Chapter-1: Introduction/ Objectives

1. Introduction

The OnlineBlood donation management system would help numerous people from different cities. This website will be containing information about the donors, different blood groups available in each blood bank though which it can be managed in a better and effective way. In this way people can easily contact particular person or organization to get blood according to their convenient and needs.

This project main aim is to help people in need .It also encourages blood donor to donate. It will help people find blood donors in times of need.

It is necessary for people to be aware about donors and blood group so that they can ask for help .Even donors should also be updated and know about people who need them. This way we can help each other in better way.

To let this happen we need a way so that we can reach everyone quickly and easily. For this this website is being designed, from can find the blood donors on remote location easily and contact them.

We have two portals in our project first is admin portal and second is user portal. Through admin portal admin can login and can fetch all the information about users, user can be particular person or an organization. Second is user portal, user can be a particular person or an organization.

Admin can easily register, delete, and edit organization or user or member. Here admin is complete responsible for analysis and complete control of system is under Admin.

Role of organization or user is to register themselves online, edit profile, Online Find Blood and they can also search location wise.

1.2 Objective

The main objective of study is to create a project through which we can find donors from remote location and contact them and it also focuses on collection and management of blood units. Blood donor records and information is stored in secure way.

- To perform a study on blood donation management
- To design an Online Blood Donation Management System
- To authenticate a design using a model

1.3 Scope

According to Various studies many patient dies due to unavailability of blood. India faces, on average, a shortfall of 3 million units of blood annually. Lack of blood, plasma or platelets often leads to maternal mortality as well as deaths in cases of accidents involving severe blood loss. Through this website it would become easy to find donor and help people through it. This in turn will case and speeds up the planning, decision making process because of the timely, secure, confidential and reliable reports. This project main aim is to help Blood bank to automate blood donor and depository online. It also encourages blood donor to donate. It will help people find blood donors in times of need. We have two portals in our project first is admin portal and second is user portal. Through admin portal admin can login and can fetch all the information about users, user can be particular person or an organization. Second is user portal, user can be a particular person or an organization. Admin can easily register, delete, and edit organization or user or member. Here admin is complete responsible for analysis and complete control of system is under Admin.Role of organization or user is to register themselves online, edit profile, Online Find Blood and they can also search location wise.

1.4 Features: -

- Helps Blood Banks to automate blood donor and depository online.
- Encourages blood donors to donate.
- Helps people find blood donors in times of need.

Admin Features: -

- Register, Delete, Edit Organization
- Register, Delete, Edit User
- Register, Delete, Edit Member
- Analysis
- Control Over System

1.5 Problem Definition

According to previous studies and reports I fell short of 1.9 million of blood unit that could be helpful in treatment of around 32,000 heart patients and their surgeries, and can also be used in organ transplant of patients. - according to official data 2016-2017.According to WHO, India fall short of 1.9 million units of blood whereas country 1% of total population is considered as

approximate estimate of blood need. This much of blood units is equal to 60 tankers – according to data presented to Lok Sabha(2018).

Blood Requirements	
Units Of Blood Required For	**Could Aid**
Heart Surgery – 6 units	3,27,187 Heart Surgeries
Organ Transplant – 40 units	49,078 Transplants
Automobile Accident – 50 units	39,262 Accidents
Bone Marrow Transplant – 20 units	98,156 Transplants

According to these studies we can know about shortage of blood India is facing to cure patients. Many people are unaware of blood donors and many donors are unaware about people who need their blood.

This website would help people and organizations to reach out to people who need their blood. Approaching people online through this website would solve the problem of blood shortage.

1.6 Applicability

This project is helpful for the users as donor can register themselves and recipients can search the donors. With the help of this website, user can get information about the donors and contact them. It is most beneficial for people who are undergoing any treatment, going to get operate, or in case of accident emergency. It becomes difficult to search donors, especially rare blood groups like o positive and o negative. Through this app recipient can easily find the donor. Thiswebsite is easy to use and helpful to searchthe donor.

Components of the project:

- User need to register themselves.
- User can edit their profiles
- User can get easy access to their profile
- Admin can register a user
- Admin can edit a user.
- User can search the donor.

Chapter-2: System Analysis

2.1 Feasibility study: -

2.1.1 Technical Feasibility

The software is to be developed using C#, Java, PHP, CSS, XAML and MySQL, which a re all readily available. Also, the team members have sufficient programming and related k nowledge which will enable us to learn and adapt to these specific languages and platform s easily. Thus, we can see that the project is technically feasible.

2.1.2 Schedule Feasibility

This website is developed in the given time duration of 3 months .From gathering informa tion to design phase. Every step is completed one by one. Spiralmodel is being followed i n SDLC.

2.1.3 Economic Feasibility

The program uses programming languages whose IDE are freeware. One exception to this is the Visual Studio 2012, which is needed for the 4 4 supplementary app development.

But this software is provided free of cost. Further costs for this project are the costs of online domain, space and database and registering and uploading the apps in the respective market, which is expected to be covered by the college.

The remaining cost is that of training the developer team in the particular language and/or platform, which is minimal. So, the project is economically feasible.

2.1.4 Operational Feasibility

The software requires very little specific environment to run. Only the apps require their e nvironment to run, i.e. Windows 8™ and Android™.

As a staggering majority of the PCs in the world are based on Windows™ OS and many mobile devices operate on Android™, this cannot really be considered a need. The softwar e will be extremely user-

friendly, removing the need for specifically trained employees. Similarly, the cost of buyin g the rights and the maintenance cost will not be very high for the client.

So, the software is feasible for operation.

2.1.5 Legal Feasibility

The developers will obviously use no illegal means or methodologies in the development p rocess of the system. The software will be built and operated abiding by the Cyber and ot her applicable laws prevailing in the country enforced by the Government of Nepal. The u ser will be held responsible for only the data they enter to the system. In case of internati onal users, they will be subjected to the applicable laws in that country. So, the software has no legal barrages.

2.1.6 Religious-Cultural Feasibility

This system will never ask the user of their religion or cultural origin and ergo will not a ct in any way whatsoever that may hurt the sentiments of any cultural or religious group. The product development or operation will never undergo any process that might be unacc eptable to a specific religion or culture. The software itself will be generic and impartial. So, no religious or cultural issues should disrupt the system.

2.1.7 Socio-Political Feasibility

This software, being a simple notice board system, will by no means cause any alarms or questions in the society nor will it challenge any existing socialconventions. Further, the so ftware will not contradict or interfere in any way with the political happenings. The softw are will not be used as a means of campaign or promotion or a specific political or social organization. So, the software is socially and politically feasible.

2.2 Software Paradigm: -

To create a system that is useful for designing a web site the development of a working prototype of an interface that is tested by a user community test and refined until a suitable interface has been designed as a final product. This is this prototype model of this project. In this one define the design of this project how this project can be implemented.

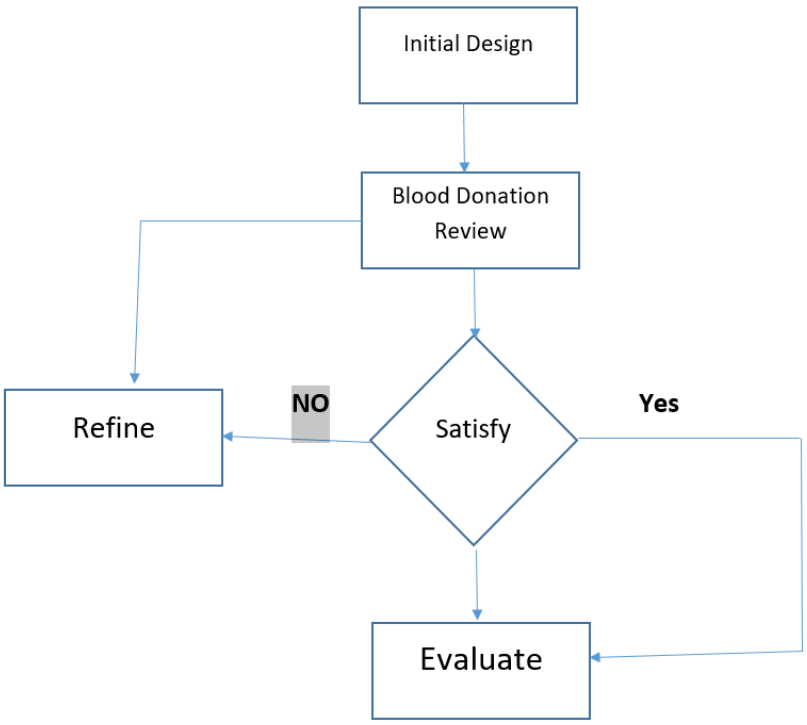

Fig:1 Software Prototype Model

2.2.1 Waterfall Model: -

In this project, waterfall model has been adopted in sequential manner. The first phase is registration phase, where the user visit to the website and register themselves. After that user can work on the other functionality of the website. After complete the registration or fill all the details the user can go to the next phase just like waterfall model so now user can login. If this phase is successful, then the other user can and search the donor.

After complete the designing part one go for the coding phase in the coding phase user do coding in each and every part. Without coding the design phase can't work because each phase is depending on the other phase. As well as without design phase coding phase has no meaning so everything is dependent on each other so that if one phase fails so it will effect on the other phase also. So there is the main problem in this website so to overcome this issue one use the spiral model.

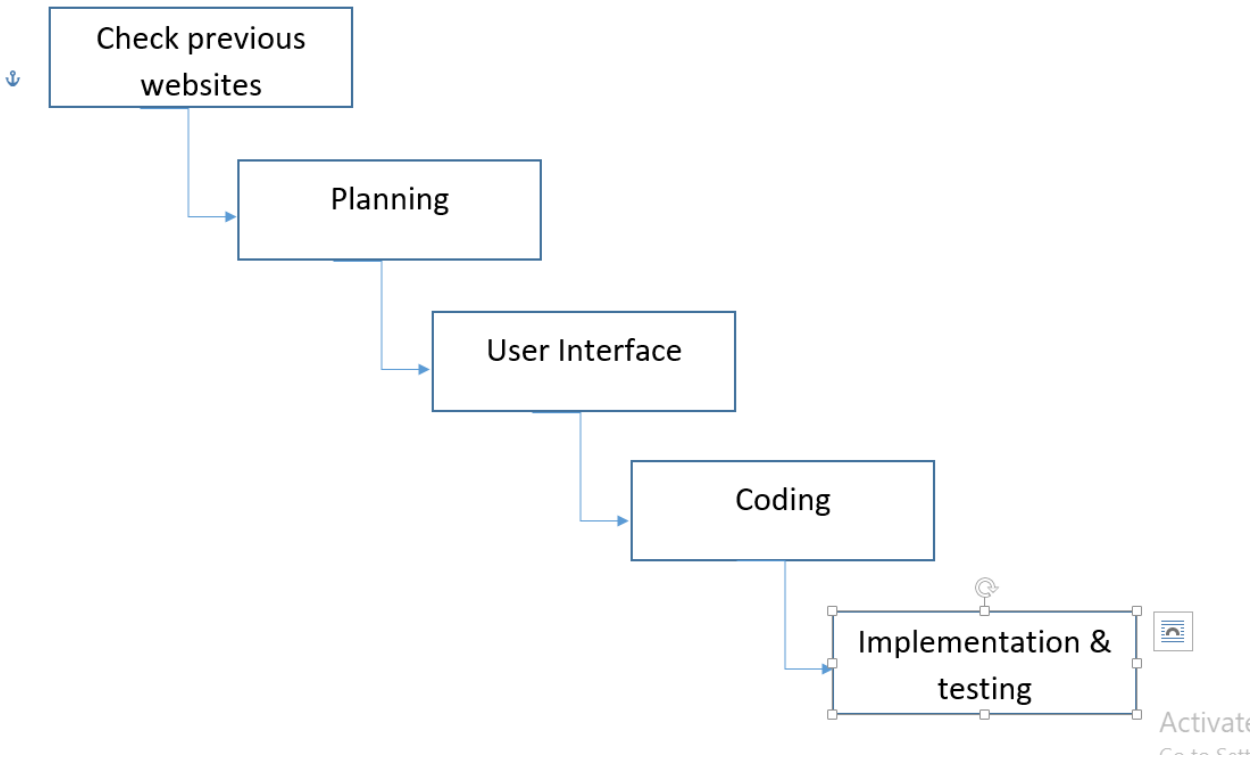

Fig: 2 Waterfall Model Diagram

2.2.2 Spiral Model: -

To overcome the limitation of the waterfall model that use the spiral model it is also known as risk analysis model to use this model for reduce the risk of the software failure in this to check each phase again and again if the coding can be done firstly then after that one design the structure and complete the UI phase and next reach to combine the coding and the design phase so to reduce the risk of this software one use the spiral model.

In spiral model each and every phase can check again and again so that in this project can work on the spiral model like in spiral model this project can work on same phase again and check that phase can be work properly if this 1st phase can't be work properly then one can go back the 1st phase after complete all the phases. Reach the 1st phase again and check the code if the code is not work properly so in that case to rectify these phases again and do the code

So in that scenario one can done this project risk free if once that code and in future is there any problem in any of the phase one can rectify doing in the coding and if anyone wants to modify that project so he can do modification in this project easily. Because its user interface made simply but there is a complexity in between the coding and the database in this project, one not uses the simple database one also uses the stored procedure which will increase the security of this project

2.3 Class Diagram

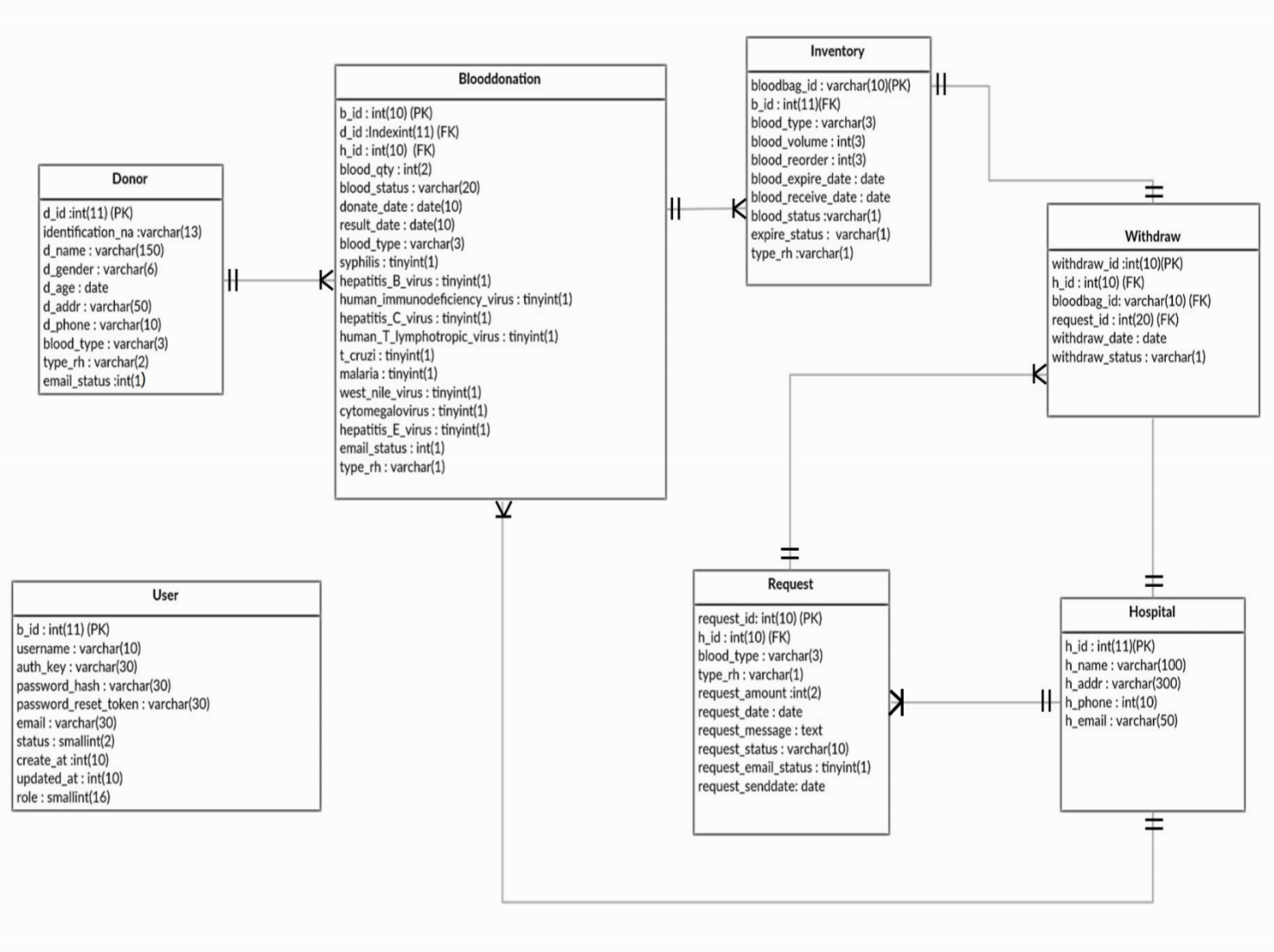

Fig 3: Class Diagram of Blood Bank Management

2.4 Pert Chart

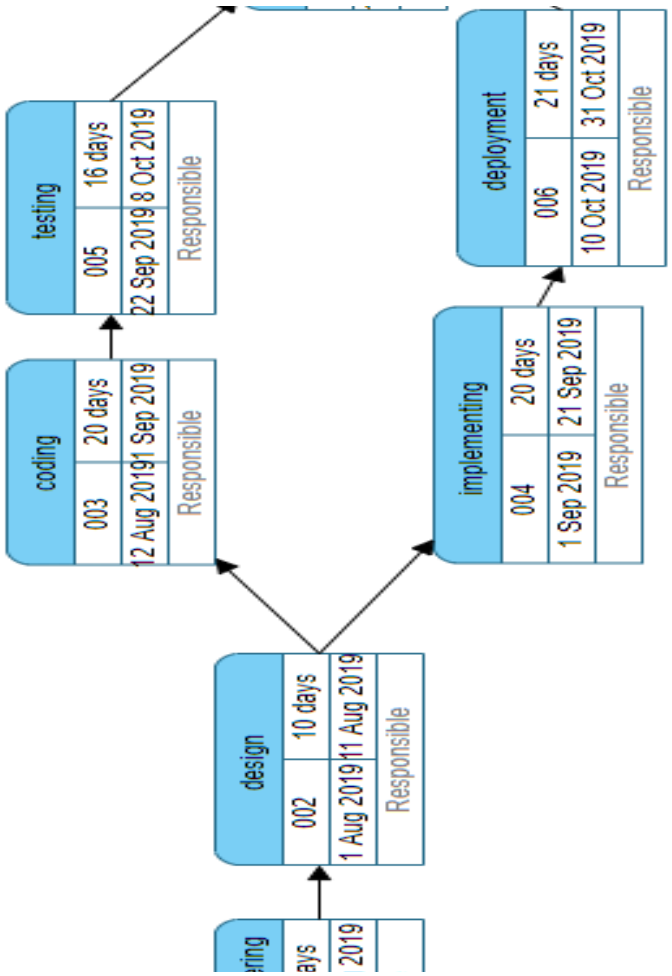

Fig 4: Pert Chart

2.5 Gantt Chart

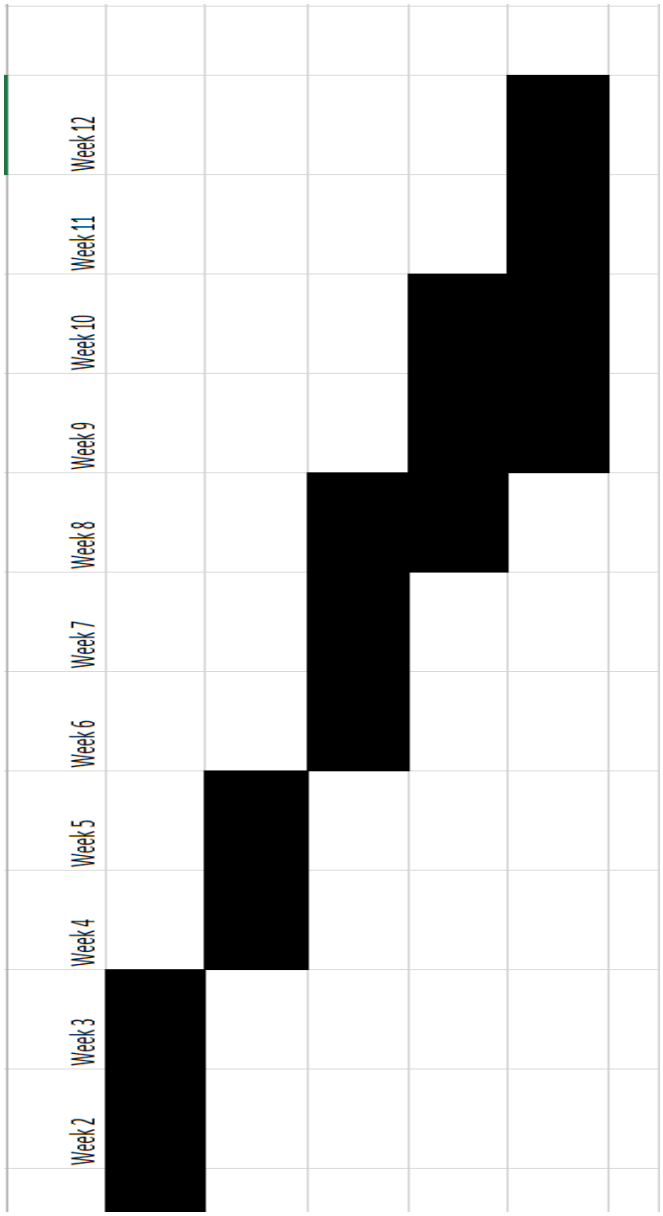

Fig 5: Gantt Chart

Chapter-3:

System Design

3.1 Use Case: -

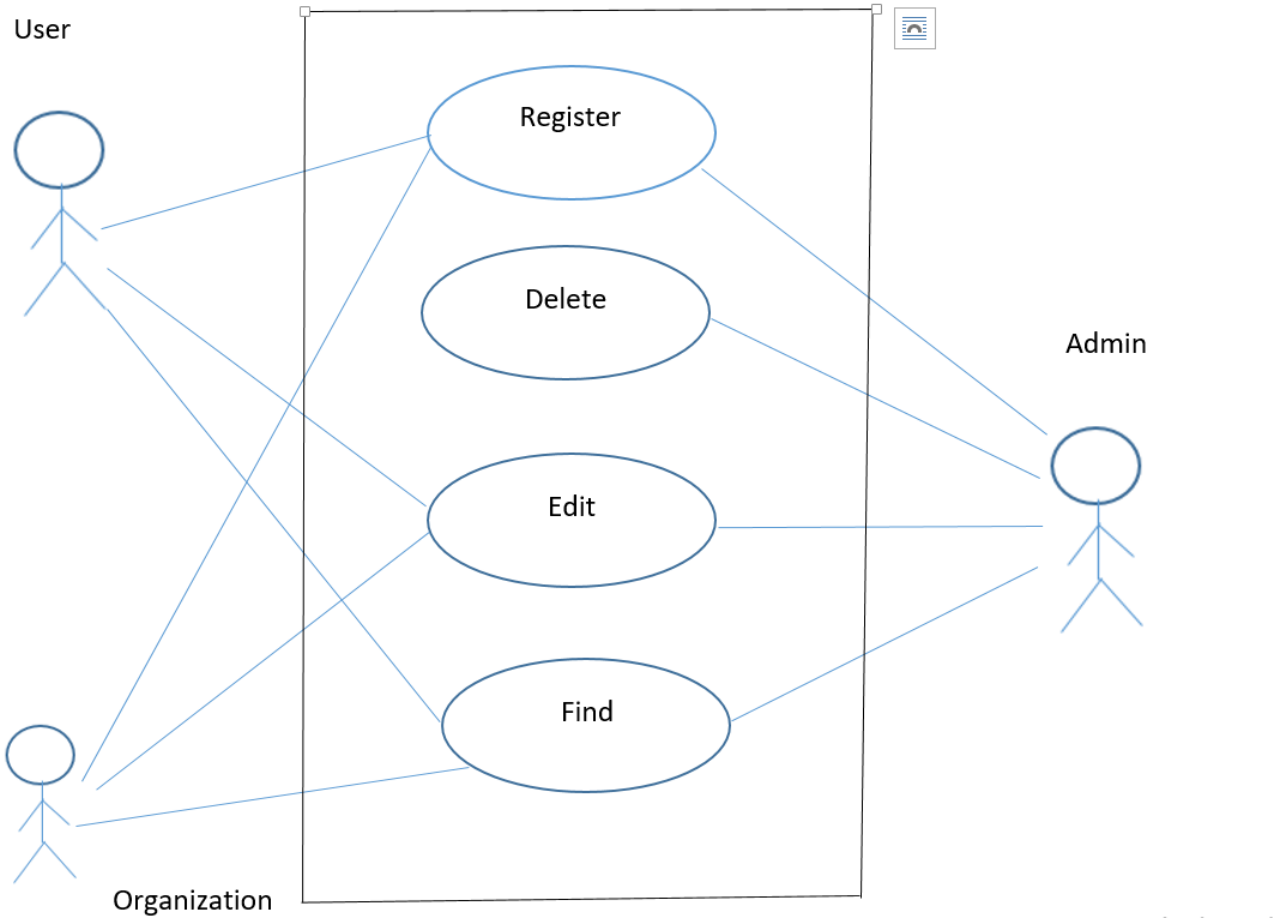

Fig 6: Use Case Diagram

3.2 User Interface

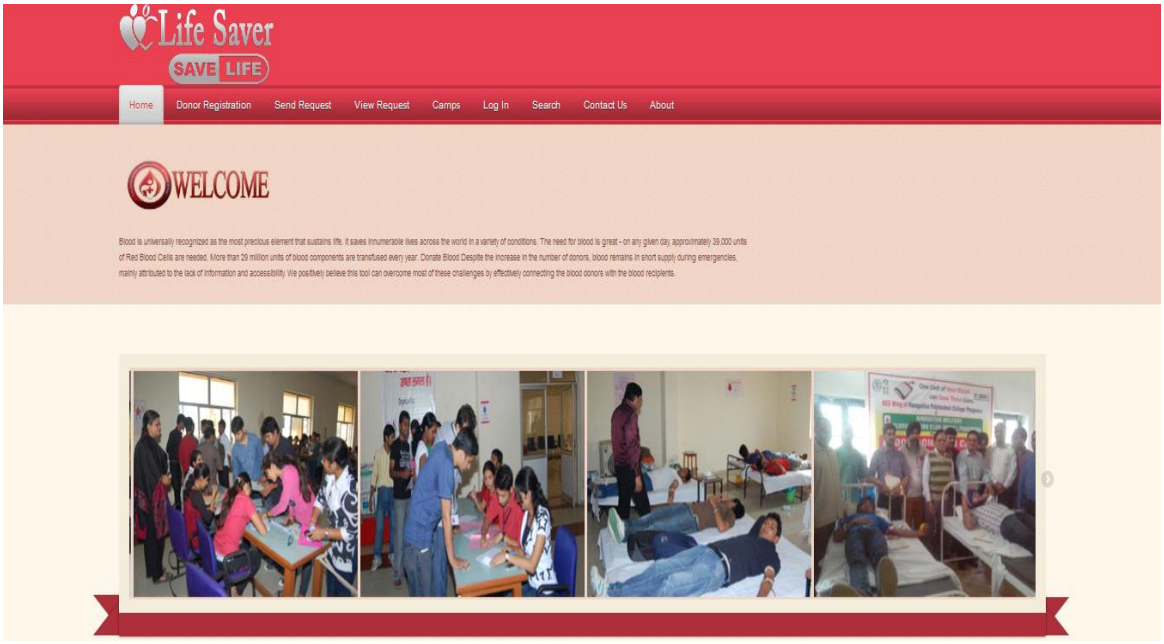

Fig 7: Home Page

Fig 8: Registration page of Life Saver

Fig 9: Request for Blood page

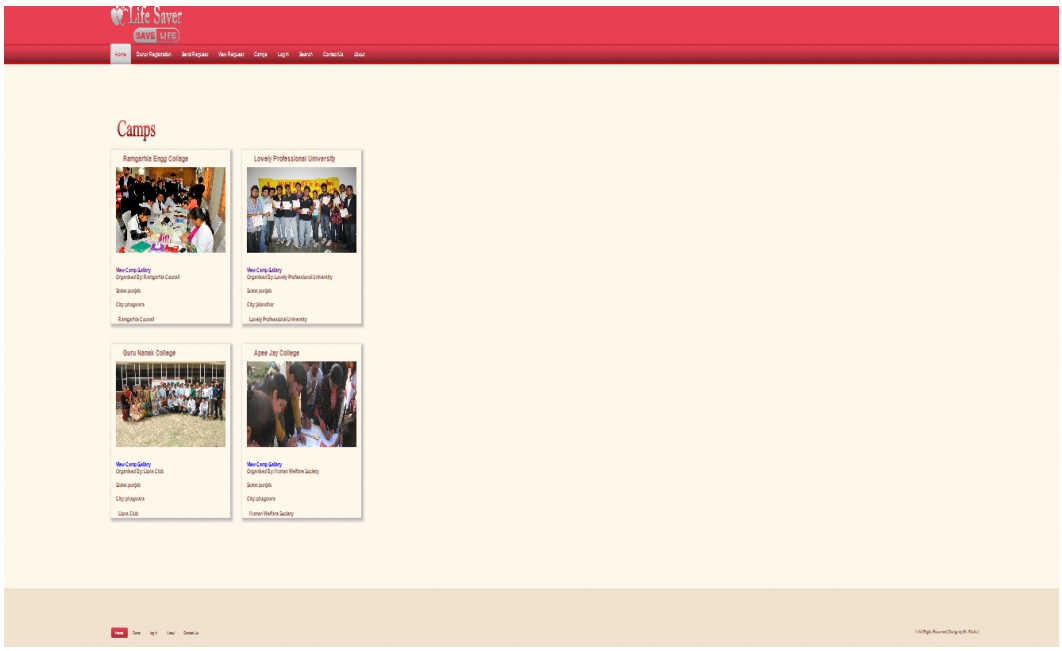

Fig 10: Camps of Blood group

Fig 11: DONOR Log In

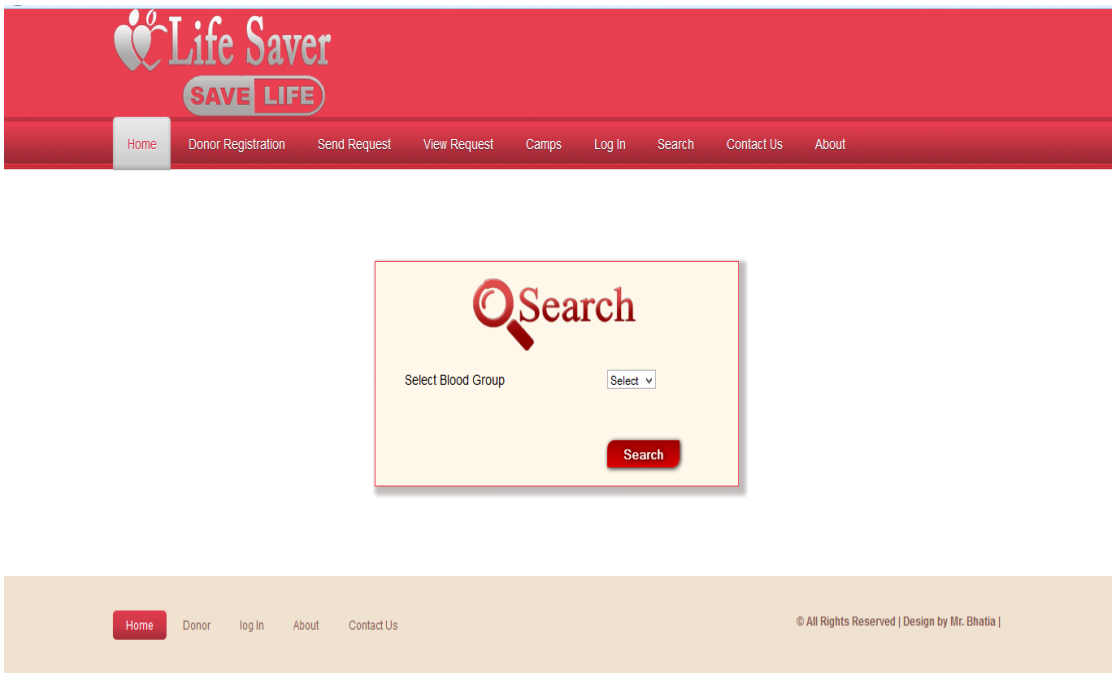

Fig 12: Search for Blood

Fig 13: Contact Us

Fig 14: Welcome To Donor Panel

Fig 15: Change Password

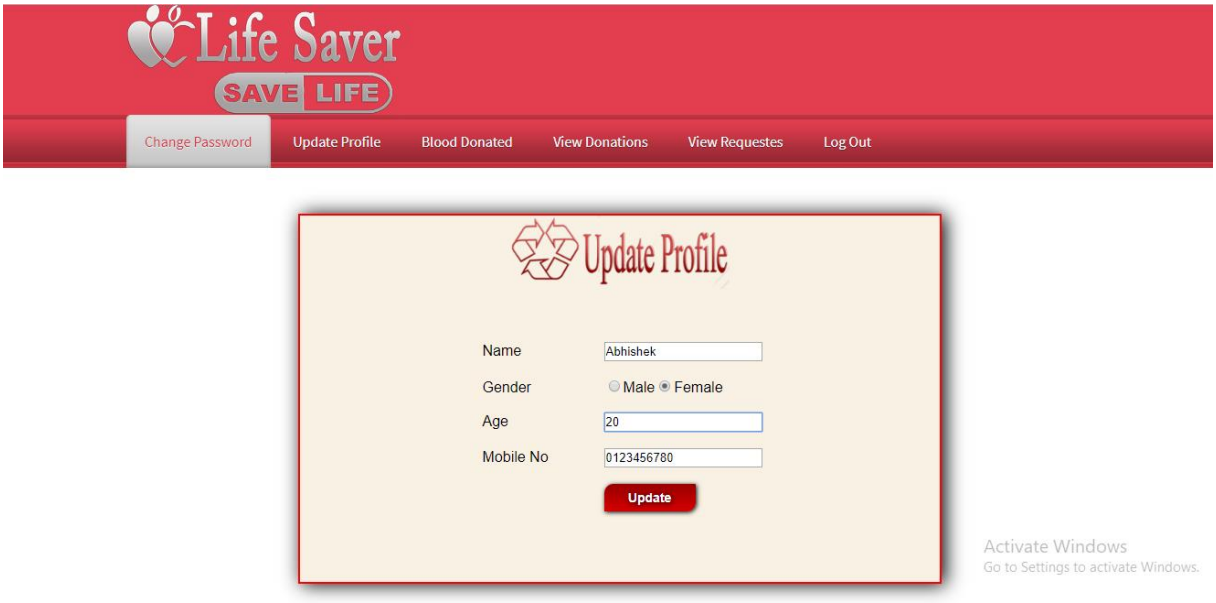

Fig 16: Update Profile

Fig 17: Blood Donated

Fig 18: Admin Panel

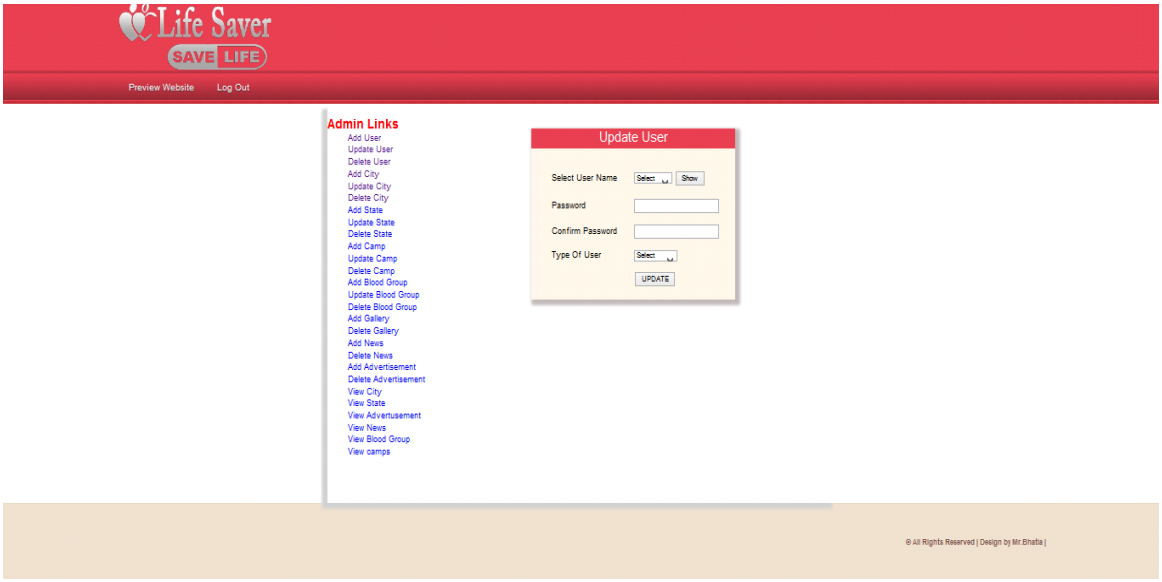

Fig 19: Update User

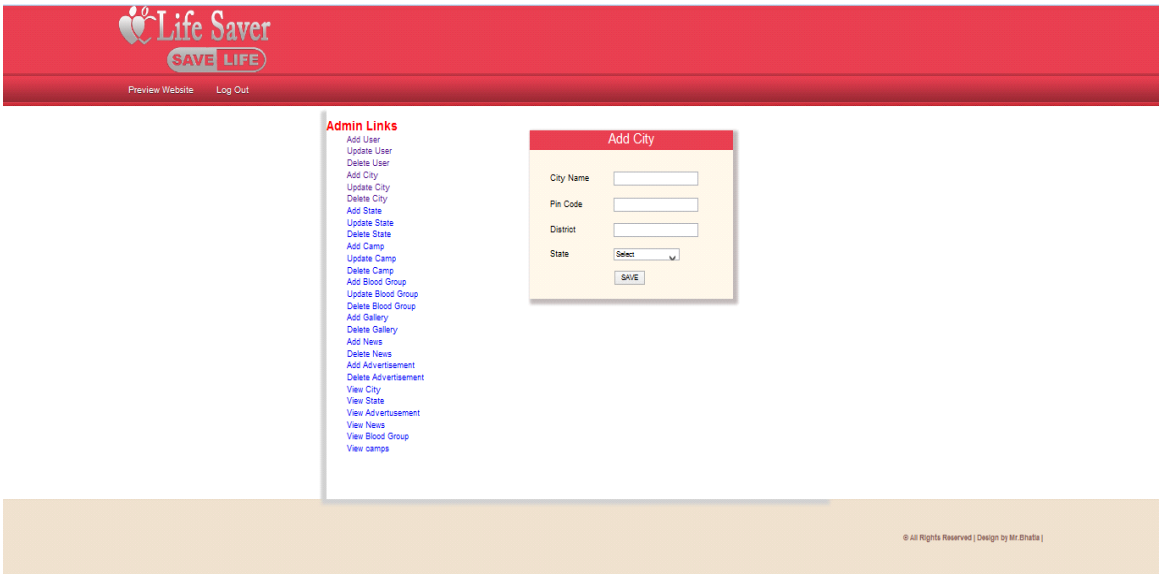

Fig 20: Add City

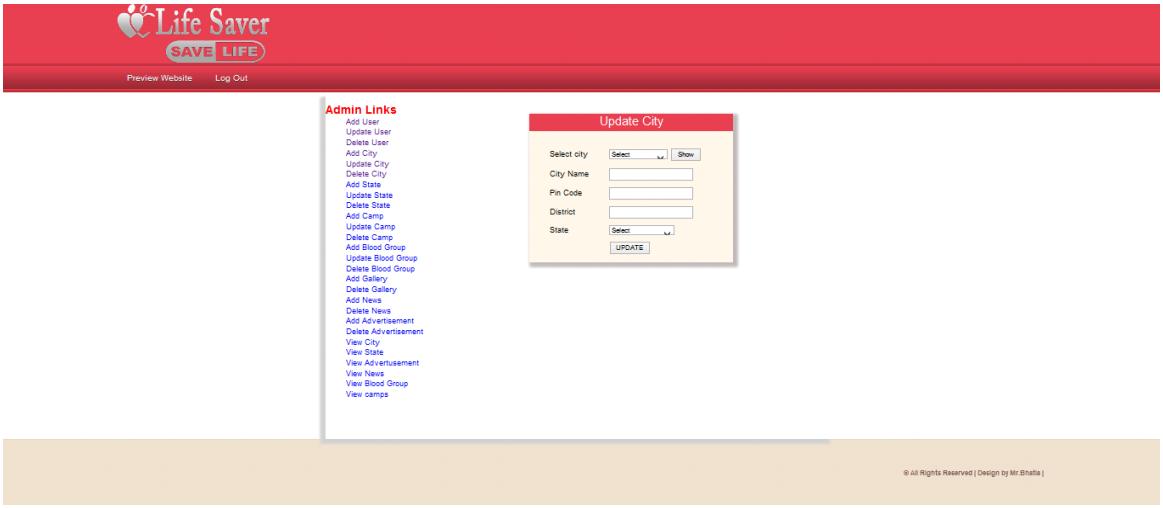

Fig 21: Update City

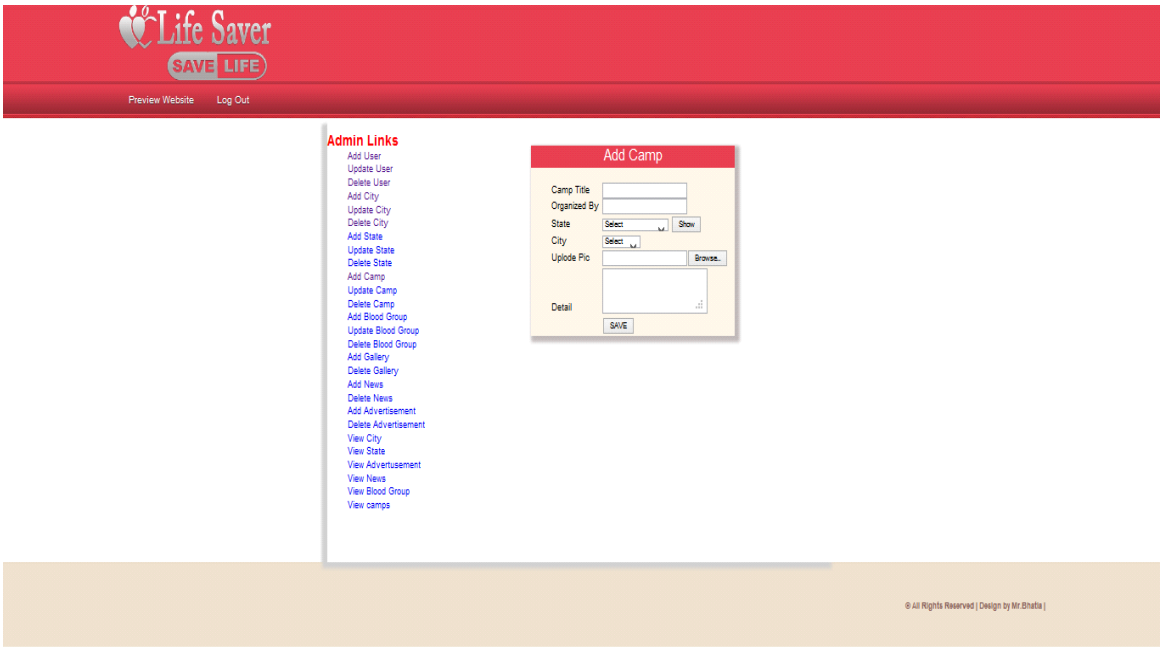

Fig 22: Add Camp

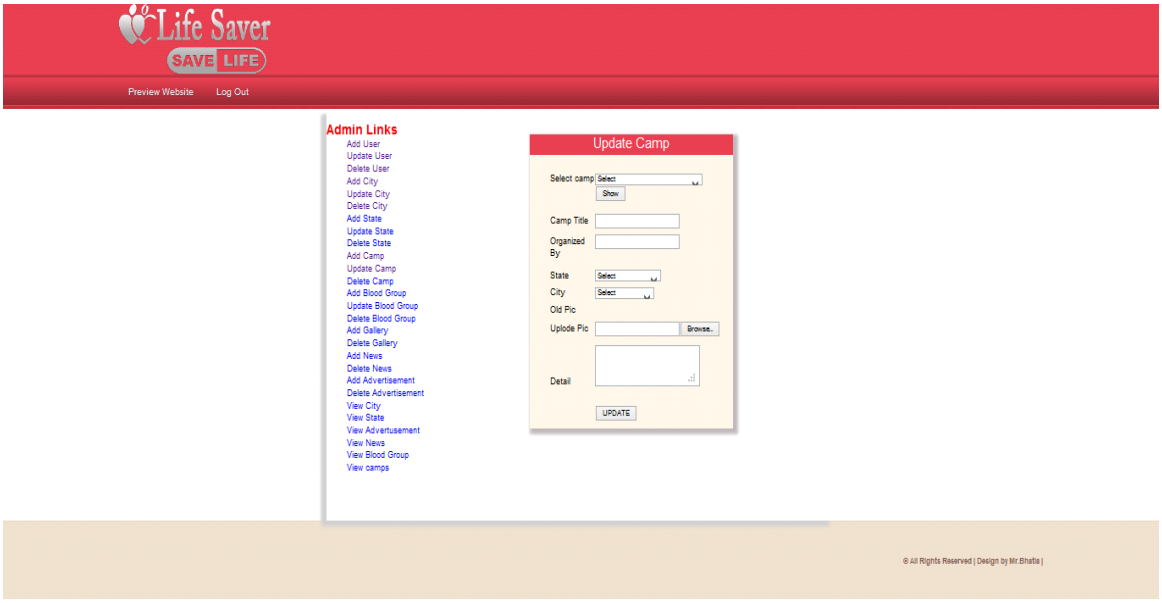

Fig 23: Update Camp

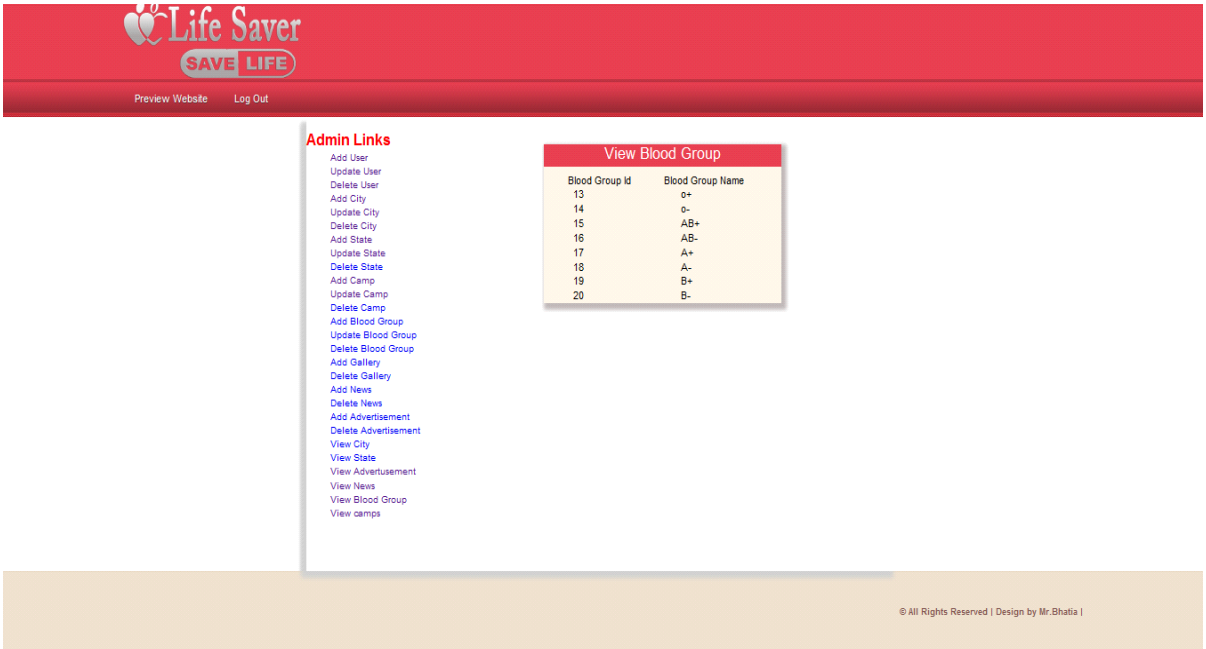

Fig 24: View Blood Group

Chapter-4: System Analysis and design

4.1 Access Level Analysis

In order to take closer look into what the system should do and how, it was necessary to decompose the system's functionalities based on the user type and levels of access. The th ree main user groups and access levels are:

4.1.1 Main System page (Index)

It is required for the system to provide a Main Page where any user will able to access. The main functionality of this page will be to allow any user to search the database by us ing information such as quantity of donated blood, available blood and the groups, or any other general information which may not be considered confidential. The search capabilitie s of the main page might not be limited to the exact donor, but may for example providet he means for displaying any information that might be relevant but not confidential. The Main Page should also include a Login facility for any privileged or normal user to be abl e to have access to more advanced functionalities of the system.

4.1.2 The User Group

When has successfully logged into the system via Main Page Login facility, it will be nec essary for the system to display a specific menu with all available option that can be carri ed out .Therefore by taking into account the system requirement, it will be necessary to in clude options such as Enter donor details, search donor, Use Endnote Facilities, Produce S ummary Information as well as an option that will be related to the appropriate User Guid e. A Logoutoption will also be appropriate for the user to be Able to logout when desired.

4.1.3 Entering- Amending Blood donor Details

For a user to be able to amend and enter into the system's database it will be essential to take into account that the blood donor system will be integrated to Endnote. Therefore, it will be essential for the system to provide to the user the exact fields and Endnote does for any particular type of details. In Addition, when a particular of a given donor has succ essfully been submitted or amended message (i.e. blood donor successfully entered into dat abase).

4.1.4 Searching the Blood Donor Database

The Searching Facility for the user should not differ from the facility that will be provide d on the Main Page of the system for all users. Therefore, user will be able to search any type of information on the database using the same way as specified for the Global User.

4.1.5 Producing Summary Information

For this requirement it is essential to firstly understand why Ans when it will be used and to adjust the functionality to best suit these purposes. In order for the system to efficiently produce summary information it will have to provide a menu providing options such as

Produce Annual Report, or Produce General Report etc.

4.1.6 Endnote Facilities

In order for the system to be effective, it will be necessary for it to be integrated with the Endnote software. Therefore, it will be very significant to accommodate two options that will include Importing blood particulars from Endnote and Exporting blood particulars to E ndnote. How this will mainly rely on taking full advantage of particular Endnote filters tha t are provided for these reasons.

4.1.7 Administrator

For maintenance purpose it will be great significance to include advanced Administrator fu nctionalities that can only be accessed by this particular user group. The most reasonable option for an administrator to perform may include tasks such as deleting donors(should n ot be provided to the user or organization for security reasons), backing-
up and restoring the database, resetting the blood donor databases etc. in addition to these functionalities the administrator may also be asked to perform tasks related to user(i.e. Ent ering new donors, Searching for given donor or available blood group) and therefore any f unctionality provided by the system must be included in the administrator capabilities

4.2 Task Structure Diagrams

By creating task structure diagram, we easy understand task and flow of user. Identifying the task of user and assigning task to user and admin makes the development of website more consistent and effective. In these diagrams we can know about tasks admin, user and organization are going to perform.

4.2.1 The User

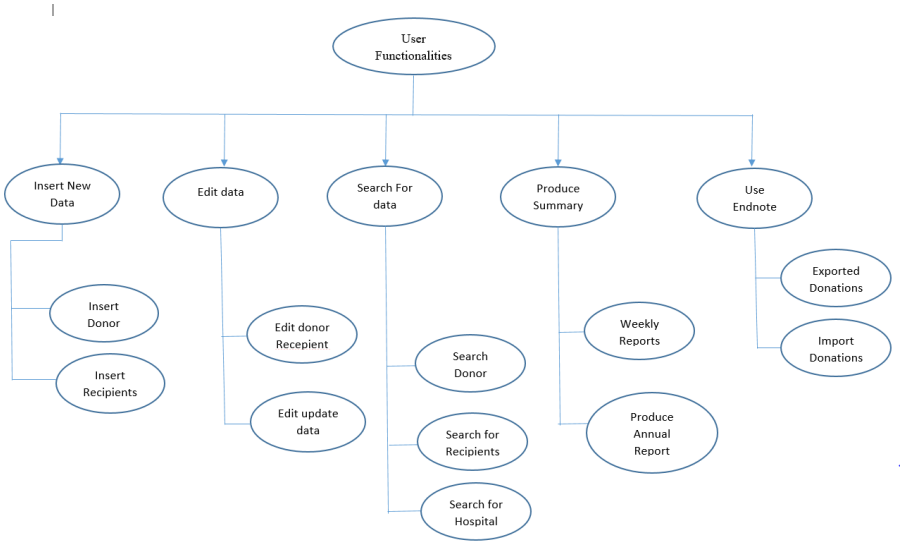

Fig 25: The User Task Structure Diagram

4.2.2 The Administrator User

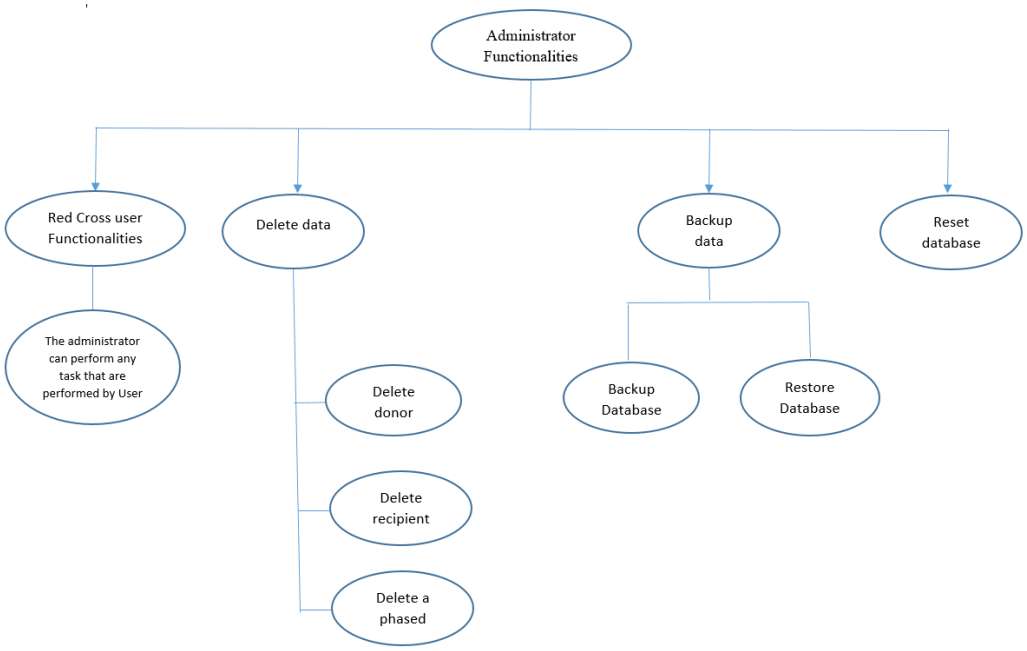

Fig 26: The Administrator Task Structure Diagram

4.2.3 The Global User task Structure Diagram

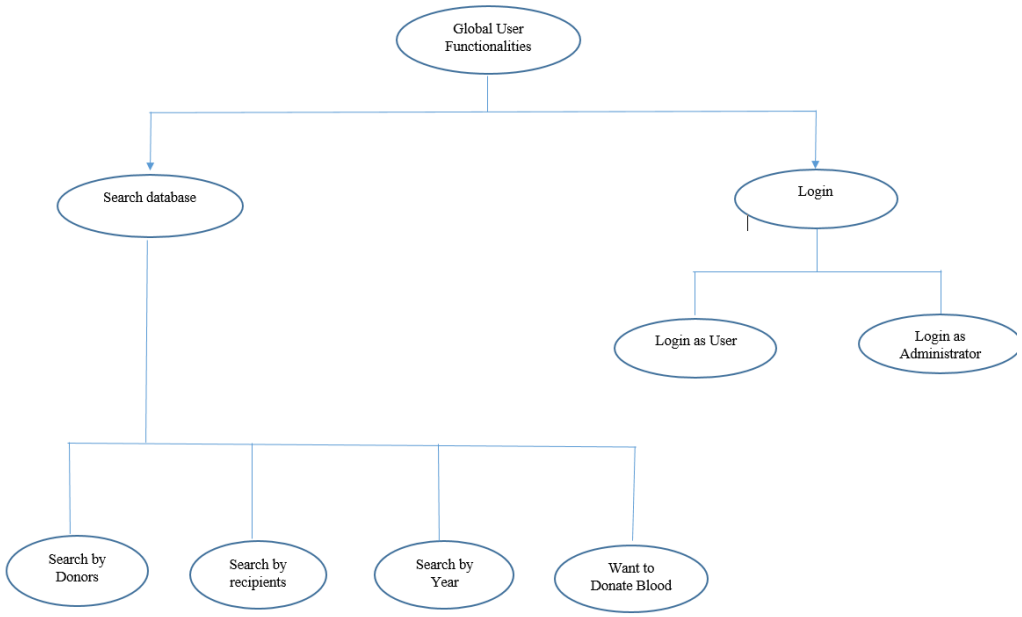

Fig27: The Global User Task Structure Diagram

4.3 Data integrity and constraints: -

Data integrity means in this project every column is depend on other column for that the id of the person of each table is same one use the primary key and the not null property to use the primary key so for that the data of the one user cannot copy or mix with the other user in every table that is user table, thread table the id remains same. The uniqueness of the project can have defined by the identification of the person that is the user enter the email id for sign in on that also one use the primary key that not more than one person can sign in with the same email id. One unique id is assigned to one person so that to identify of that person with this unique id. In table the data is inserted only the user is not registered previously with the same email id. Foreign key specify that tables has the field with the same name but they work differently. In this there are different types of integrity constraints.

- **Not null integrity constraint**: - In this type, the value of all the column is filled with the proper format that is provided by this project for example the email id is required field for that purpose user have to enter the email id in proper format that is abc@gmail.com if the user not fill this field he/she will not be entered to this site.
- **Unique integrity constraint**: - In this project, Online Blood Donation Management .only those users can login to the profile who had registered themselves.
- **Primary integrity constraint**: - In this project, the primary key is available in every table no user can enter more than one time the id can be provided to the user is primary id. The primary key is put on the id column of the table because the persons can have the same name but their id is unique and they are helpful to identify that person. In this project, one is taken care of these constraints that are necessary for this project for using these constraints this project can fulfill the requirement of the project.

4.4 Database Design

4.4.1 Database Screenshots

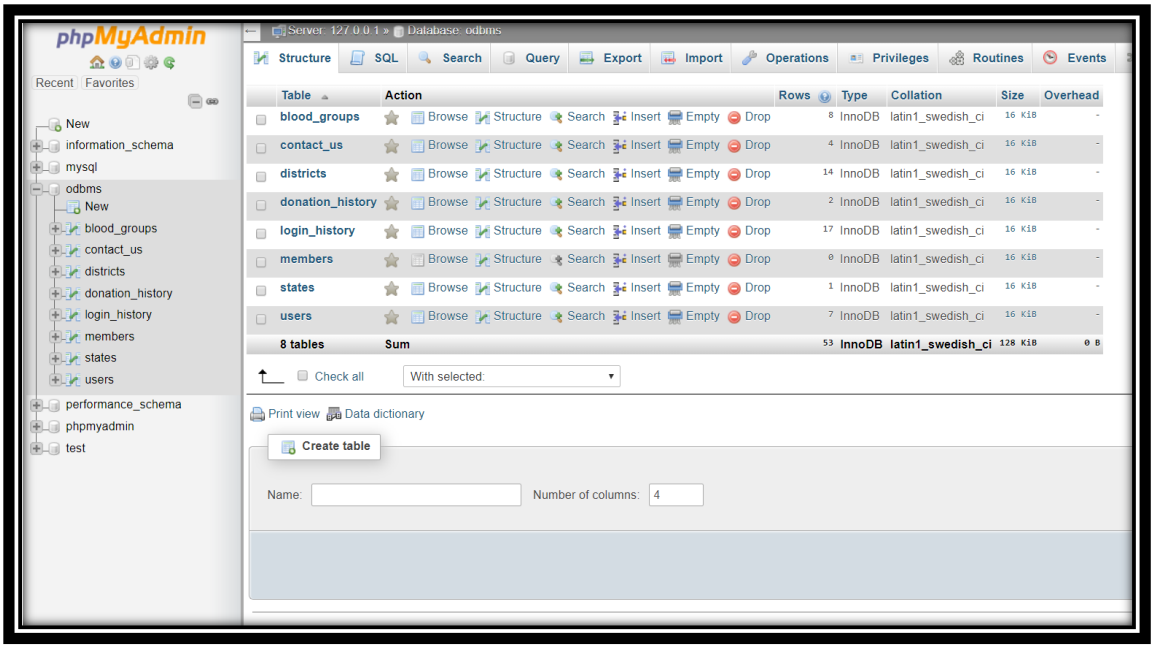

Fig 28: OBDMS Database

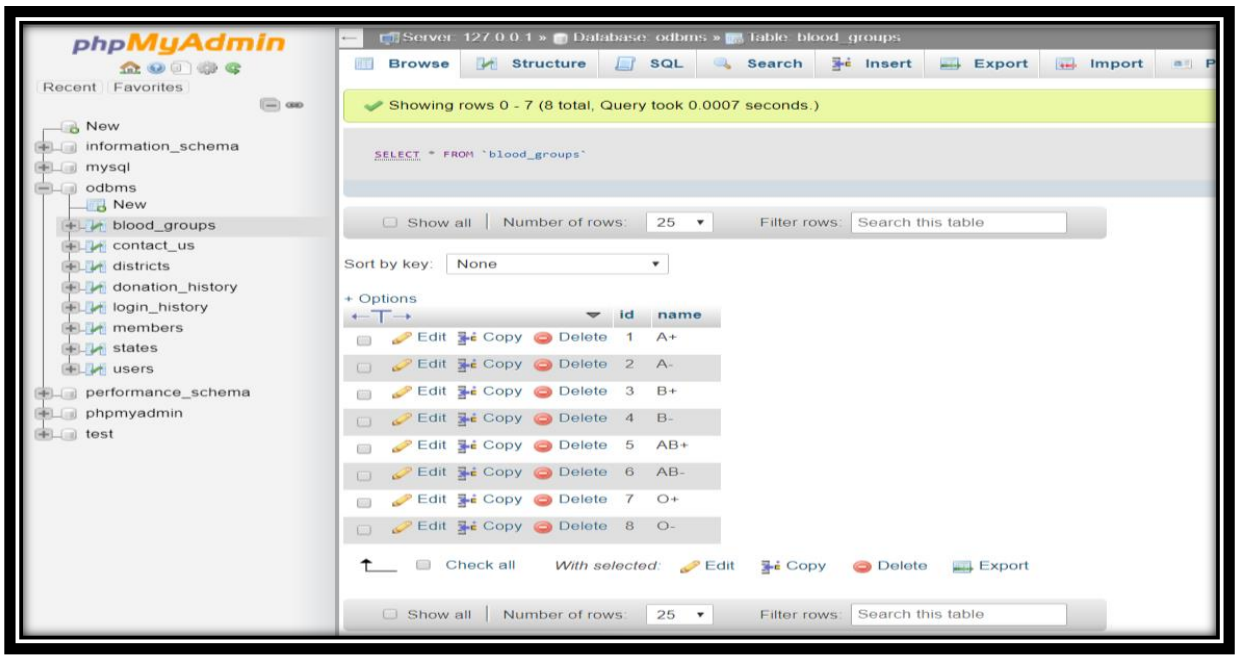

Fig 29: Blood Group database

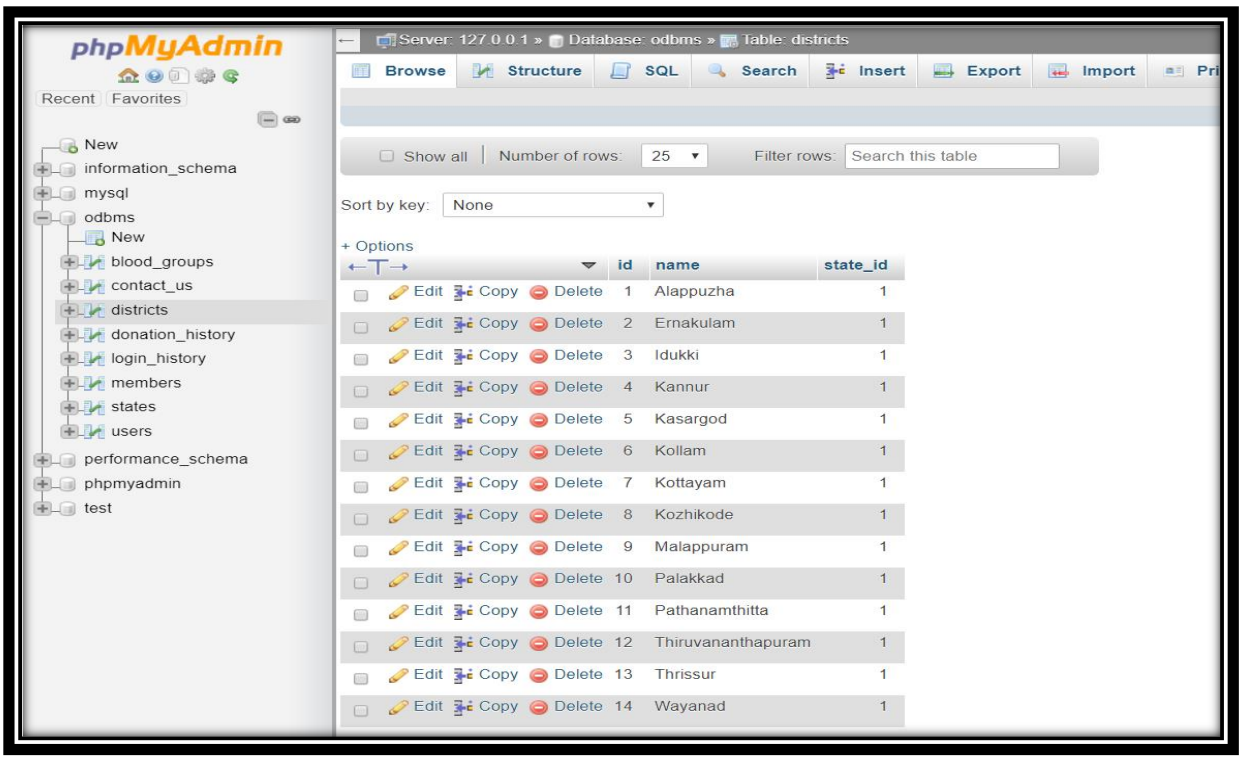

Fig 30:Districts Database

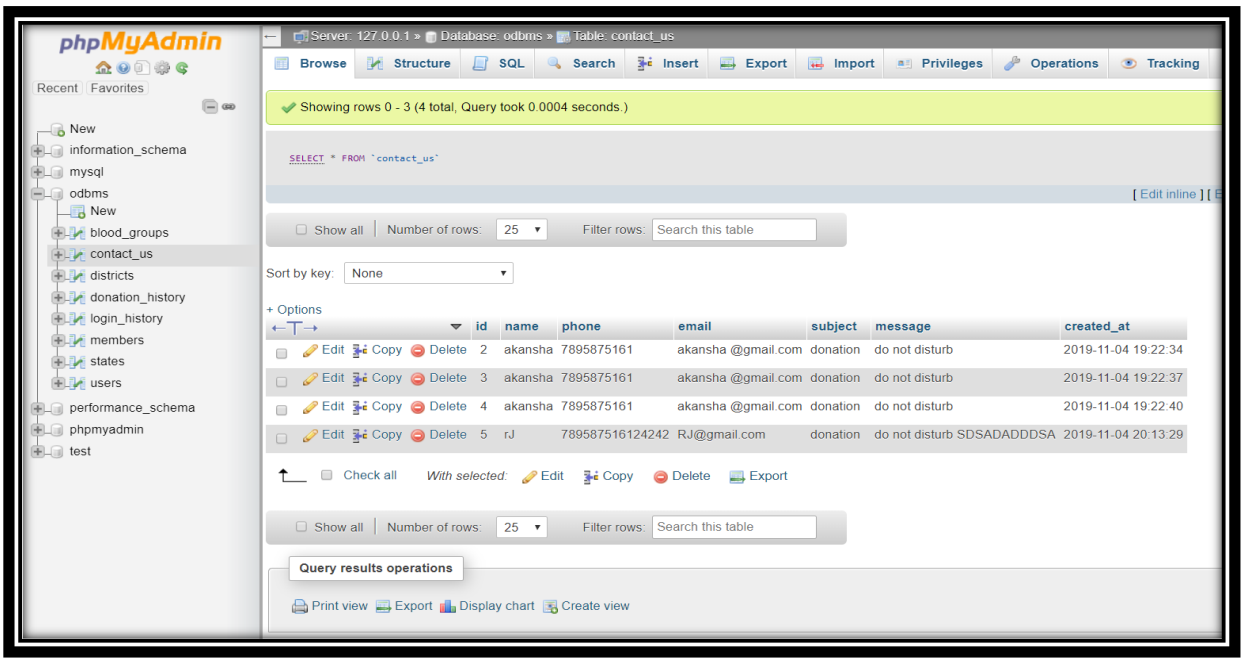

Fig 31: Contact us

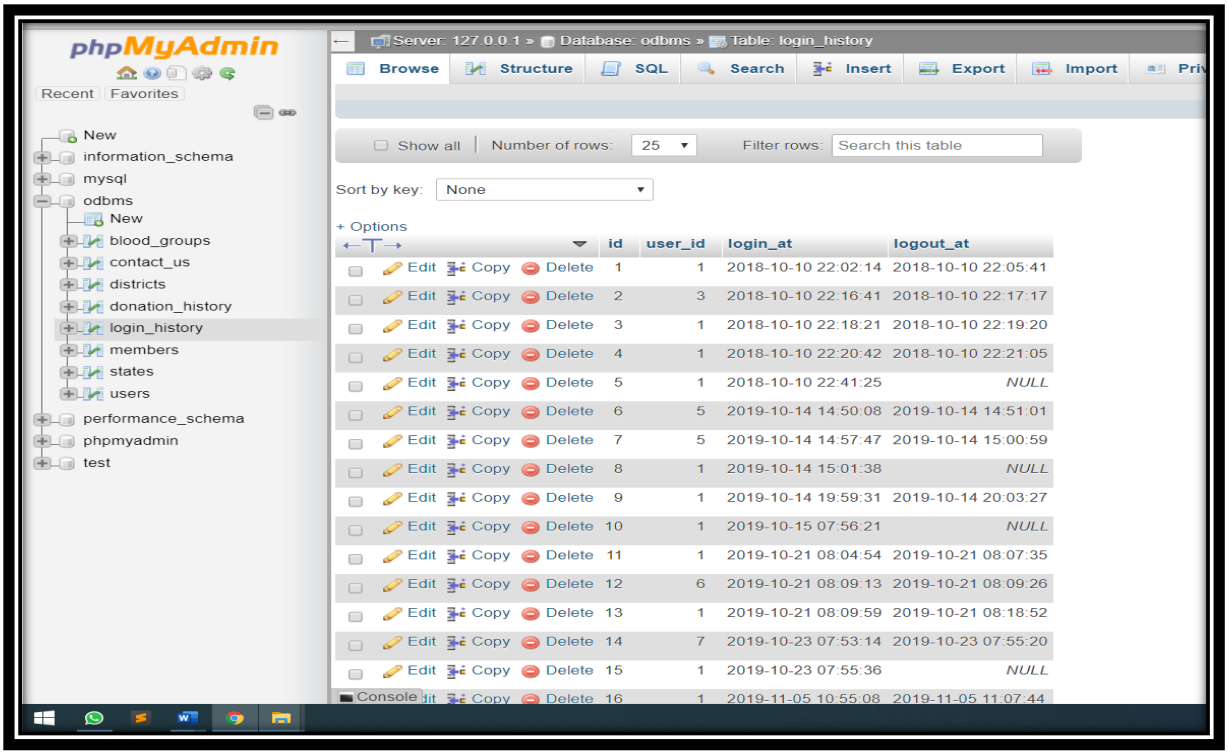

Fig 32: Login History Database

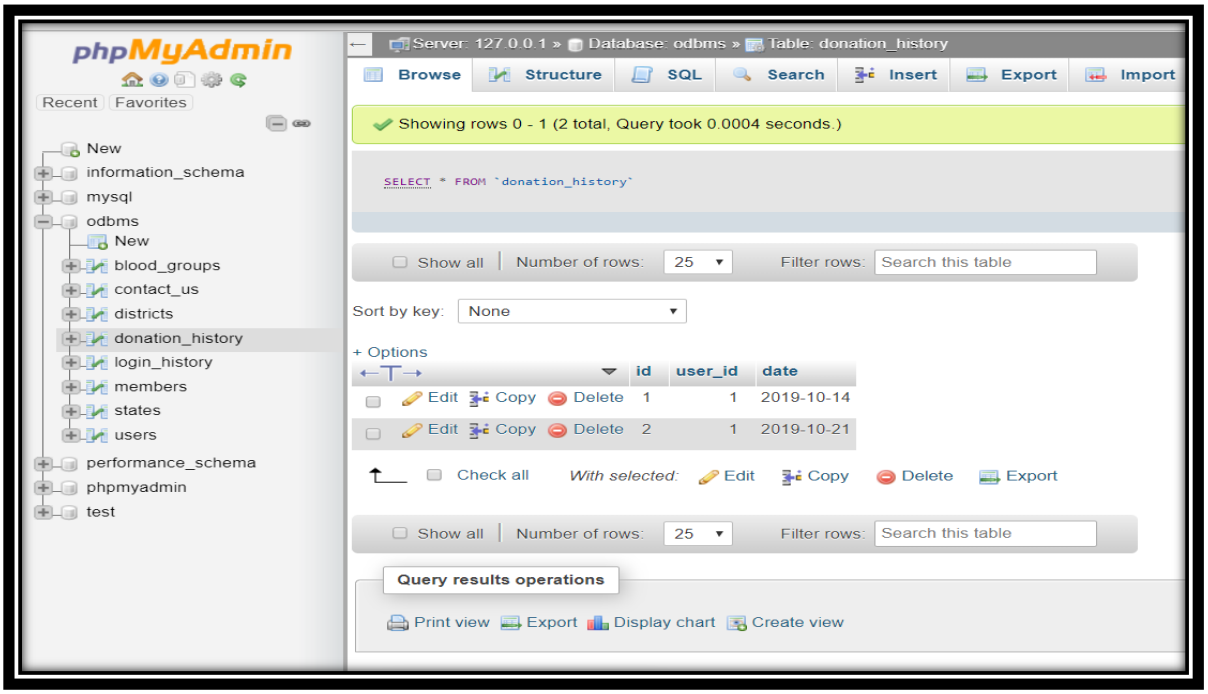

Fig 33: Donation History Database

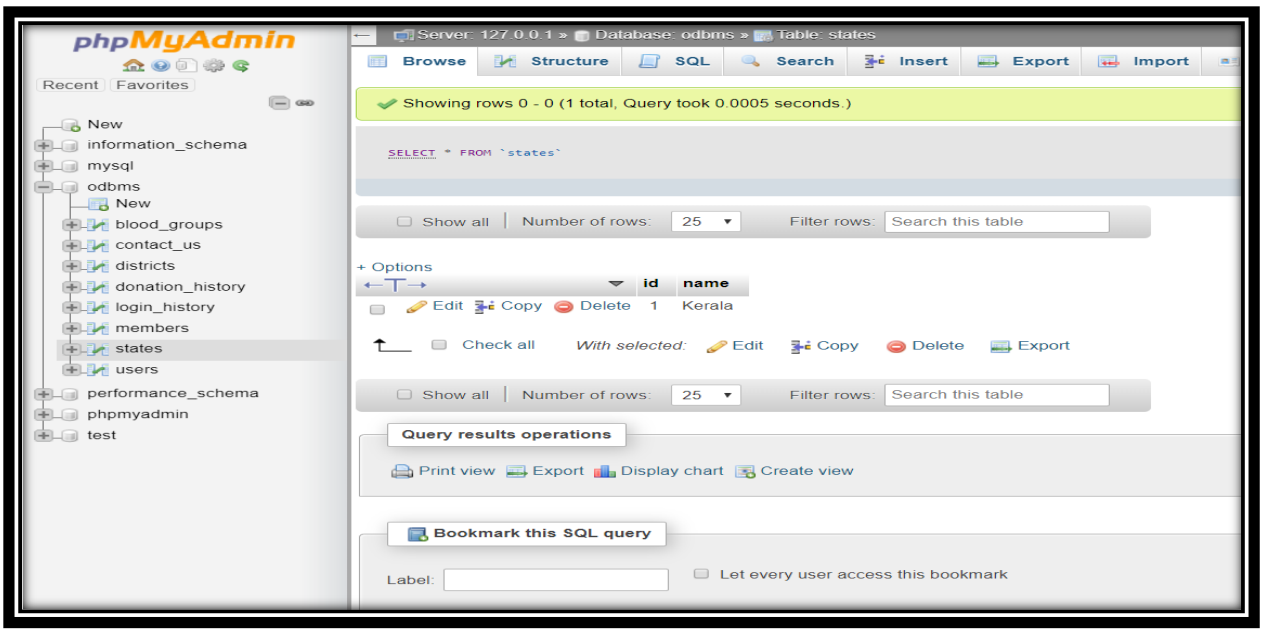

Fig 34: States Database

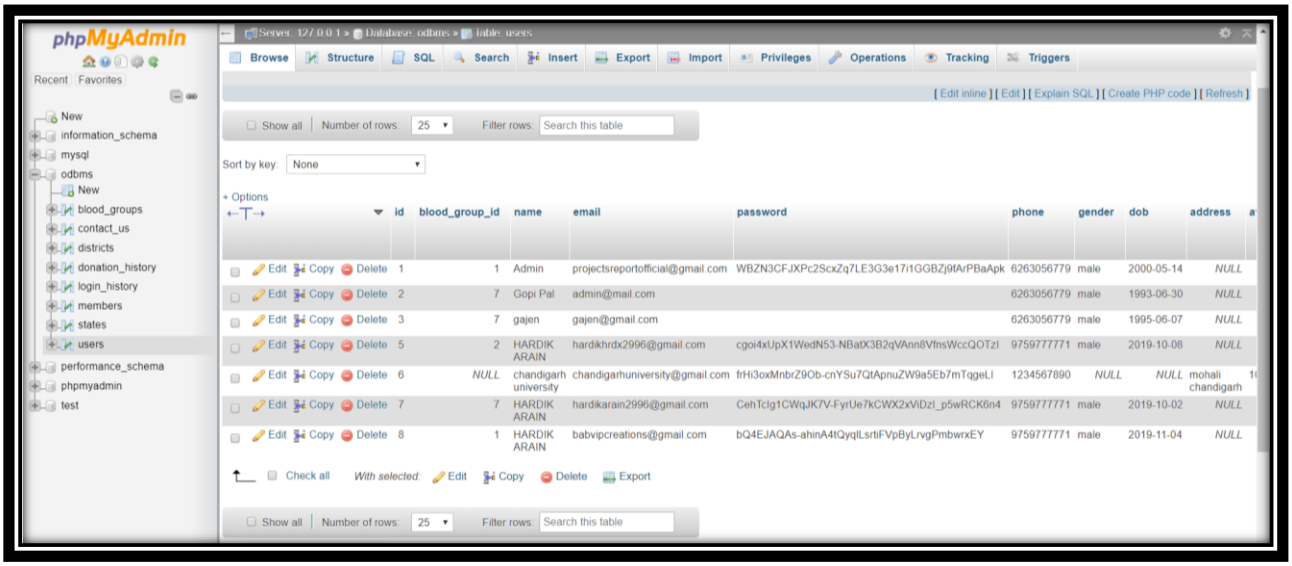

Fig 35: Users Database

DATABASE TABLE

Table: - blood_groups

Table: - Contact_us

Column	Type	Description
Id	int (11)	Unique key of each user
Name	varchar (10)	List of blood groups

Column	Type	Description
Id	int (11)	Unique value of each user
Name	varchar (200)	Name of user
Phone	varchar (50)	Phone number of user
Email	varchar (200)	Email of user
subject	varchar (200)	Subject of donation
message	varchar (500)	Want to know about anything related to blood donation
Created_at	Timestamp	Which time the user sends the request

Table: - Districts

Column	Type	Description
Id	int (11)	Unique value of each state
Name	varchar (200)	Name of the state
State_id	int (11)	Particular id flor each state

Table: - donation_history

Column	Type	Description
Id	Int (11)	Unique id of the donor
User_id	Int (11)	Id for the user
Date	Date	Date of entry

Table: - login_history

Column	Type	Description
Id	Int (11)	Unique id of login
User_id	Int (11)	User id of user
Login_at	Timestamp	Time of login
Logout_at	Timestamp	Time of logout

Table: - states

Column	Type	Description
Id	Int (11)	Unique id of state
Name	Varchar (200)	Name of the state

Table: - users

Column	Type	Description
Id	int (11)	Unique id of the user
blood_group_id	int (11)	Blood group id
name	varchar (200)	Name of the donor
email	varchar (200)	Email of the donor
password	varchar (200)	Password of each account is encripted
phone	varchar (50)	Mobile number of the user
gender	varchar (10)	Gender of the user
Dob	Date	DOB of the user
address	varchar (500)	Address of the user
avg_no_employees	varchar (10)	No of employee in organisation
location	varchar (200)	Location of the user
state_id	int (11)	Unique id of the state
district_id	int (11)	Unique id of the district
Img	varchar (500)	Image of the user
created_at	Timestamp	Time stamp of created account
Status	int (2)	Status is online or offline

user_type	int (2)	User is doner or receiver
availability	int (2)	Availability of the blood

Chapter 5: Test cases

5.1 Tests

The requirement analysis stage involves the design of test cases for the completed system. Test cases are specification of inputs to the test and the expected output from the system plus a statement of what is being tested. (Sommerville,2004)

5.1.1Designing of test cases

The approach followed at this stage can be termed as requirement-based testing – test cases are designed to test the system requirement. For each requirement,test cases were identified to demonstrate that the system meets the requirement. It is a general principle in software engineering that requirement should be testable. This requirement testing is a validation test because it demonstrates that the system has properly implemented the requirements.

Test Case 1:

Title: Index Page

Description: Is index page easy to reach and visit throughout

Assumption: the index page should be easy to reach and open links provided in it.

Test steps:

1. Enter URL to open the website.
2. Scroll the entire website.
3. Open and check the navbar links.

Expected Result: as expected the index page is up to the mark.

Test Case 2:

Title: Registration Page

Description: are user able to register themselves

Assumption: user should register themselves after filling registration form.

Test steps:

1. Click on register from navbar.
2. A registration forms open.
3. Fill the requirement you are asked for.
4. Choose your username and password. And remember it
5. Click on ‘register’.

Expected Result: After clicking on register, message will be displayed ‘user is been registered’.

Test Case 3:

Title: Login Page

Description: checking whether user is able to login to their profile after registering themselves.

Assumption: user login to their profile and access it successfully

Test steps:

1. Open login page.
2. Enter your login id and password you created at the time to registration.
3. Click login.

Expected Result: User is successfully logged in.

CONCLUSION

It is concluded that this project is well planned and executed according to its requirement. This website will work well and satisfy current users and future users as well. It is Every well investigated and all the bugs and errors are being fixed. The site works consistent with the restrictions provided in their individual browsers the speed of the transactions become a lot of enough currently during this site the utilization will search the acceptable donor and receiver .This project main aim is to help Blood bank to automate blood donor and depository online .It also encourages blood donor to donate. It will help people find blood donors in times of need. It focused more on the acquisition, distribution and management of blood units for blood donation activities.

The study specially emphasized the creation and implementation of an electronic management information system that automated blood donor data acquisition and dissemination of results. This in turn will case and speeds up the planning, decision making process because of the timely, secure, confidential and reliable reports.It is necessary for people to be aware about donors and blood group so that they can ask for help. Even donors should also be updated and know about people who need them. This way we can help each other in better way.

To let this happen we need a way so that we can reach everyone quickly and easily. For this this website is being designed, from can find the blood donors on remote location easily and contact them.

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