding donor, request for blood, initiating blood drive maintaining the details of all the blood groups that were available in the blood bank. This also helps the blood coordinators by providing information such as total number of samples available per each blood group, list of samples that belong to a particular blood group.

The blood drive system is being developed with a purpose of replacing all paper work done at during the process of donation. This will increase system performance, reliability and through put. This provides timely access to the samples. Simplifies the work makes the work easy under urgent needs of sample. The final result of this project is the development of web database application, which is the blood drive system

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LIST OF ABBREVIATIONS

RAM –random access memory

RUP-rational unified process

SDLC-system development life cycle

NIC-network interface card

HDD-hard disk

MIS-management information

PHP-hypertext preprocessor

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

The requirement of blood is an essential need when it comes to healthcare. For every second there will be an individual who needs blood for them to survive. Hospitals rely on donated blood units in their day to day operations. Hospitals and blood banks always strive to have sufficient supply of blood units in their blood storage. To meet the demand of blood, blood banks and other organizations carry out blood drives to mobilize masses towards donation of blood. This has always been done targeting masses such as schools and public places like parks and busy streets. This limits the blood donation to a specific place and a specific time. Those who will be available to donate blood in many cases don't have prior information about the blood drive exercise and therefore the success of the exercise is not guaranteed. The current system used for blood drives which is manual, leaves out a big number of people who are willing to donate blood but they cannot reach out to the blood donation centers. The proposed system is an Online Blood Drive Management System. This is a web-based database system that is to be used by the hospital's blood bank or blood center as a platform to ensure that the public can participate in nationwide blood donation events. In addition, the system also provides functions for the blood coordinators to manage the appointments made by the donors. This system also has the ability to keep track of the donor's donation records and the blood stock in the blood bank. The project is an online system that allows blood banks and other organizations that organize blood donations to carry out the blood donation successfully checking whether particular blood types are available within a given domain. This project also computerizes the blood and donation operations in a hospital blood bank in order to improve the record management efficiency due to the growing number of records of data.

1.2 EXISTING SYSTEM

The current system in use by the blood banks and most of the government hospitals is a manual system. To mobilize donors to donate blood, hospitals usually organize blood donation Camps at random places and the whole process is done manually. The system used does not allow for participation from people at different geographical locations. Also it has no centralized database to keep the donors' records. Each blood bank is having their own records of donors. If a donor makes donation in different hospital, no previous records can be traced except if the donor brings along the donation certificate. Hence, the donor is considered to be a first-timer if they make blood donation in a new place. The existing system is a manual system in which the donor first visits the hospital and checks for following factors.

Filling up the form

The hospital provides a form which should be filled by the donor. The donor fills up the appropriate information in the form. The employee in the hospital checks the information entered is correct or not and submits the form

Donating blood

After the form has been submitted the hospital checks the blood samples for any disease, if any disease is found the blood from the donor is not collected and if no disease is found the blood from the donor is collected

Searching record

In this if blood is required for the patient the hospital checks whether the blood is available to them if not they will search for the donor in files. This process is time consuming and requires more amount of time.

However existing system has the following drawbacks; it requires Manpower, extra work, error handling is not efficient, time consuming and it has more paper work.

1.3 PROPOSED SYSTEM

As we have seen that there limitations in the existing system like there is more requirement of manpower extra clerk work. Also there is possibility of errors while entering the information. So we have tried to implement a proposed system which is automated. In which we don't have to maintain separate record of different donors which was very tedious and time consuming in the manual system. The proposed system is less time consuming, more efficient, easy to operate and human error while entering the information can be avoided.

So here in this project we are using a database management system. A database is simply an organized collection of related data, typically stored on disk, and accessible by possibly many concurrent users. A database is an organized collection of data. The data is typically organized to model aspects of reality in a way that supports processes requiring information. Database management systems are computer software applications that interact with the user, other applications, and the database itself to capture and analyze data.

1.4 Statement of problem

According to deputy director of the Kenya National blood transfusion services (KNBTS), each year 400,000 units of blood are needed but the demand is not met. Currently, the public can only know about the blood donation drives through conventional media means such as radio, newspaper or television advertisements. Even if there is an electronic means, it is only used to publicize about that hospital or medical center blood donation drives provided if that hospital or

medical center is having an online portal. Besides, for those who want to make blood donation, they cannot make early reservation or booking on the session and day that they are available to donate blood. It is a very important facility for those who are very busy and yet enthusiastic people to know and be sure when they can make blood donation rather than trying to figure out where and when they can make blood donation when they available for donation. There is no nationwide information regarding the blood donation drive available on any of the portal. With blood drive system it will make it easier to monitor and manage the blood drive operations. The system in place for blood donation has a number of limitations, first the blood donation is limited to a specific center that has been organized and planned for the blood drive and this leaves out a bigger population willing to donate blood but cannot access the center. Also the system in place conducts blood drives plainly in that they do not have prior information about the various blood types they are going to collect; this is a challenge because they may be looking for particular rare blood types if they do not have leads to where they will get those particular types of blood. Without an automated management system, there are also problems in keeping track of donor details. In addition, there is also no alert available when blood quantity is below its level. This is where the blood drive system comes in place; customers can get all blood donation information in this system instead of going and searching around for it.

1.5 Scope of the project

The project will be executed in Blood banks, hospitals and organizations that organize for blood donation events and it aims at implementing and creating a platform that will help in blood donation and holding successful blood drives. Blood drive system will enable the citizens who are well-wishers to contribute towards saving others life by donating blood.

1.6 Limitations of the project

New donors will have to go to a hospital to examine their blood types.

Not everybody will be able to use the system especially the computer illiterate people.

1.7 Assumptions of the project

The hospital blood banks will provide information about their blood operations and how they manage the whole process of conducting blood drives and how they manage blood demand and supply.

1.8 OBJECTIVES

1.8.1 Main objectives

To develop a system that enables management of blood drive operations.

1.8.2Specific objectives

1. To develop a system that automates and makes it easier to search for rare blood types.

2. To develop a system that helps blood banks and organizations make decisions on where to perform blood donation exercise.

3. To develop a system that allows blood donors to search for nearby blood drives.

4. To develop a system that enables the blood drive coordinator to initiate blood drives

1.9 Hypothesis

1. There is a system that automates blood drives operations

2. There is no system that automates blood operations

3. There is a system that allows searching of nearby rare blood groups and also search for donors

4. There is no system that allows searching of nearby rare blood groups and search for donors

1.10 Significance

This project is necessary because it seeks to create a platform that will allow people to contribute towards saving lives of those people who need blood, with blood drive system it is easier and faster to trace matching blood samples by simply checking the records of donors on the system, it also helps in reducing death rates in that the system also contains donor's details and contact information so that those in need of blood don’t take much time in searching for blood donors whom they have less or no information about them.
The system will be also very effective in times of emergencies as it saves time and efforts for searching blood donors.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to review relevant literature information that is related and consistent with the objectives of the study. Important issues and practical problems will be brought out and critically examined so as to determine the current facts. This section will be vital as it determines the information that link the current study with past studies and what future studies will still need to explore so as to improve the knowledge. A blood drive is an activity, usually charitable, in which persons are requested to donate blood, either to maintain a general supply or in response to a specific shortage or emergency. The following are related work that has been done before on management of blood and management of blood drives and operations.

2.2 The Optimization of Blood Donor Information and Management System by Technopedia

The Optimization of Blood Donor Information and Management System by Technopedia proposed a web based application and android application so that the blood donors are available easily within the required time (Priyal, Saranya and Shabana, 2014). The donors who are nearby location are tracked by the android application using GIS. The purpose of website is to update the relevant information regarding the donors who have already donated blood in various hospitals, therefore when it is needed for any others they can view other donors where it can be accessed through this website. The web application has a system database where it consists of the information regarding existing and new donors and acceptors. The main problem is related with the information about knowing the details of donors in the city. The android application uses the GIS where the function is called as Geocoding which creates a point on a map to find the nearest locality of donor. A function of GIS is Onscreen digitization where the acceptor or patient who need the blood from donor for entering the data on the screen of the mobile phone.

2.3 Blood donor mobile

Launched in November 2013 by Chris Yoko to alert people in Washington D.C area where the closest blood drive is happening, sets reminders for the next time you are eligible to donate and connects to social media so you can post about your good deeds.

2.4 Gift for life

Gift4Life is system in Sri Lankan context that was developed as a web based blood campaign management system and also an android application. A blood donor information management system that supports interconnection with e-mail, notification alerts or feed backs and social

media. It also Includes the location based services and monitoring of statistics (report generating facility). Android application that has searching, filtering and navigating facilities, updating donor profiles, get and spread information, use of social media and location based services.

2.5 The American Red Cross blood donor app

It puts the power to save lives in the palm of your hands through the app users can schedule appointments, track total donations, earn rewards and invite others to join them on lifesaving team on average the red cross must collect about 15000 units of blood each day to meet the needs of accident victims, cancer patients, children with blood disorder and others

2.6 Bharat Blood Bank in India

Donors in India who want to donate blood can register at Bharat Blood Bank after reading the basic constraints of donating blood. Bharat Blood Bank requests the donor's name, password, and ID to allow the donor to access his account, which contains information about his date of birth, blood group, gender status, and weight, email ID, mobile no, city, address, state, and information about kidney, cancer and heart disease, and date of his last blood donation. After that, the people who need blood can browse the site and display the list of blood donors. BhartBloodBank.com allows recipients to search by area to have more reachable donors. The website provides the phone number to the recipients to make contact with the donor. Also, BharatBloodBank.com provides information about Blood Donation, such as tips, scientific information, facts, etc. It selects other blood banks for blood donation. BharatBloodBank.com offers these services for free. Further, the site doesn't use the collected information for any commercial purposes (Bharat Matrimony Group, 2005).

2.7 Online Blood Donation Reservation and Management System in Malaysia

It is an online blood donation reservation and management system in Malaysia used by the hospital blood bank. It is a web database that contains donor and blood stock information and it has the ability to keep track of the blood stock in the hospital and the donation records of the donors. This website will enable the public to make online reservations and includes online advertising for all the blood donation events. The hospital managers can manage the donors and blood stock appointments. The targeted users are the manager from National Blood Center, the public who want to donate blood, and the staffs from participating hospitals (TUAN, 2006).

2.8 A Web-based blood donor MIS in Uganda

A web-based blood Management Information System (MIS) was developed to improve the lives of the vulnerable in Uganda, besides providing adequate supply of blood. The study objectives were to develop a web based blood management system to help in the management of blood donors' records and make it easy to distribute the blood in different parts of the country, based

on each hospital's demands. With the use of IT technology, now relevant and timely blood donor reports easily can be generated and hence facilitate planning and decision making. It is an automated information system as a solution to routinely collected, accurate, and readily available information in blood transfusion services. It enables monitoring of the results and performance of the blood donation activity (Fredrick, 2009).

2.9 Blood Bank Management System in India

India has annual needs of about 5.0 million units of blood each year. And, it actually collects around 3.50 million units per year. A blood-bank management system was designed to fetch blood donors and receivers through the shared software platform. Donors can register on the website and enter their information. This system makes it readily available, safe blood and other blood components, which can offer moral and accepted way, consistent with the long term welfare of the community. That actively encouraged voluntary blood donations, motivates and Maintains good records of indexed blood donors, and educates the society about the advantages of donating blood. This also will work as a site for the interaction of best practices to reduce unneeded use of blood and assist the State in achieving higher efficiency and self-sufficiency in the blood operation (Alexander, etal, 2006)

CHAPTER THREE

3.0METHODOLOGY

3.1 Introduction

This chapter describes the methodology that will be used in developing the blood drive system. It entails description of tools and methods that the will be used implemented in achieving the objectives of the proposed online blood drive management system.

3.2 Development Methodology

3.2.1 System development life cycle

A system development methodology refers to the framework that is used to structure, plan, and control the process of developing an information system. When it comes to software development SDLC is the process that takes place. It consists of a phases that system developers follow during the process of system development. There are different methods of system development life cycle and for this project we will use waterfall methodology and rational unified process.

3.2.2 Waterfall model

Waterfall is conceptually straightforward because it produces a single deliverable for each step (requirements, analysis model, design model, code, etc), resulting in a single release. The fundamental problem is that it pushes risk forward in time, where it's costly to undo mistakes from earlier phases. An initial design will likely be flawed with respect to its key requirements, and furthermore, the late discovery of design defects tends to result in costly overruns or project cancellation. The waterfall approach tends to mask the real risks to a project until it is too late to do anything meaningful about them

3.2.3 Rational Unified Process

The Rational Unified Process (RUP) is an iterative software development process framework created by the Rational Software Corporation, a division of IBM since 2003. RUP is not a single concrete prescriptive process, but rather an adaptable process framework, intended to be tailored by the development organizations and software project teams that will select the elements of the process that are appropriate for their needs. RUP is a specific implementation of the Unified Process. Iterative processes were developed in response to these waterfall characteristics. With an iterative process, the waterfall steps are applied iteratively. Instead of developing the whole system in lock step, an increment (that is, a subset of system functionality) is selected and developed, then another increment, and so on

1. Requirements: all possible requirements of the system are captured in this and documented.

2. Analysis: in this phase we analyse all the gathered requirements whether the requirements are valid or invalid

3. Design: the requirement specification from the first phase is studied in this phase and system design is prepared. It helps in specifying hardware and system requirements and also helps in defining overall system architecture.

4. Implementation: When the design is fully completed, an implementation of that design is made by coders. Towards the later stages of this implementation phase, system components produced by different teams are integrated.

5. Testing: once the development is completed, testing phase starts and in his each unit or component is tested and making sure the developed components are working as expected

6. Deployment: once testing is completed and make sure there is no bug or defect or any kind of issue, then the project is deployed to production. Once product is deployed to production the end users start using the product

7. Maintenance

The system components have all been integrated. The system is installed within the company and training for the system begins

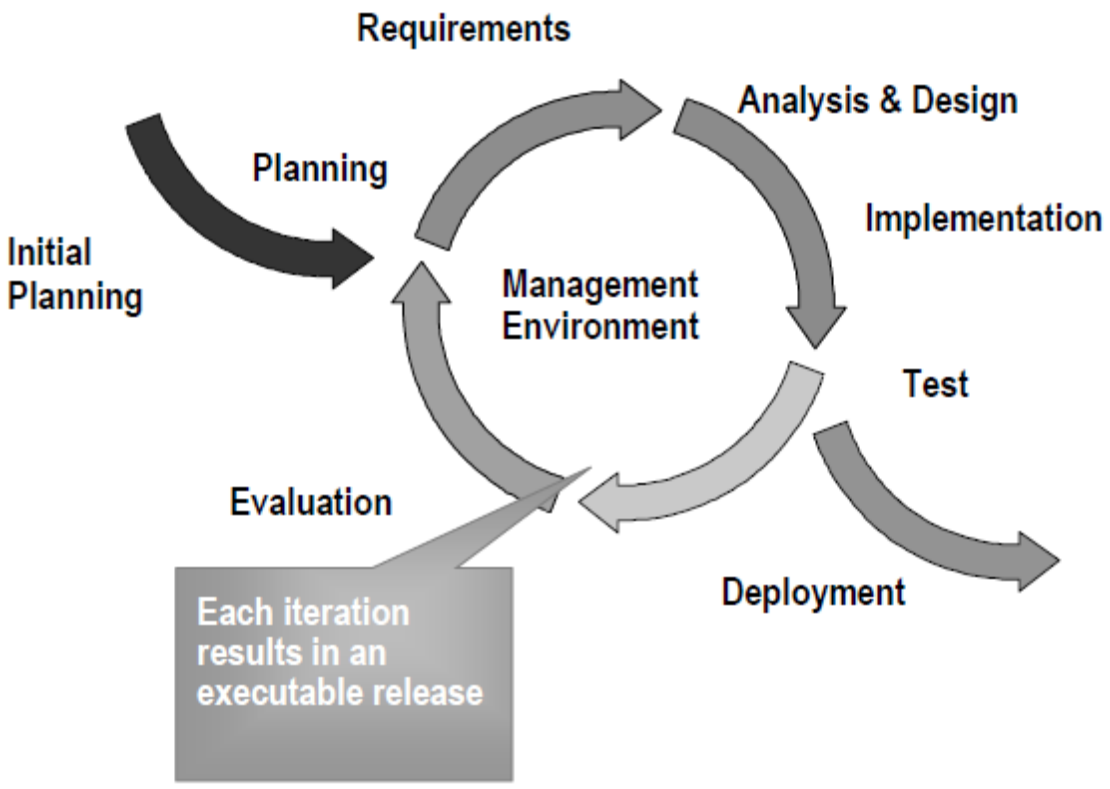

Figure 1 Rational unified process combined with waterfall methodology

3.3.3 Requirements phase

This is the first stage of the development of the system. In this stage we did a survey by gathering all the available information needed for the system elements and allocation of the requirements to the software. It also entailed determining the necessary information that was required for the system to be fully operational as well as function in the expected manner. The requirements that we captured were subjected to thorough scrutiny to determine the level of essence of it as well as eliminate the unwanted requirements. We did this based on the fact that though the requirements might have been raised by the target users, they might not be realistic or might not be so much important.

3.3.4 Analysis

In this phase we captured all possible requirements of the blood drive system. The important information from the planning phase was highly used in this phase, and the valid information gathered from the users was analyzed for the design stage. Other sources of information about system and the new requirements were also investigated at this time.

3.3.5 Design

After the requirements having already been captured and analyzed, the design of the information flow was done here. It is in this phase that the flow charts, dataflow diagrams and entity relationship diagrams were drawn to show flow of information and the activity diagrams were developed to show the connection that will exist between one information and another.

3.3.6 System coding and implementation

The system design needs to be implemented to make it a workable system; the defined procedures are transformed into control specifications by the help of a computer language. After having the user acceptance of the new system developed, the implementation phase begins. Implementation is the stage of a project during which theory is turned into practice. The major steps involved in this phase are:

1. Acquisition and Installation of Hardware and Software
2. Conversion
3. User Training
4. Documentation

3.3.7 Testing phase

Last phase is system testing done when development is complete and the system is ready for deployment. The testing phase come next to determine if the earlier intended objectives have been realized by then. Testing was done based on whether completeness will have been realized or functional testing that determined whether the software is doing what it is expected correctly and in the right way. User testing was then carried out to ascertain that the users will be contented with what will have been achieved then.

3.3.8 Deployment phase

Ones the system has undergone testing and passed all the validations and verifications, then the system would be termed to be acceptable and therefore it will be handed over to the owners for maintenance and operation as well.

3.3.9 Maintenance phase

As problems are found due to improper requirements determination or other mistakes in the design process due to changes in the users' requirement, changes are made to the system during this phase.

Advantages using waterfall and rational unified process

i) Waterfall is simple and easy to understand and use.
ii) The approach is very structured and it is easier to measure progress by reference to clearly defined milestones
iii) In waterfall design errors are captured before any software is written saving time during the implementation phase
iv) RUP is proactively able to resolve the project risks associated with the client's evolving requirements requiring careful change request management

v) Less time is required for integration as the process of integration goes on throughout the software development life cycle in rational unified process

CHAPTER FOUR

4.0 SYSTEM ANALYSIS

4.1 Introduction

Upon the completion of the Blood drive System, there are a number of things that will be expected of it not only by the prospected users but also for the administrator of the system. These will therefore form the requirements of the Blood Drive System and will be broadly classified in to the functional requirements and the Non-functional requirements.

4.2 Requirement analysis

4.2.1 Functional requirements

As we have seen that there limitations in the existing system like there is more requirement of manpower extra clerk work. Also there is possibility of errors while entering the information. So we have tried to implement a proposed system which is automated. In which we don't have to maintain separate record of different donors which was very tedious and time consuming in the manual system.

4.2.1.1 User Login

This feature is used by the User (donor/Admin) to login in to the system. They are required to key in the username and the password before they are granted permission to enter the system. The username and the password will be verified and the invalid username and password are not allowed to enter the system. All users are registered by the administrator. The system must only allow the user with valid username and password to enter the system

4.2.1.2 Register a new user

This feature is used to register donors and acceptors to the system to ensure that all details are available and valid. System ensures that the information supplied by the user is of the correct form.

4.2.1.3 Donor registration

This feature is used by the users who want to become donors to register as a donor. System ensures that the information supplied by the user is of the correct form.

4.2.1.4 Search

This feature is used by the users to search for donors and also search for available blood groups

4.2.2 Non-functional requirements

4.2.2.1 Reliability requirements

The Performance and response rate of the system should remain constant even as the number of concurrent users or data levels increase. Architecture used to build the system should be flexible enough to allow integration with other systems if need be in the future.

4.2.2.2 Usability requirements

The system should have an attractive, user friendly and interactive graphical user interface and it should be easy to use even with the person with least knowledge of computers.

4.2.2.3 Security requirements

This system must be highly secured in the login part. This is because some of the privileges are only allowed for the admin level.

4.2.2.3 Implementation requirements

In implementing the system, it uses php, html, cascading style sheet as the main programming language and tools. This forms the front-end and the middleware.

At the back-end, MYSQL is used to maintain the information in the database. This is formed by the databases and other data stores.

4.2.2.4 Portability requirement

The system needs to be portable on all major platforms. This system should not be restricted by any specific technology such as database, web server and operating system.

4.3 Hardware & Software Requirements for blood drive system

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4.3.1 Hardware requirements

Hardware

Computer or a laptop with the following specifications:

1. At least 2GB RAM (Giga Byte Random Access Memory)

   This will allow for faster loading of the testing platforms.

2. 2.0 GHZ (Giga Hertz) processor speed

   During the testing phase of the codes written, this will facilitate faster processing of the requests by the application as well as speed up responses for the earlier given requests.

3. At least 20GB hard disk capacity

   This is to provide the storage space for the application's workspace where the various codes that will be written will reside.

4. External Memory (External Hard disk) approximately 20GB

This is important in the project as it will enable for the process of backup for the purpose of security in case of system crash

5. At least one NIC (network interface card) for connection purposes

4.2.3 Software requirements

The software requirements are as follows

1. MYSQL

We used mysql server on the backend because it provides the ultimate in scalability ,sporting the capacity to handle deeply embedded applications with footprint of only 1 MB to running massive data warehouses holding terabytes of information. It also offers exceptional security features that ensure absolute data protection

2. Joomla

We used Joomla because it is open source and because it can be used to build any kind of website, right from the small, simple and personal blog to the large corporate blog.

3. Microsoft office

We used Microsoft office so as it aids in documenting our project and also for scheduling our project by using Microsoft office project.

4. Operating system at least windows xp

This will form the platform that will be used by the system to run.

5. A computer antivirus

This is the software that will help shield the developed files against corruption due to malware and viruses

6. yED graphical editor

This the software that we used during the design phase in drawing the usecases,activity diagram ,entity relationship diagram and others.

7. Apache

We used apache because it is free and it can run on pretty much any OS (linux,windows and Mac OS)

4.2.4 Work plan

Project timeline

Our project started on 18th October 2016 and it will end on 6th December as shown below:

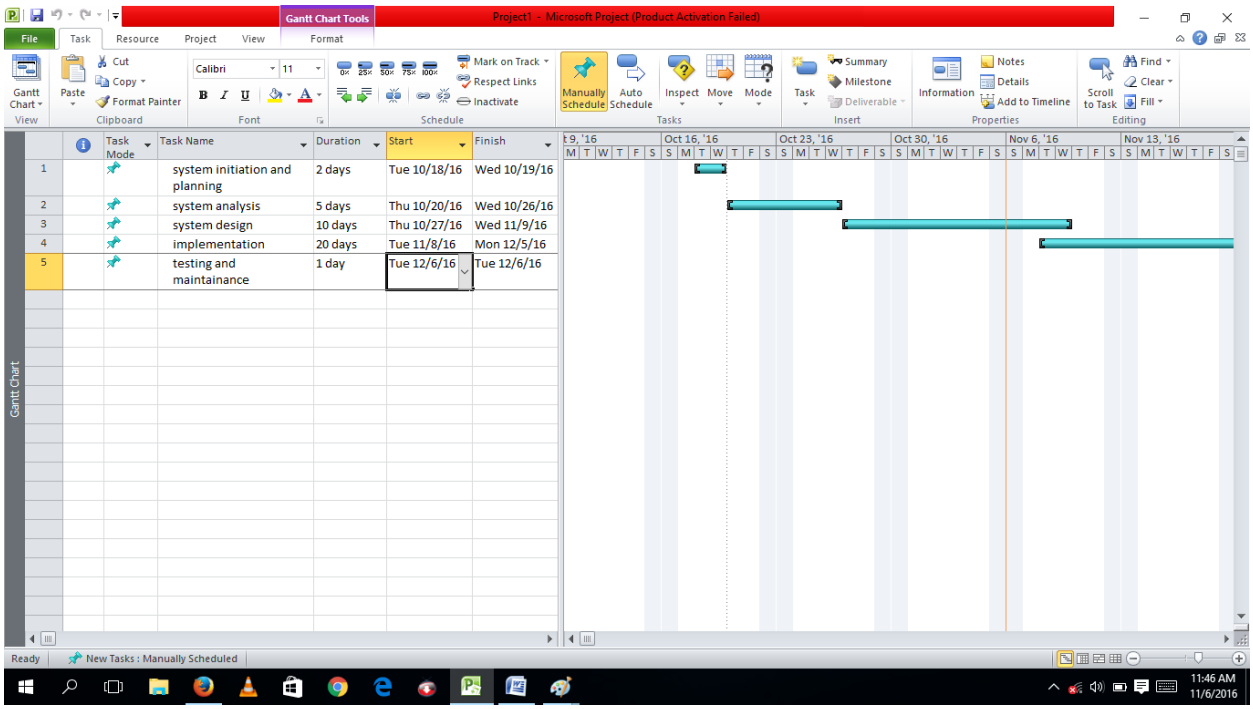

Figure 2 Timeline of the Project

4.2.5 Budget of the project

The cost of the project is as follows:

Item	Cost
CPU	60,000
Internet	1000
DVD costs	100
Printing and photocopying	1000
Implementation costs	60,000
Total	122100

Table 1 budget of the project

5.0 CHAPTER FIVE

SYSTEM DESIGN

5.1 Introduction

After the requirements having already been captured and analyzed, the design of the information flow was done here. It is in this phase that the flow charts, dataflow diagrams and entity relationship diagrams were drawn to show flow of information and the activity diagrams were developed to show the connection that will exist between one information and another.

5.2 Diagrams

5.2.1 Use case diagram

Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analyzed to gather its functionalities use cases are prepared and actors are identified. The purpose of use case diagram is to capture the dynamic aspect of a system. But this definition is too generic to describe the purpose.

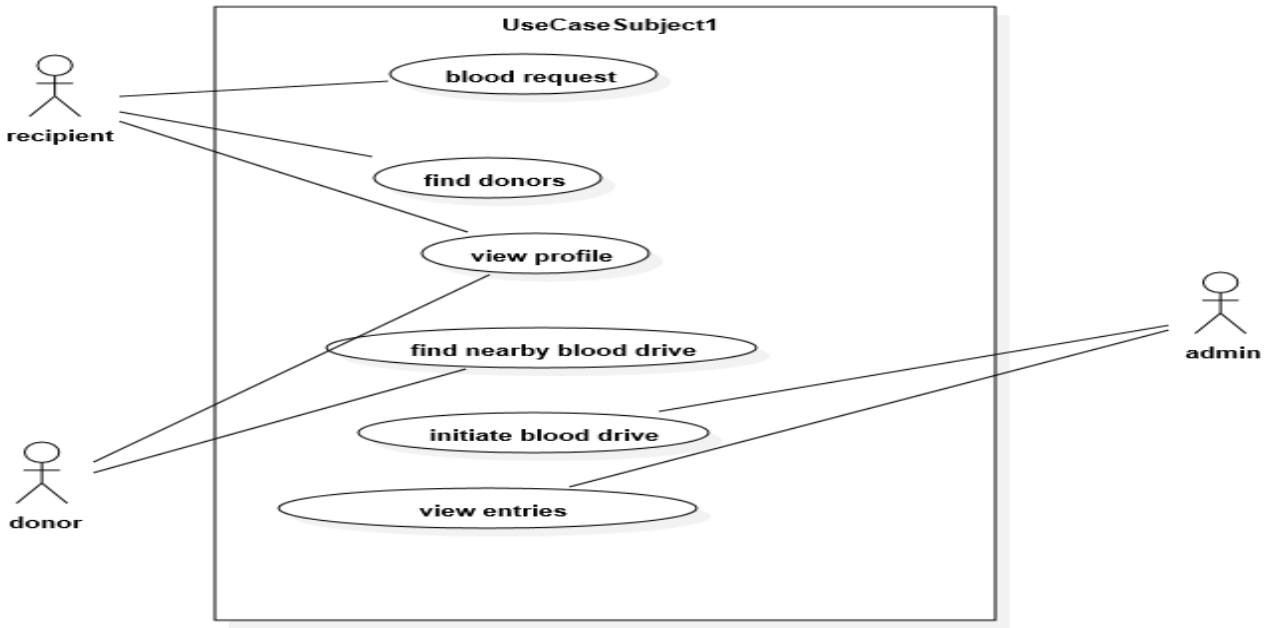

Figure 3 use case diagram

The above diagram explains the functions the administrator, the donor and acceptor are supposed to perform

5.2.2 Activity diagram

Activity diagrams capture the dynamic behavior of the system to show message flow from one activity to another. Activity diagram is basically a flow chart to represent the flow form one activity to another activity. The activity can be described as an operation of the system. So the control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Activity diagrams deals with all type of flow control by using different elements like fork, join etc. Activity is a particular operation of the system. Activity diagrams are not only used for visualizing dynamic nature of a system but they are also used to construct the executable system by using forward and reverse engineering techniques. The only missing thing in activity diagram is the message part. It does not show any message flow from one activity to another.

5.2.2.1 Admin activity diagram

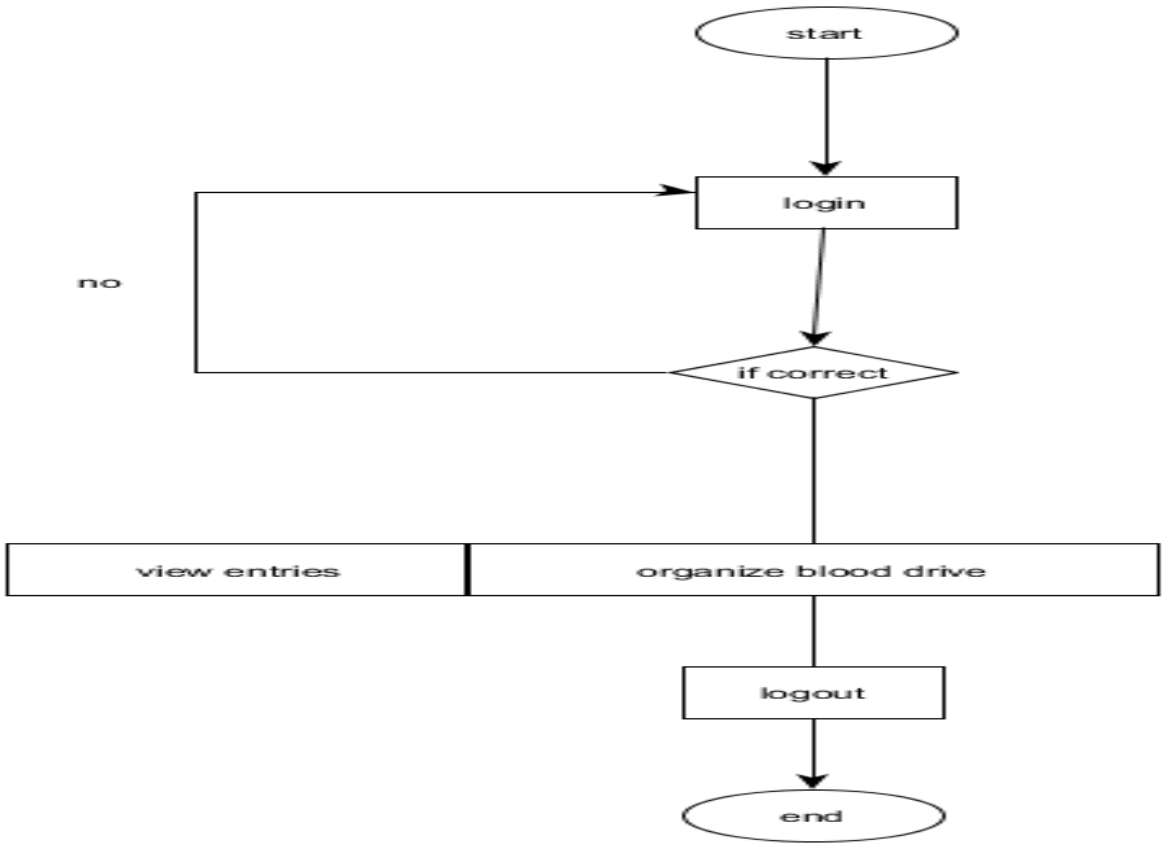

Figure 4 admin activity diagram

The above diagram shows all the activities/functions of the administrator though they are combined in one diagram. According to the diagram, administrator should first login to the system. If the username and password are correct, the system allows him to proceed. Then as

shown by the diagram, he can initiate blood drive, maintain donor records, add or remove donors and approve blood requests.

5.2.2.2 Donor activity diagram

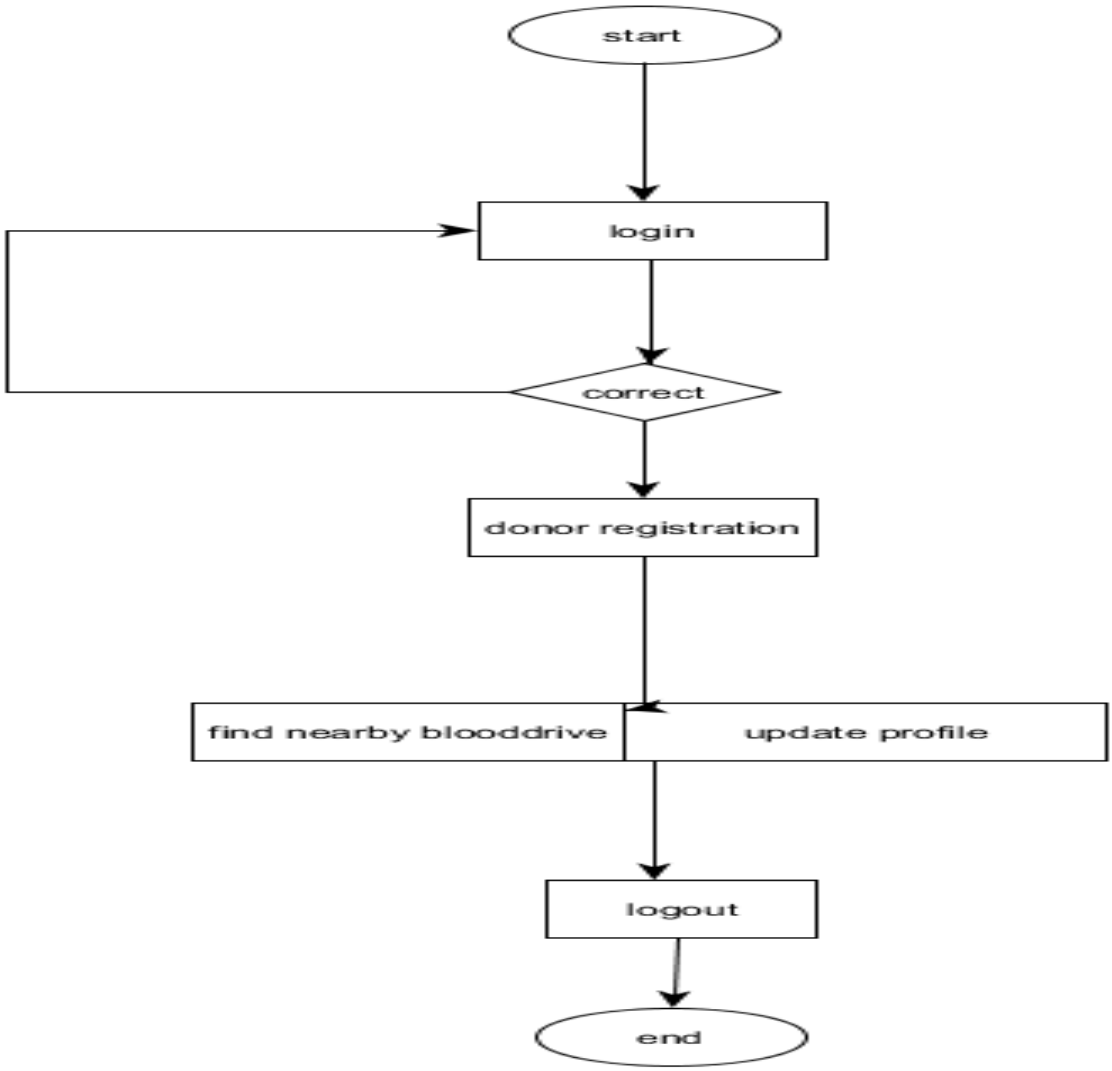

Figure 5 donor activity diagram

The above diagram shows all the activities/functions of donor though they are combined in one diagram. According to the diagram, donor should first login to the system. If the username and password are correct, the system allows him to proceed.

5.2.2.3 Recipient activity diagram

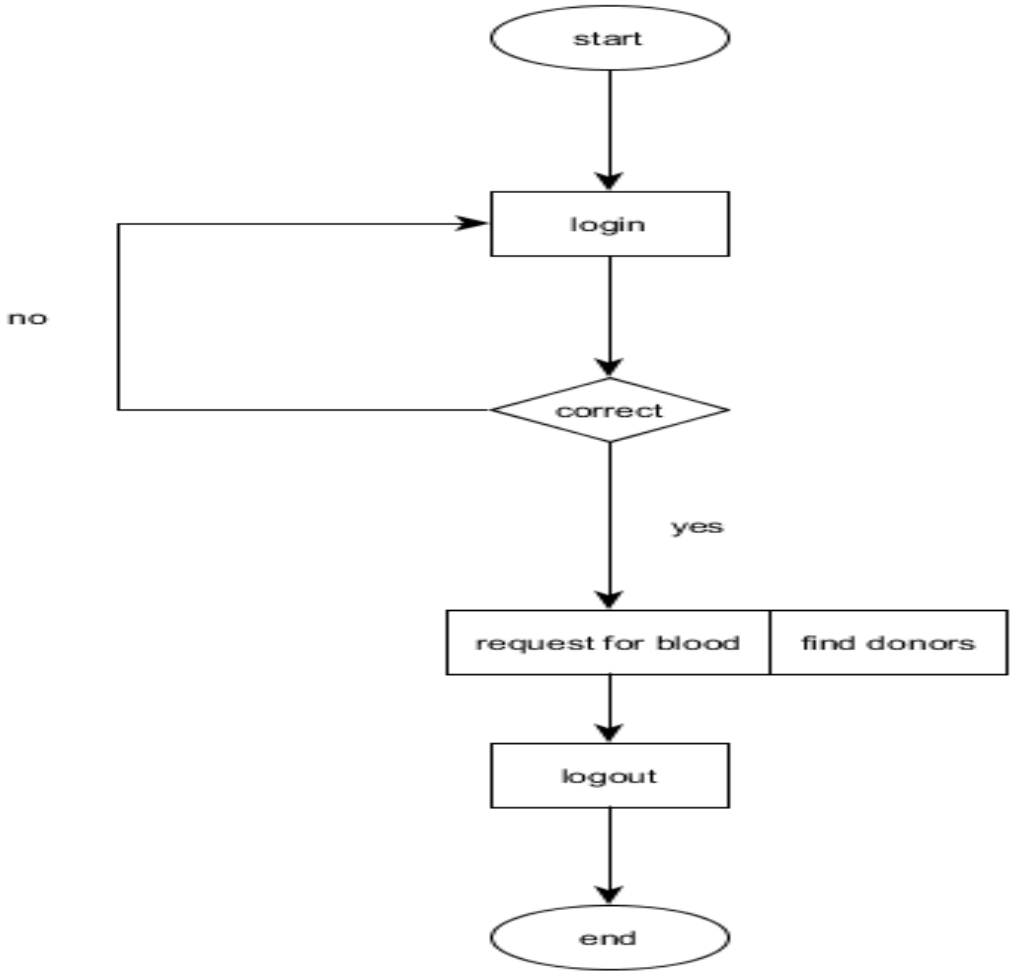

Figure 6 recipient activity diagram

The above diagram shows all the activities/functions of the administrator though they are combined in one diagram. According to the diagram, administrator should first login to the system. If the username and password are correct, the system allows him to proceed.

5.3 Dataflow diagram

5.3.1 Top Dataflow Diagram

A data flow diagram is a graphical representation of the flow of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs can also be used for the visualization of processing. A DFD shows what kind of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of process or information about whether processes will operate in sequence or in parallel.

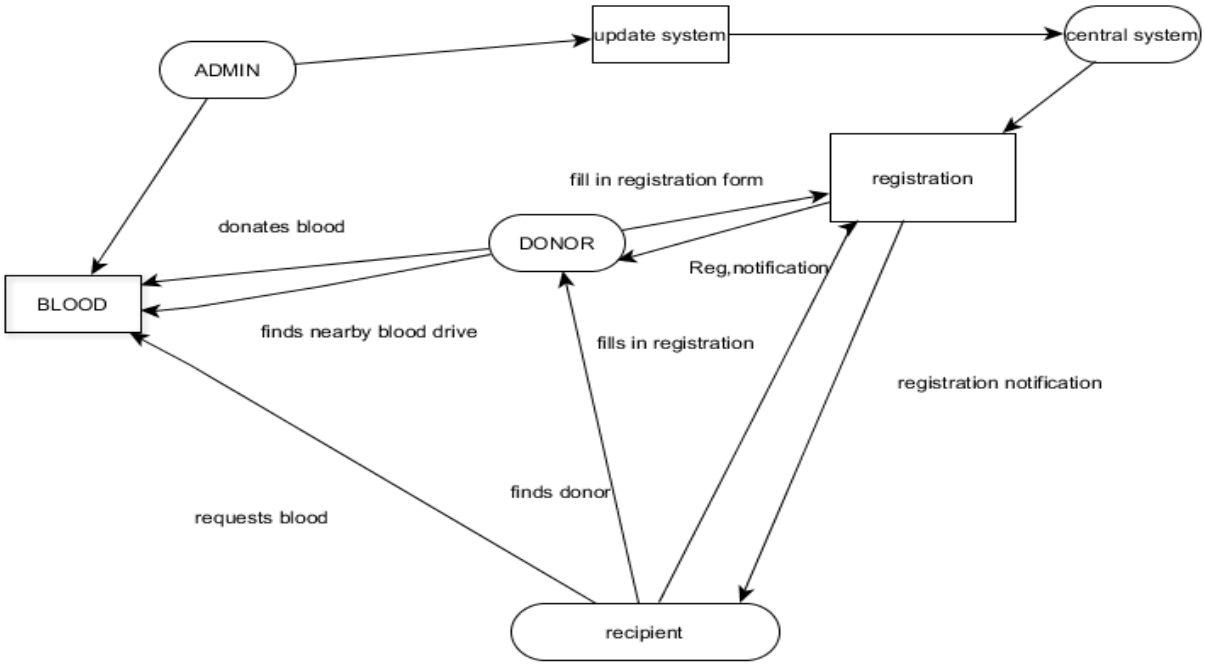

Figure 7 dataflow diagram

The figure above shows the flow of information in the blood drive system which entail three users of the system and these are the blood coordinator who is the administrator, the donors and the acceptor. The acceptor can interact with the system by requesting for blood, and also finding donors.

5.4 Entity Relationship diagram

Entity relationship diagram is a graphical representation of entities and their relationship to each other.

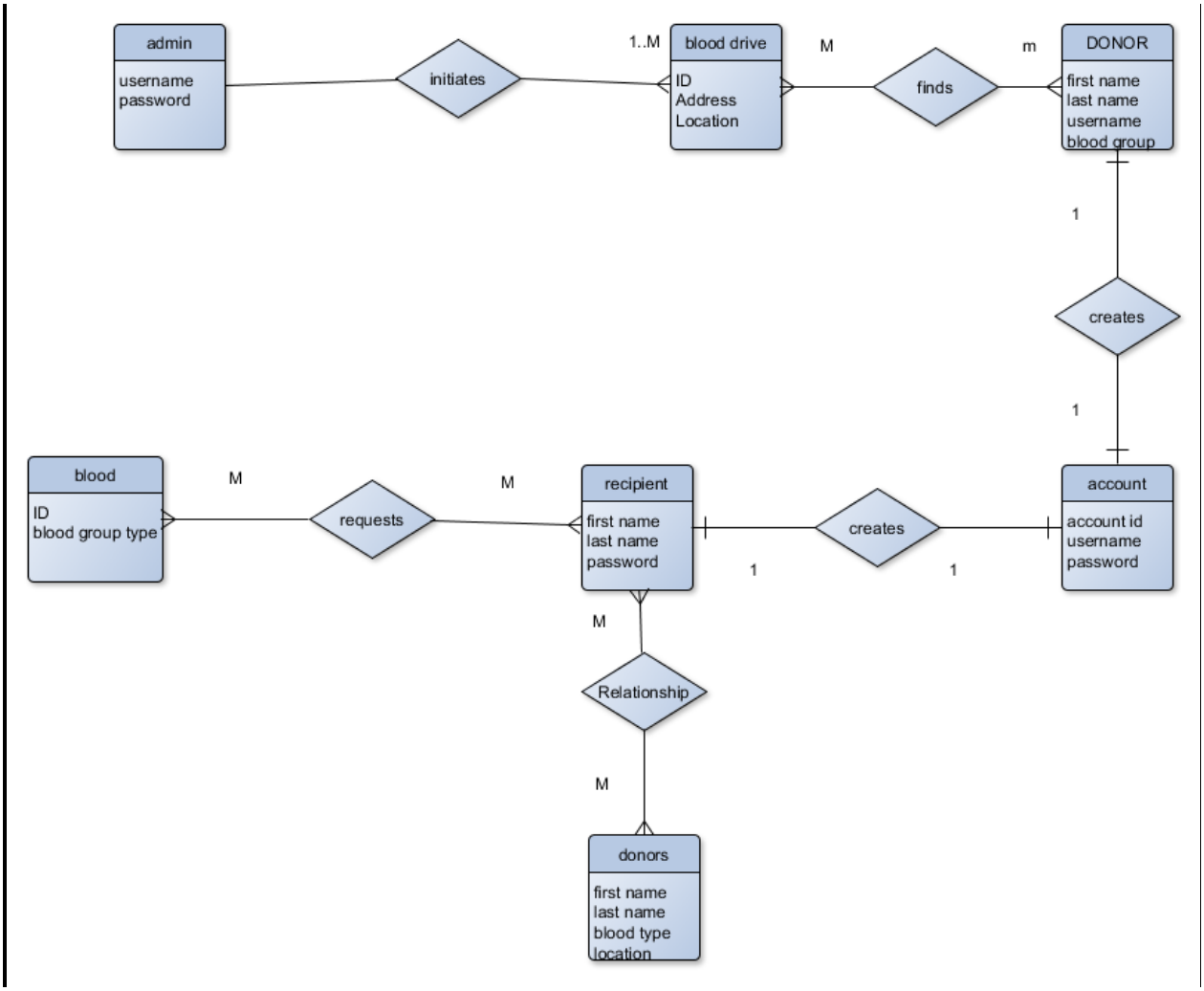

Figure 8 entity relationship diagram

5.5 Conceptual Class diagram

The purpose of the class diagram is to model the static view of an application. The class diagram describes the attributes and operations of a class and also constraints imposed on a system. Case diagram is not only used for visualizing ,describing and documenting different aspects of a system but also for constructing executable code of the software application.

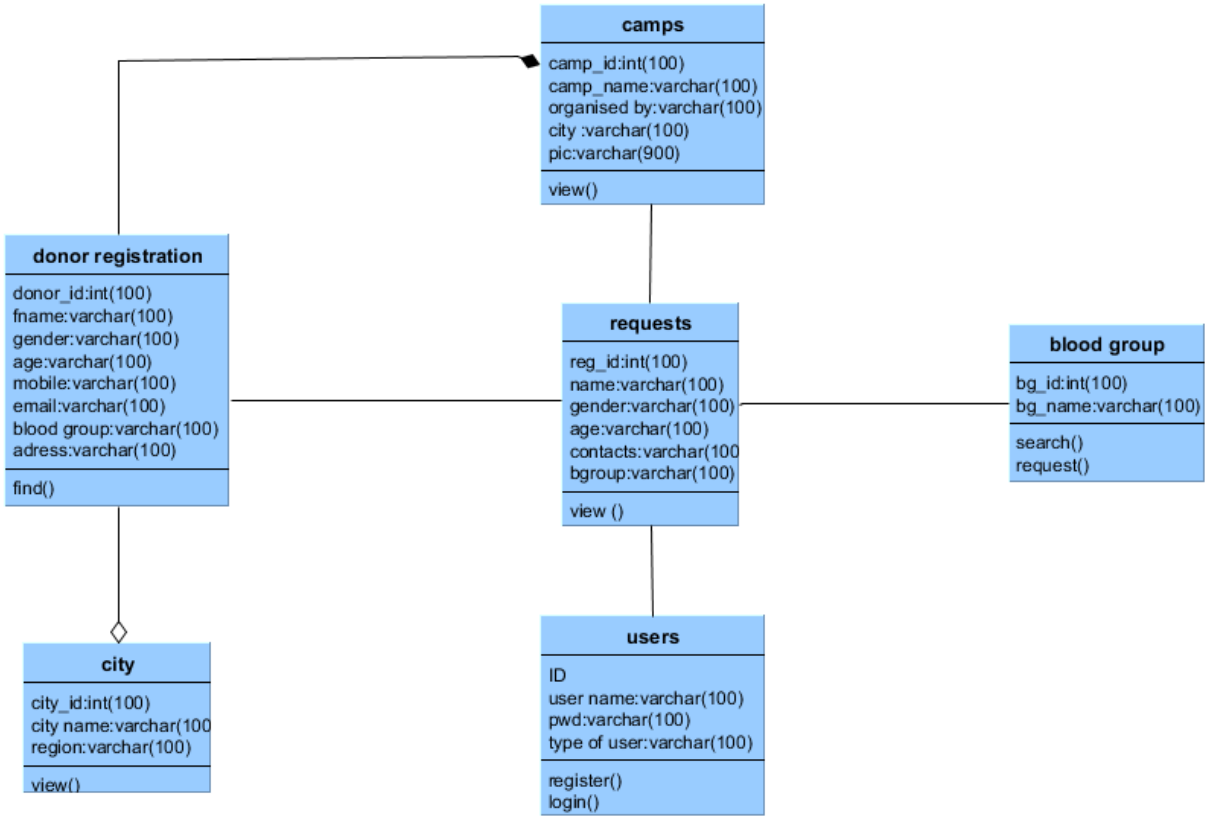

Figure 9 Conceptual class diagram

5.5 Sequence Diagrams

Sequence diagrams show how the objects in the system communicate with each other. It aids in the deduction of possible methods which will be used in the construction phase

5.5.1Sequence diagram for registration

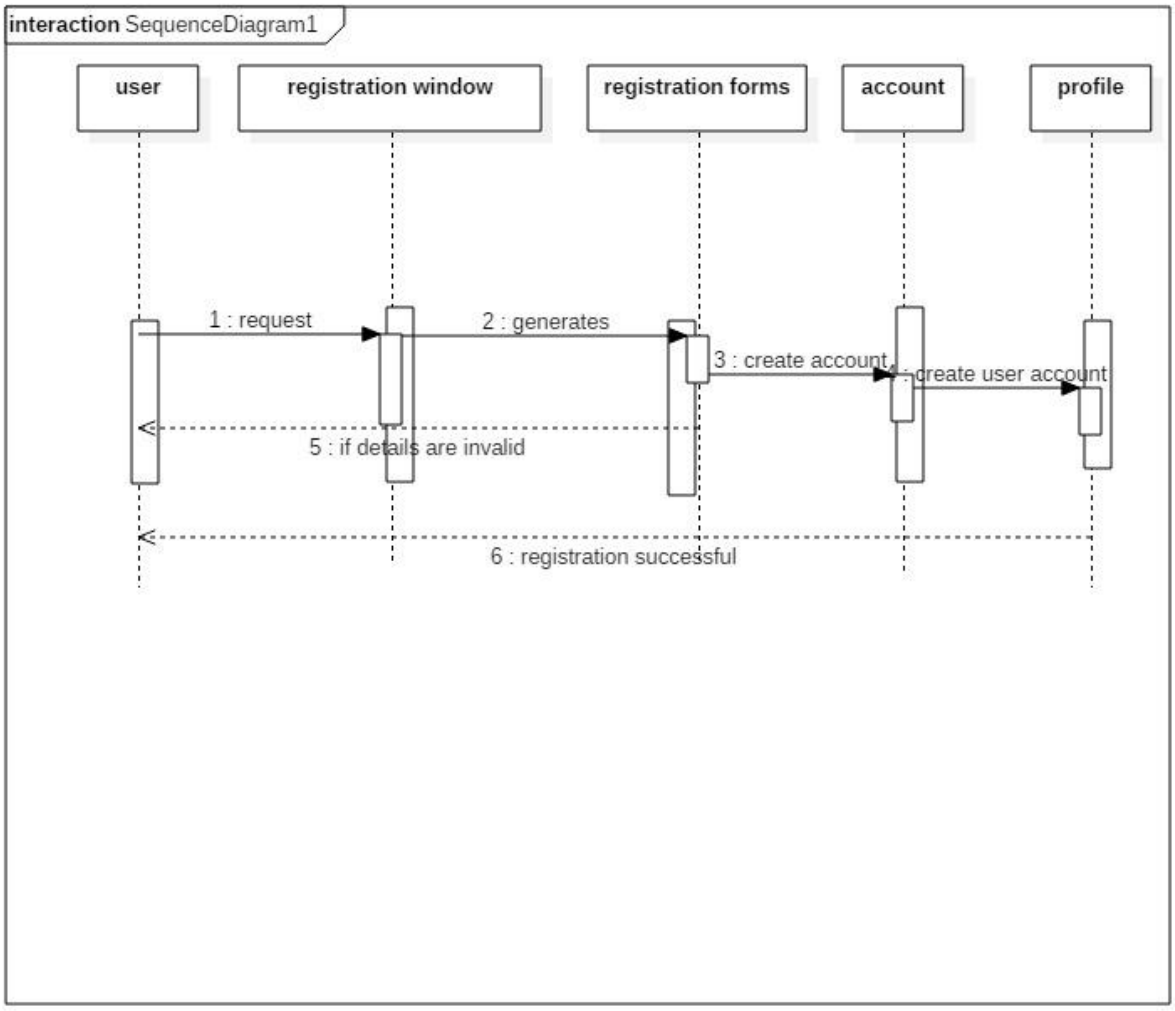

Figure 10 sequence diagram for registration

5.5.2 Sequence diagram for requesting blood

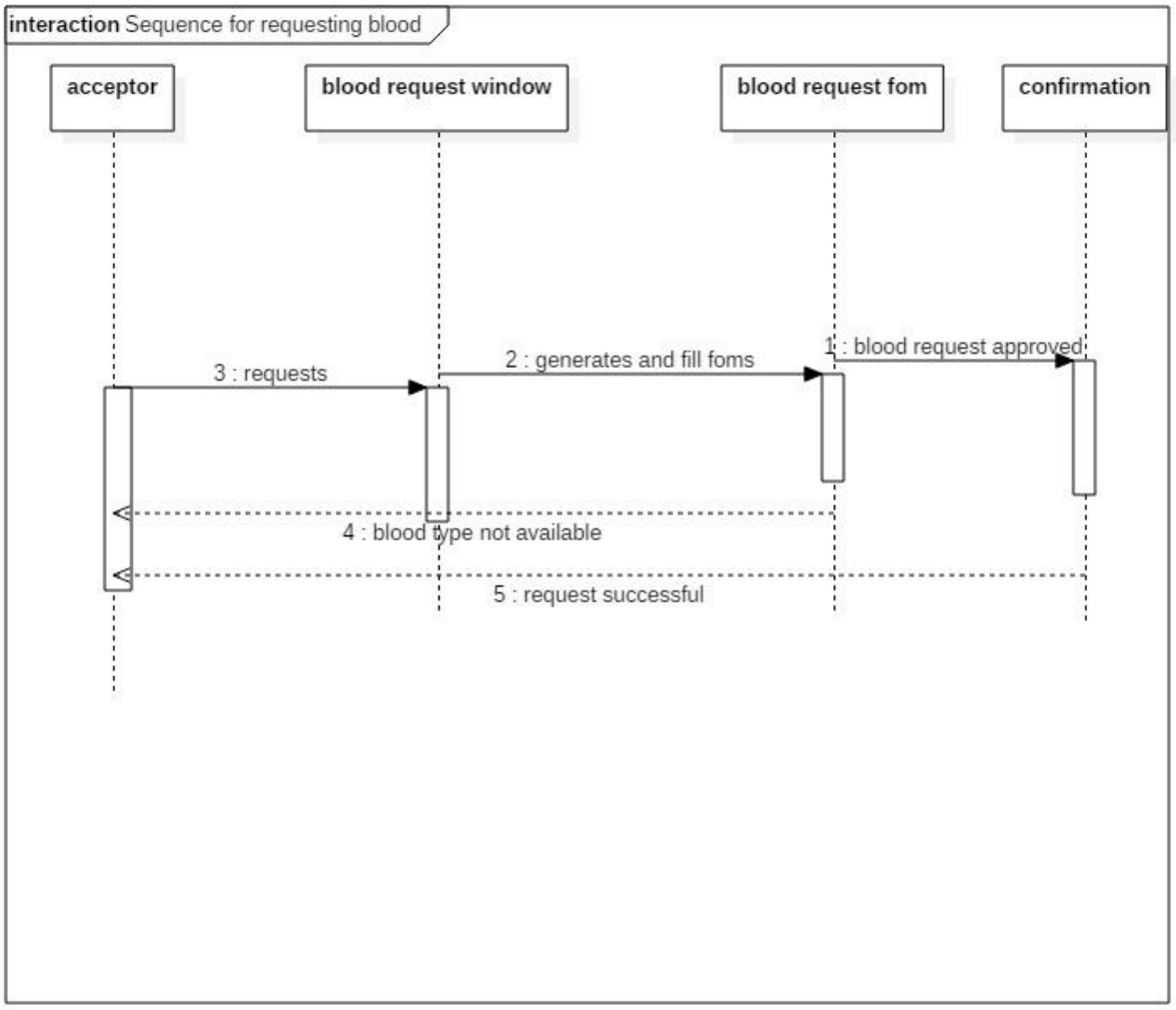

Figure 11 sequence diagram for recipient

CHAPTER SIX

6.0 IMPLEMENTATION

6.1 Introduction

In this part and with the requirements quite clear, we embarked on the implementation of the findings so far. Implementation is the stage of a project during which theory is turned into practice. It is in this stage that we developed the programs that will help meet the expectations of the system. Moreover we developed the interfaces that will interact with the various users of the system. During this phase all the programs of the system are loaded onto the user's computer. In our system there are various modules.

6.2 User Interface

This system is used by the blood coordinator, recipients and the donors and we designed it simply without so much use of colors. The interface is user friendly and easy to use. This can be proving when the user knows what the button's function is when he or she looks at the button. This is due to the fact that the button's text is clear and easy to understand. For example when the user wants to log into the system, he or she uses "Log In" as button's text and not anything else.

6.2.1 Main homepage

This is the main page for all the users of the system i.e. the admin, donor and the recipient. The users will login first to access the other parts of the system.

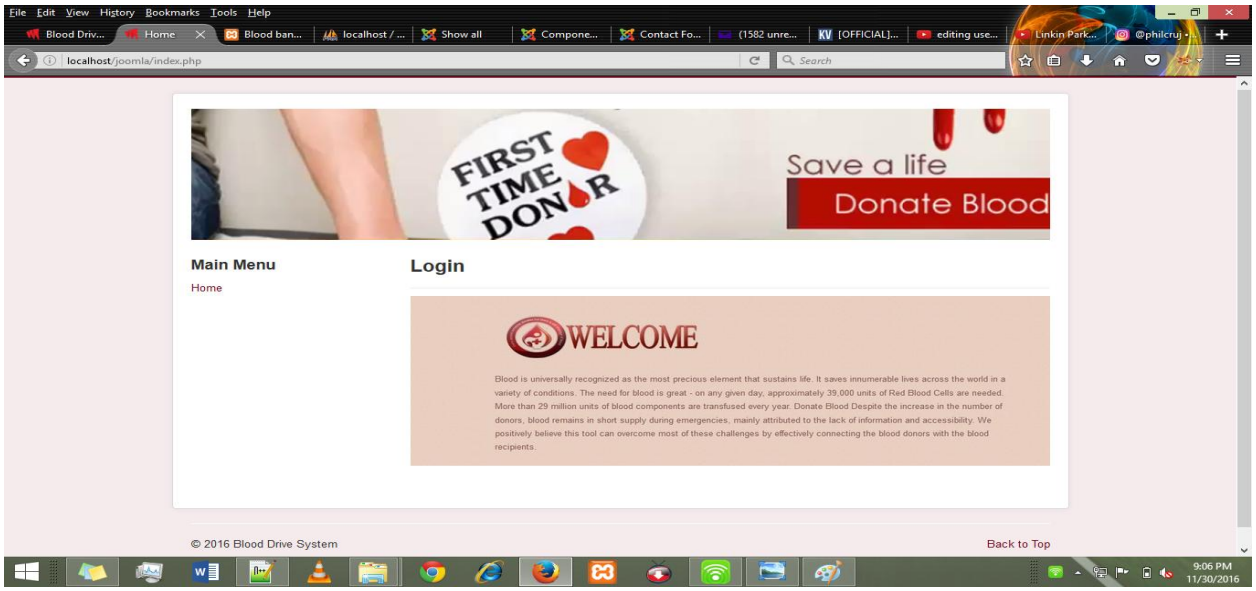

Figure 12 main homepage screen

6.2.2 Login screen

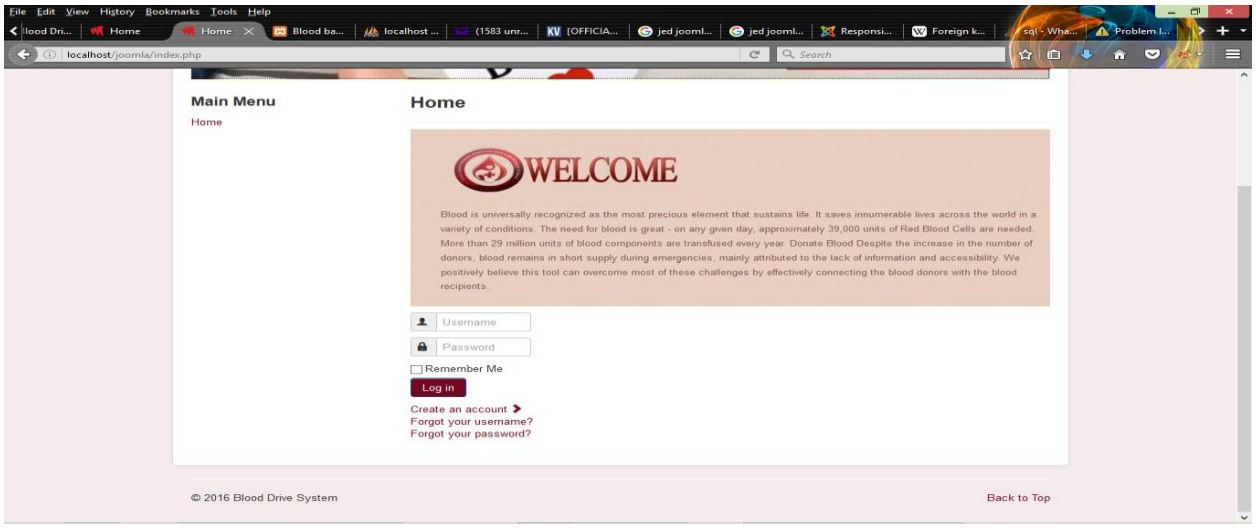

Figure 13 login screen

The above diagram is the homepage of our system, in this page we have a login button where one will click to login into the system. If one is not registered, he /she will have to register by clicking on the create account button and filling the registration form

6.2.3 User registration.

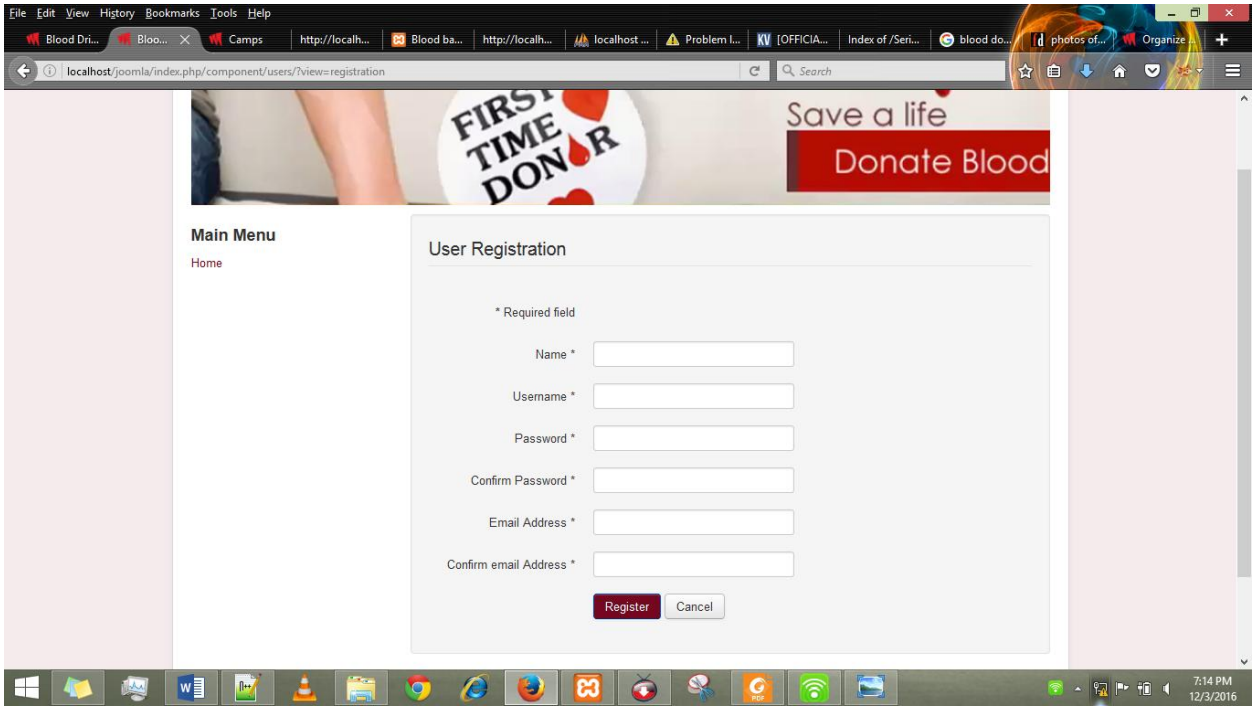

Figure 14 user registration screen

6.2.4 Donor registration

After one becoming the user of the system, they can register as donors by clicking on the donor registration link

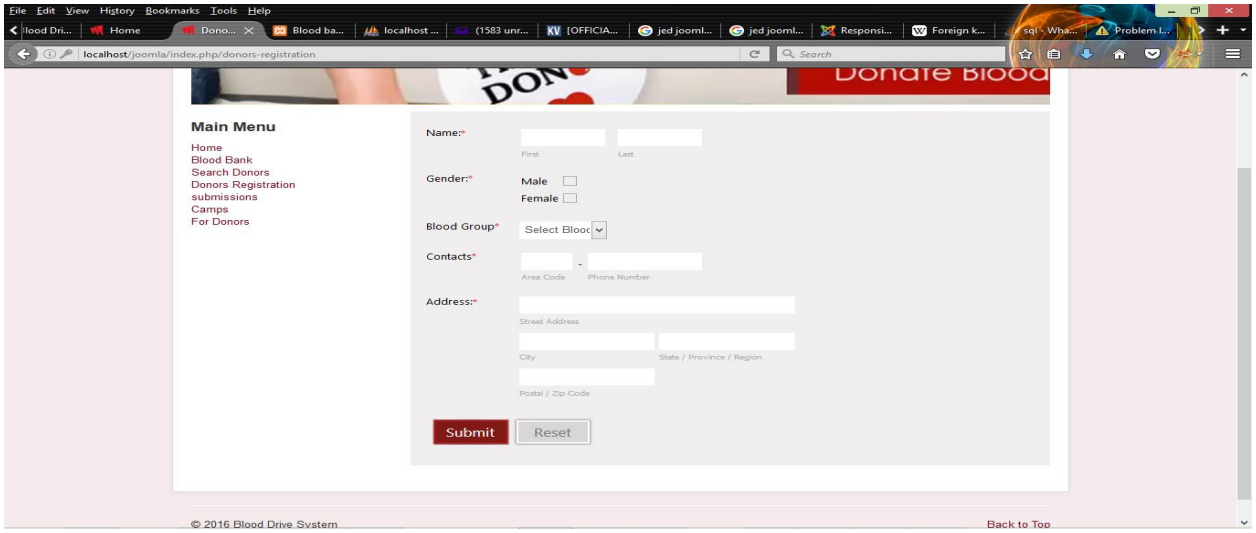

Figure 15 donor registration screen

A donor can find for nearby blood drives by clinking on camps button as shown in the diagram below.

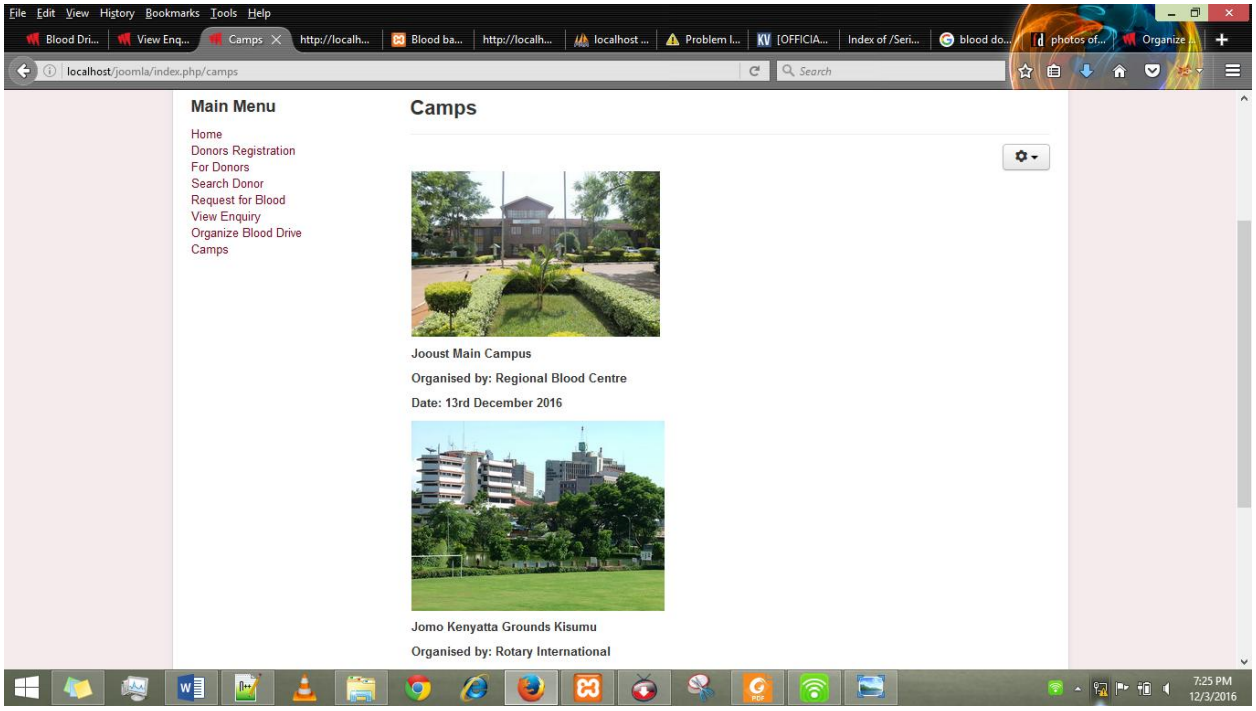

Figure 16 camps screen

6.2.5 Search

After one has been registered into the system as a user, they can search for donors and also search for available blood groups.

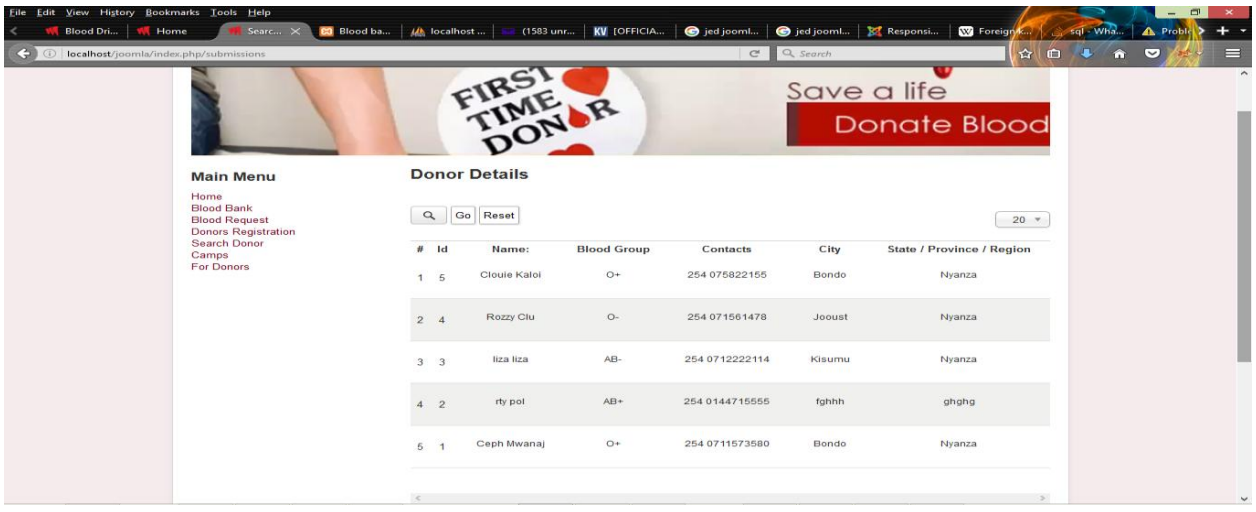

Figure 17 search screen

CHAPTER SEVEN

7.0TESTING

7.1 Introduction

Last phase is system testing done when development is complete and the system is ready for deployment. The testing phase come next to determine if the earlier intended objectives have been realized by then. Testing was done based on whether completeness will have been realized or functional testing that determined whether the software is doing what it is expected correctly and in the right way. User testing was then carried out to ascertain that the users will be contented with what will have been achieved then

Ones the system has undergone testing and passed all the validations and verifications, then the system would be termed to be acceptable and therefore it will be handed over to the owners for maintenance and operation as well

The first test plan is for a person to open the system and login into the system as a user.

7.2 unit testing

During this round of testing, we focused on specific units or component of the software so as to determine whether each one is fully functional. Unit testing is carried out for verifying each individual source code component of the application to verify how they work together.

7.3 Integration testing

In this phase we combined all the modules of the system and tested them as a group to determine if they worked according to the specifications. This is essential because it determines because it determines how efficiently the units are running together. We tested whether one can access the system without registering as a user or by entering a wrong password or username.

From the login interface, a user will login with unregistered username and password, and another user will login by modifying the password or a username.

The figure below shows the results of the test

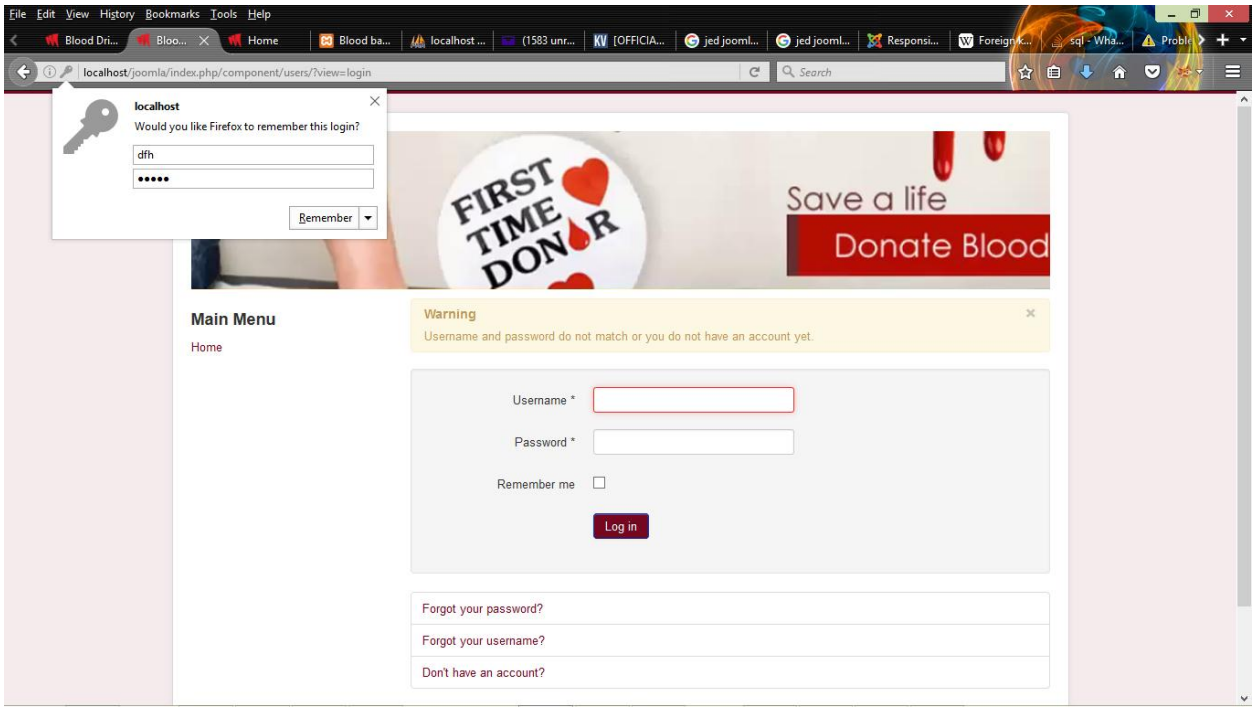

Figure 18 wrong credential screen

As shown above, the user is not allowed to login to into the system if they are unregistered or if they provide login information

7.4 system testing

In this phase we tested the system as a whole .the goal was to determine whether the system has complied with all the outlined requirement and to see that it meets quality standards. It is very important because it verifies that the application meets the technical, functional and business requirement. Under system test, we tested the following

7.4.1 Functional Requirements

7.4.1.1 User Login

Description of Feature

This feature is used by the User (donor/Administrator) to login in to the system. They are required to key in the username and the password before they are granted permission to enter the system. It is verified and the invalid username and password are not allowed to enter the system. If the username and the password do not match, some message will pop up to notify the user that the information supplied was invalid. If valid, user successfully login to the system. A recipient

can login into the system, request for blood and also search for available donors. A donor can login into the system and a can find nearby blood drive events by clicking on the camps button

7.4.2Non Functional Requirement

Usability: the usability of the system is tested by a number of people. The overall results is excellent despite user do not need time to familiarize with the system. The usability of this system is good compared to the old system where people had to go to the system to donate blood.

Portability: the system is designed to run on both Mozilla and internet explorer web browsers, users won't spot any differences when migrating across these browsers

Input validation

Due to the fact that the users will be expected to provide some input to the system, the input data was expected to be validated. This data would be validated based on whether: they provided the semantic meaning to the interfaces or enabled the expected behavior based on the input. I simply changed the inputs from the expected ones to see whether the system noted it and how it behaved with the wrong

.

CHAPTER EIGHT

8. O EXPECTED OUTCOME AND CONCLUSION

8.1Expected outcomes

The expected output from this project is a working Online Blood drive management system With online blood drive system, patients in needy of blood will receive better and fast services. Blood drive system should make it easier to find the donors of blood and also to find a particular blood group. The system should also meet the following

1. People to get all blood donation information in this system instead of going and searching around for it.
2. The system should provide immediate details of blood available in the bank.
3. Donor's details and information should be available in the system so that users don't have problem in searching for them.
4. The system to be effective during emergency conditions and also save time and efforts

8.2 conclusions

universally ,blood is recognized as the most important element that saves life .it saves countless number of lives across in various circumstances .in today's world, where we can do many things from home, by just pressing one click we can take advantage of that concept by making online solution for the shortage of blood donors. The blood drive system helps to reduce use of papers, so the probability of errors should be minimal. This web based system is a small contribution to the society. It can save lives by encouraging the public to donate blood, manage records of donors and people who need blood, to help those who need blood to find appropriate donors as soon as possible in quick, perfect and a safe way with less effort

Appendices

Appendix a: references

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Alexander A.Chacko, C., L. &Sadanandan S. blood bank management system, 2006

P.Priya,V.Saranya,S. Shabana ,Kavitha Subramanian ,The optimization of Blood Donor Information and management system by Technopedia

Appendix b: user manual

System overview

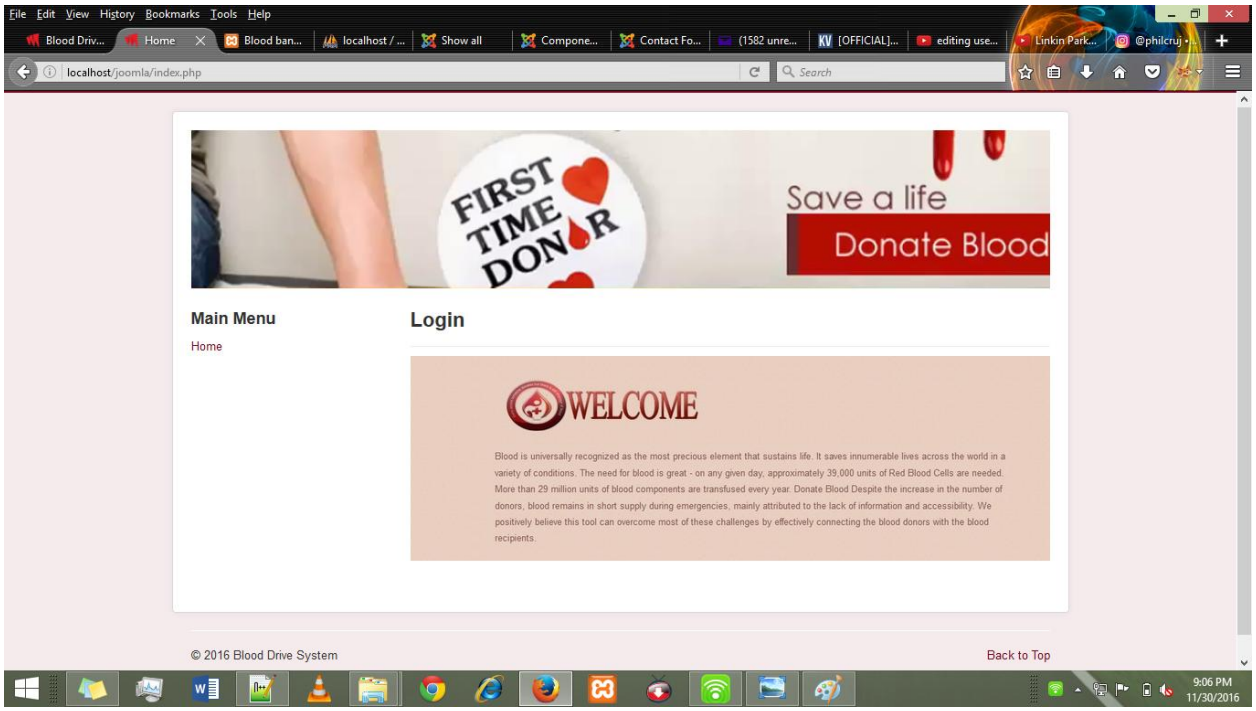
Blood drive system is a web application system that allows people to request for blood online and also find donors of blood online. The system also be used by the hospital blood bank or can blood center as a means to inform the public about the nationwide blood donation events at the same time allow the public to request for blood units.

This guide describes how user (admin, recipient, donor) with Internet connection to use this blood drive system on a desktop, laptop computer or a mobile phone.

Getting started

This section provides a walk through from the start to the end. The following diagrams descript some of the main features available in blood drive system for different types of user to use.

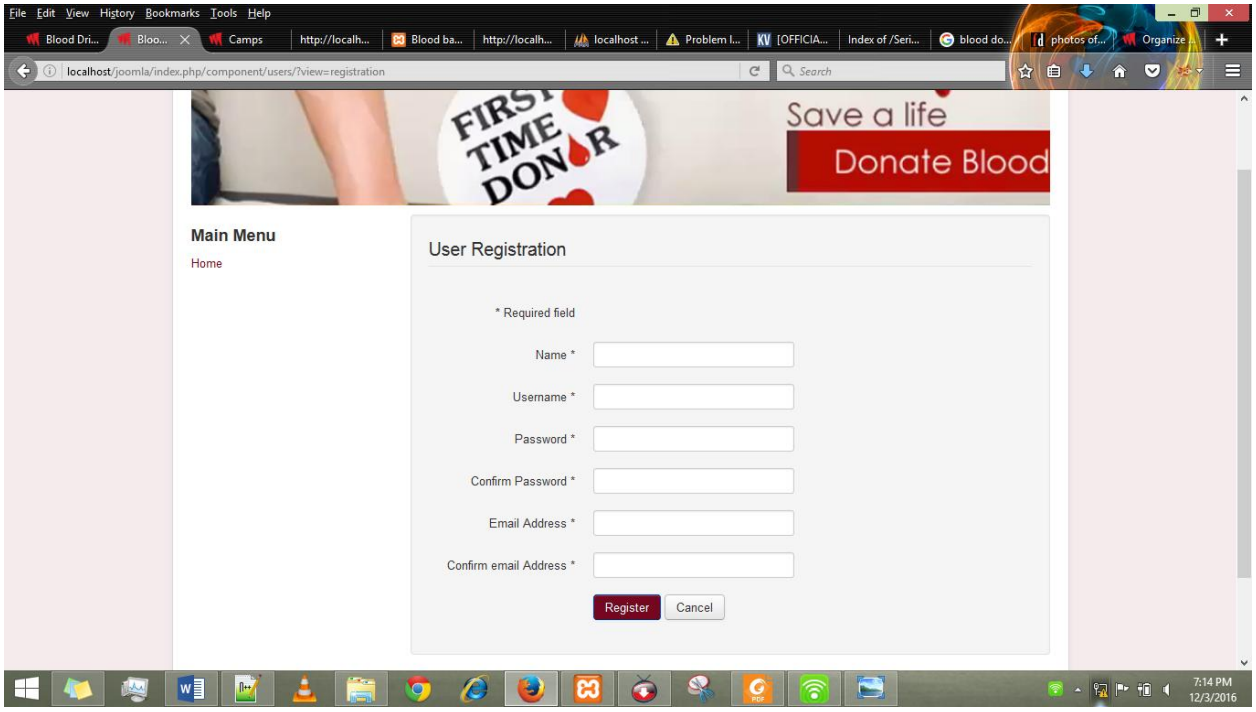
2.1 **Home page**



FUNCTIONALITY FOR RECIPIENT

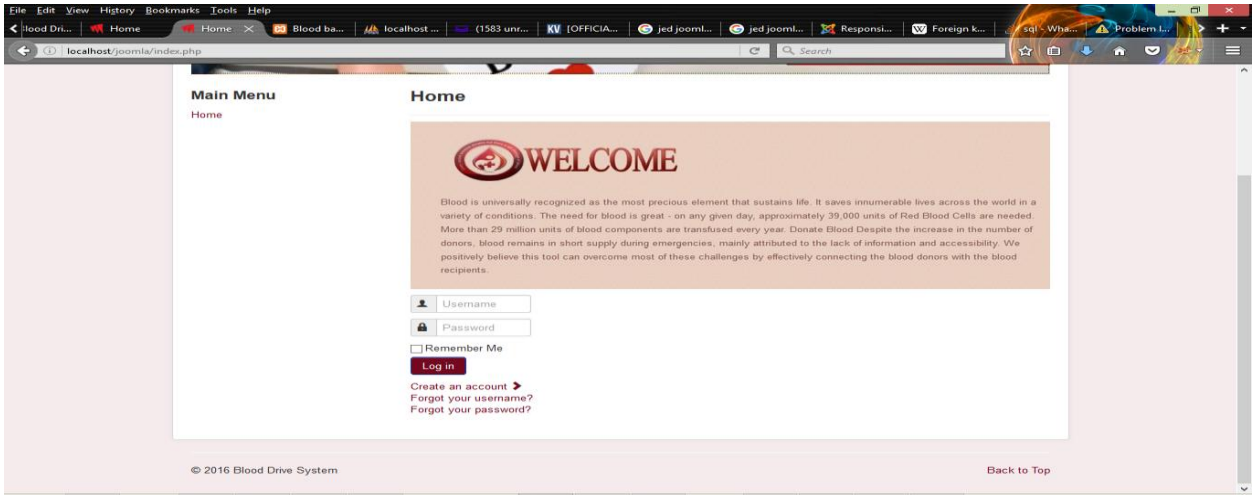
User registration

After accessing the homepage, you must register first as user by clicking the link called create an account.



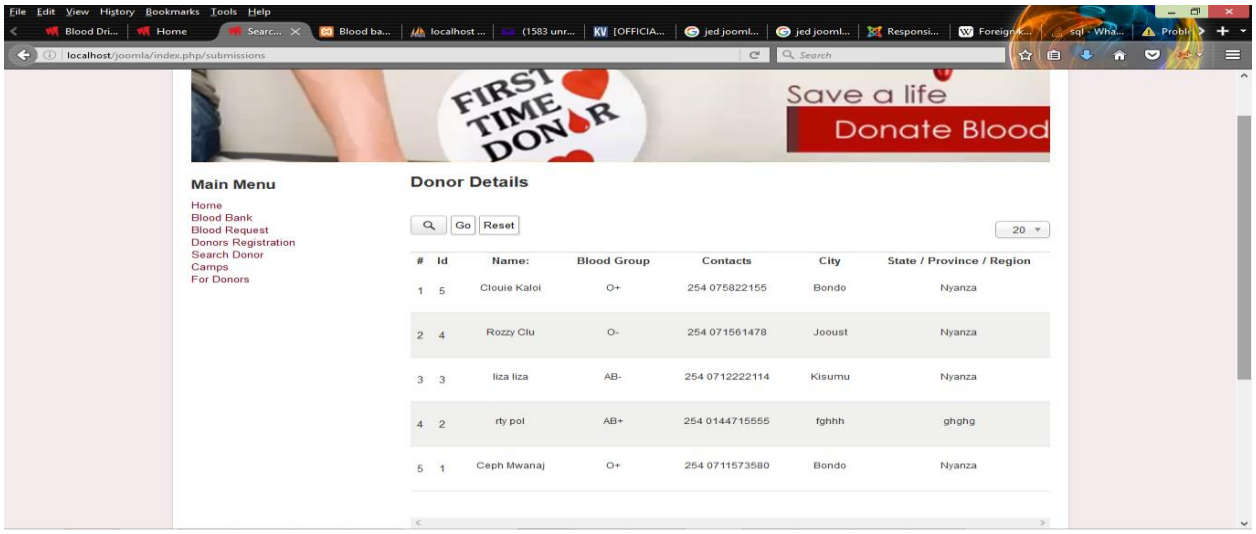
login page

After creation of an account you can login to the system .after logging in as a recipient you can request for blood, search for available blood and also search for donors with a particular blood group

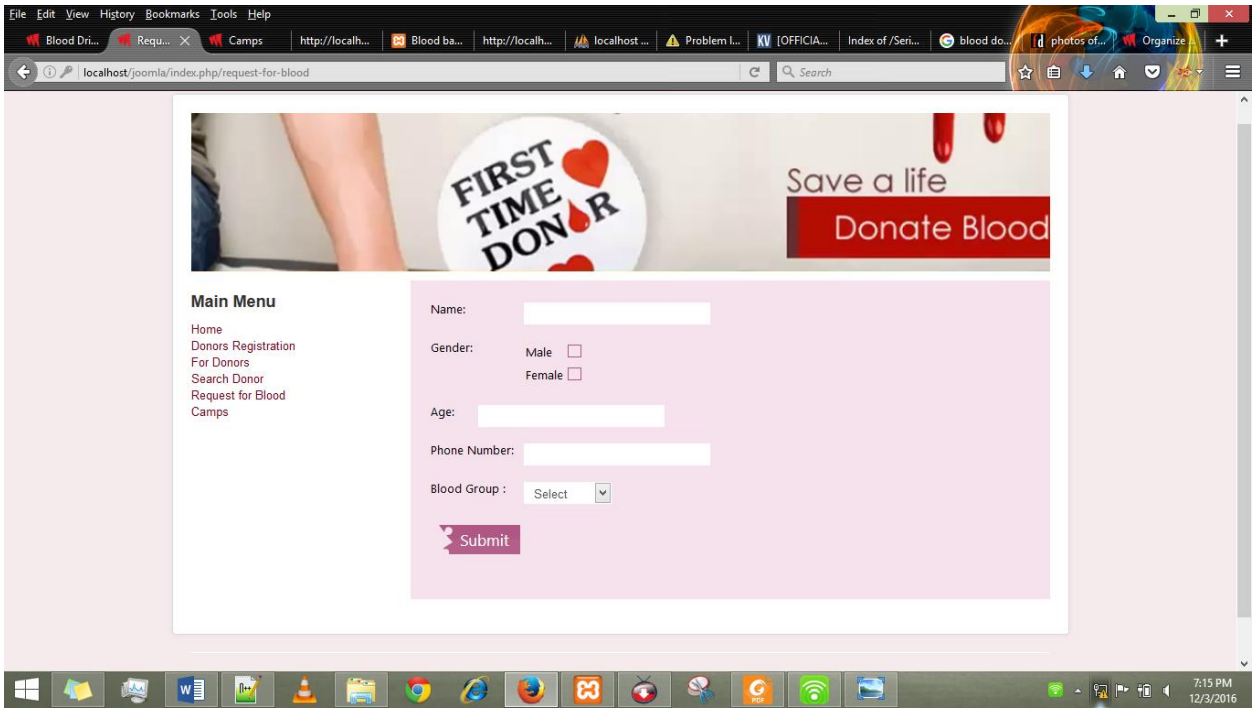


Search

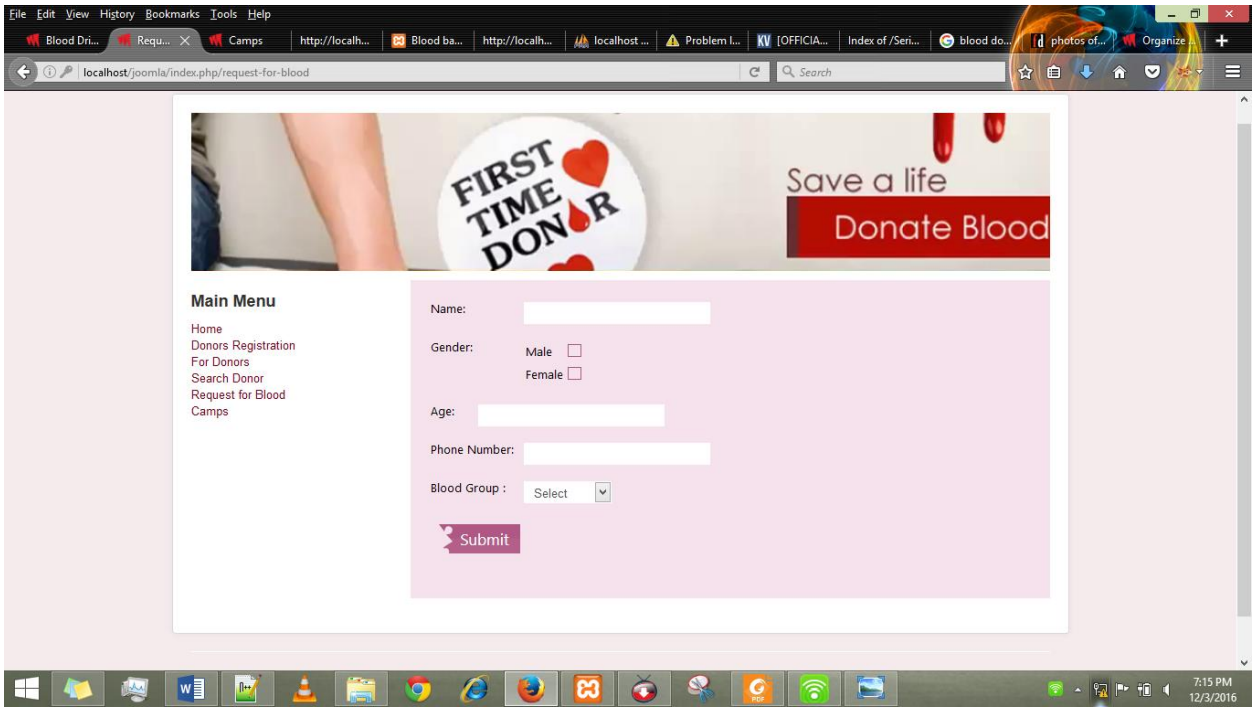
Within this function, users can for available blood groups and they can also search for donors of a particular blood group. A user will click the search button and enter the blood group, the result will be described as; Donor name, blood group, contacts, location.



The recipient can also request for blood after loging into the system

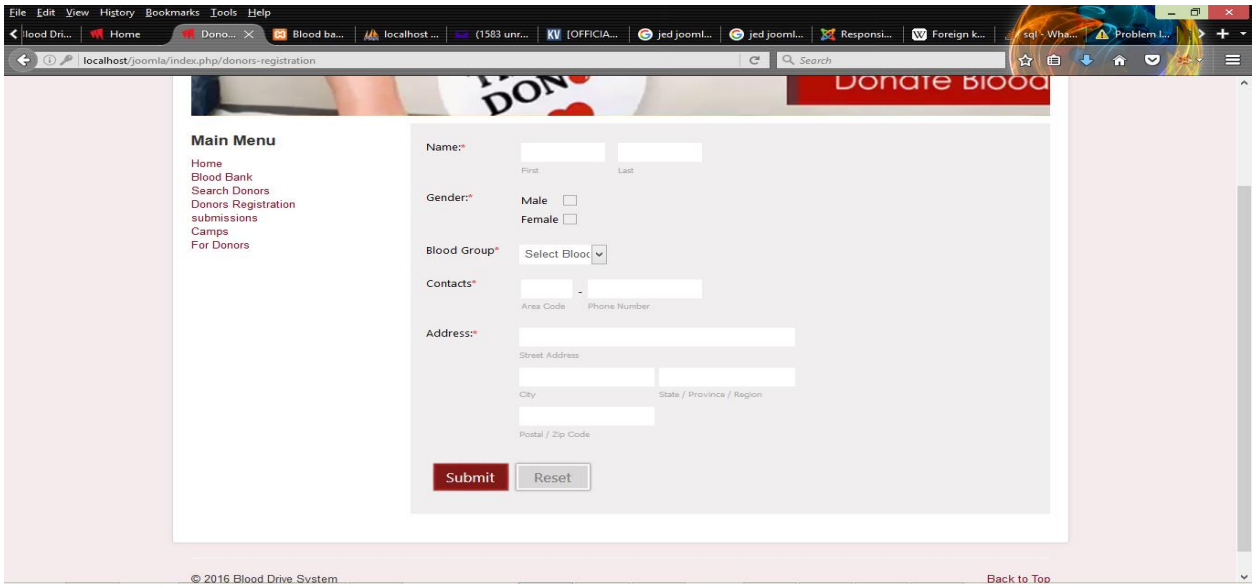


Request for blood page

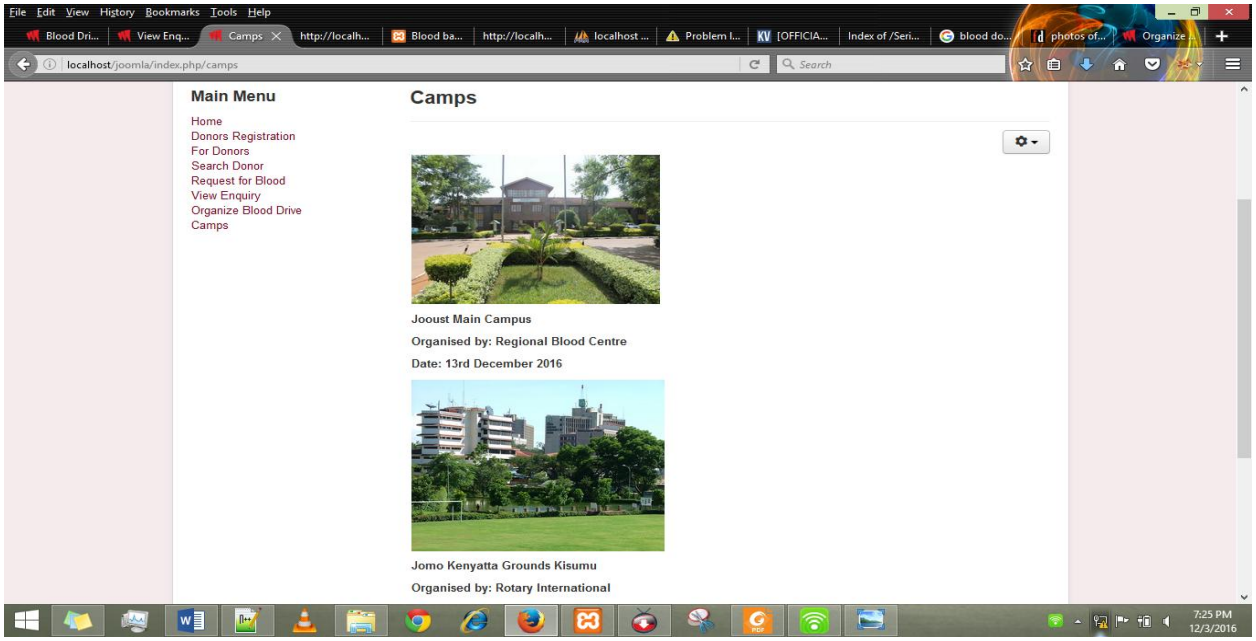


Functionality for donor

After becoming the user of the system, you can also register as a donor by clicking the donor registration link.



After a donor login to the system. He/she can find nearby blood drives by clicking on the camps button



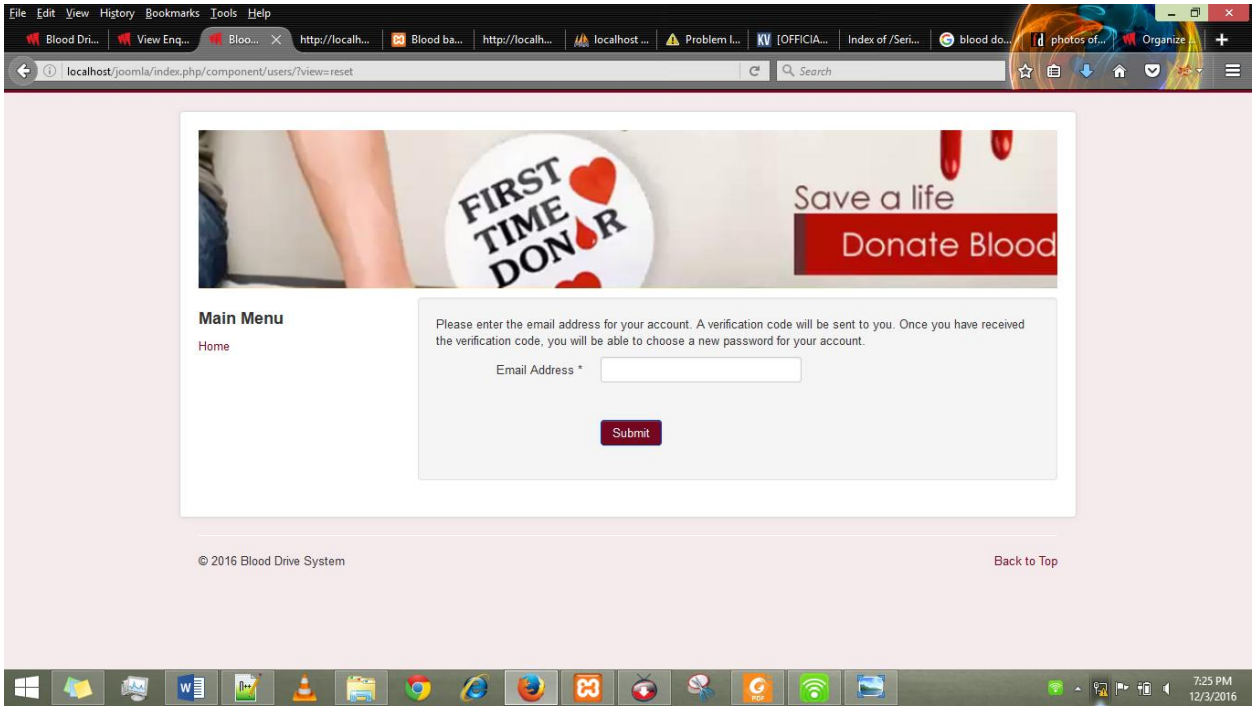
Changing password

If you want to change password or forgotten password, follow the following steps

1. Click the forgot password link

2. Enter your email address

After that I link will be sent to your email to reset your password


File Edit View History Bookmarks Tools Help
localhost/joomla/index.php/component/users/?view=reset
FIRST TIME DONOR
Save a life
Donate Blood
Main Menu
Home
Please enter the email address for your account. A verification code will be sent to you. Once you have received the verification code, you will be able to choose a new password for your account.
Email Address *
Submit
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