BLOOD DONOR MANAGEMENT NETWORKING SYSTEM

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APPROVAL

This project titled **"Blood Donor Management Networking System"** submitted by **Rahabar Mustakim**, ID: 163-15-8327, **Md. Hasan Shariar**, ID: 163-15-8351 and **Abir Hasan**, ID: 163-15-8321 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 05 November 2019.

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We hereby declare that, this project has been by us under the supervision of **Shaon Bhatta Shuvo, Senior Lecturer Department of CSE,** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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In the end, we must acknowledge with due respect, the constant support and patience of our parents.

ABSTRACT

There's a story beneath this project, we always wanted to design a system that can help people to get in touch with the blood donor in. So, we named is "Blood Donor Management Networking System". This blood management system will let us find a blood donor in a secured way where all the information will be hidden from each donor and seeker. This app will work under a specific area or place in that all the data of blood donor will be stored previously. We are revealing this method for the web version. But further, we will possibly make it for mobile OS. We have surveyed in a few different places where we have got results that people who needed at least one bag of blood have survived. This is the motive that we are forming this system.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

"Blood Donor Management Networking System" is considered to be a type of web application; this web app is designed for everyone who needs blood donor in critical situation. It contains a data of blood donor by specific areas. Specific donor will be found in specific areas.

1.2 Motivation of work

Nowadays thousands of people are dying for not getting blood in a certain period of time or in their critical time. We have decided to build a system that can solve this major problem. We have surveyed a few times on some random people where we saw how they have suffered while searching for a bag of blood in their critical time.

1.3 Objectives

- It's a portable Software which will be install in every hospital
- Patient don't have to log in or do registration
- Only shows the requested blood in a certain area.
- Providing information is easy than any software

1.4 Expected Outcome

This project is to develop a web app that will help people in their critical situations. So many people are continuously searching blood for their loved one daily. It surely sustains and help thousands of people over the country. We hope our project will run for a very long time. In the generation of digitization this is a huge step for us and also for the country also.

1.5 Report Layout

Chapter 1: Introduction

In this chapter the discussions are about the motivations, objectives and the expected outcome of the project. Later part the report's layout is being followed.

Chapter 2: Background

In this chapter the discussion is about the background circumstances of our project. We also talk about the related works, comparison to other candidate systems, the scope of the problem and challenges of the project.

Chapter 3: Requirement Specification

In this chapter we talked all about the requirements like business process modeling, the requirement collection and analysis, the use case model of the project and their description, the logical relational database model and the design requirements.

Chapter 4: Design Specification

This chapter is all about the prototype of the project, front-end design, back-end design, interaction design and UX and the implementation requirements.

Chapter 5: Implementation and Testing

This chapter includes the implementation of database, front-end designs, interactions and the test results of the project.

Chapter 6: Conclusion and Future Scope

Here we have discussed about the conclusion and the scope for further developments

CHAPTER 2

BACKGROUND

2.1 Introduction

"Blood Donor Management Networking System" is an outstanding donor management system that can consume a huge time. Patients number are hidden from the screen and it has a limitation of are so that patient can get donors near them.

2.2 Related Work

There is a few web-based blood management applications but are many mobile application available on the internet. They are:

- Blood Donor by American Red Cross
- BloodMe - Blood Donor App BD by MRB Apps Studio
- BloodLine - Blood Bank App BD by Creniputer Lab

2.3 Comparative Studies

Our designed system is initially different from other related apps. In this system each user can easily operate by just two buttons. This apps only shows the specific donor in specific areas and directly connect each other through an interconnected network. All other apps have an open database where user can look into all donors' information which is not safe sometimes but we made this hidden. This apps provides information of a specific number of blood donor where other apps display an entire list of blood donor.

2.4 Scope of Problem

- It is hard to maintain this apps because this system will be installed in a public place

- Collecting and sorting real donors information could be an issue.
- It is hard to make this system offline.
- Usually this apps collects information manually so this will be an issue to solve.

2.5 Challenges

- To make this apps more user friendly.
- Solving errors until it solved
- Detecting real donor from bulk information
- Making a secured platform for everyone.
- Making a beautiful and effective interface.
- Creating dynamic data passing channel.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business process modeling is the graphical representation of a business process. In this process we can see that how the app work when a user tries to donate or request for blood through this apps. When a user clicks “donate” button, the button will ask for information to provide and then report to the patients. And when a user clicks “Request” option options then the user will also be asked to provide information and then report to some specific blood donor near them.

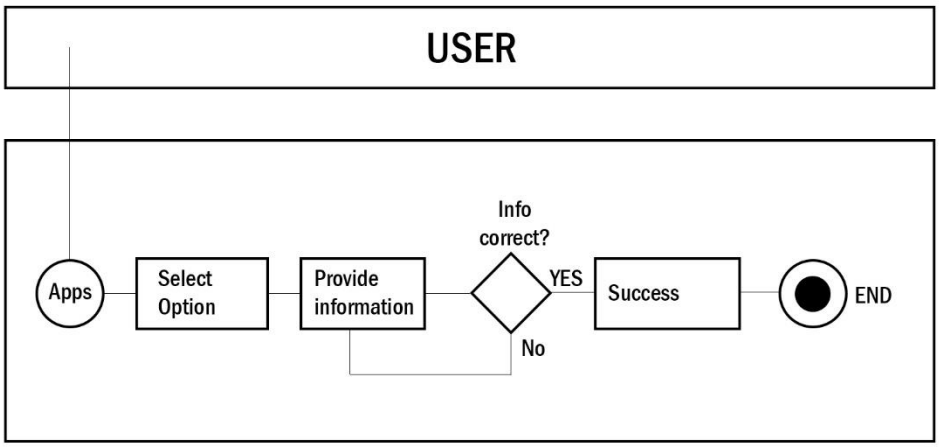


Figure 3.1: Business Process Model

3.2 General System Requirement

Nowadays computing devices are very popular and comparatively powerful, people want to embrace and get benefited everywhere. However, to make their lives more efficient.

3.3 Use Case Model

Following use case model will represent the relationship of primary actors like users with the system and various aspects of uses of the software briefly. And Figure 3.2 shows the use case of object detector.

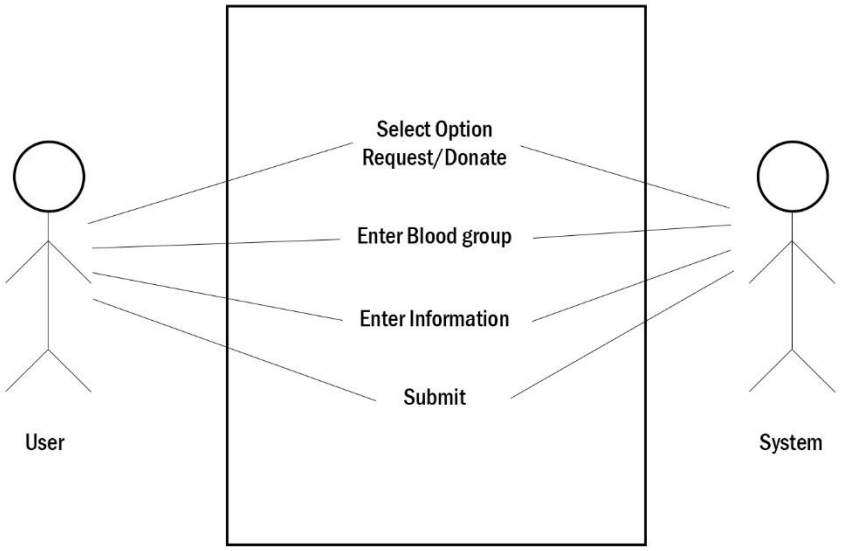


Figure 3.2: Use case diagram

3.3.1 Use Case Description

Use Case: Blood Management

Actor: User, System

Purpose: Find Blood donor

Description:

- First Select option Request or Donate in the system. If want to donate then press donate button or if need blood then request button.
- Select Blood group and proceed
- Provide some information and finish

3.4 Logical Data Model

The term Logical Data Modeling is a process used to define and analyze requirements needed to support the business process within the scope of corresponding information systems in organizations. An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure.

The elements of an ERD are:

- Entities
- Relationships
- Attributes

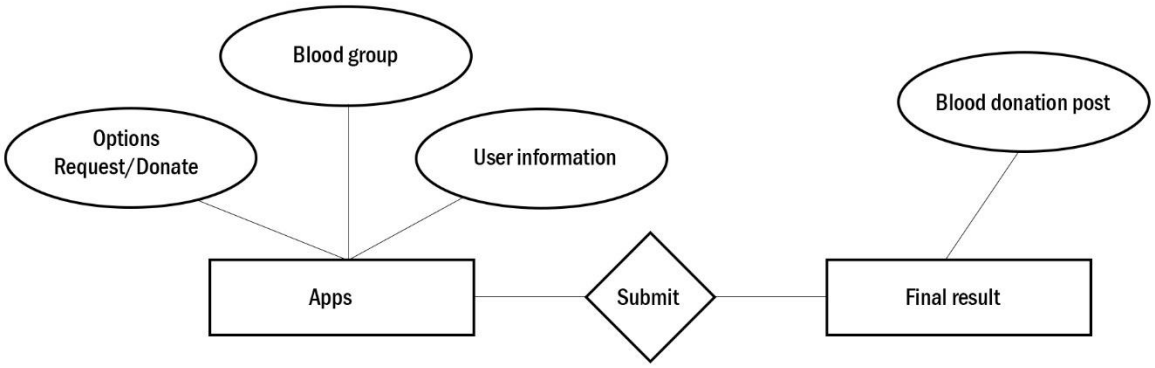


Figure 3.3 shows the ERD Diagram

3.5 Design Requirement

Design requirements are the working characteristic that enables the user to change ideas into design form. The user wants and needs describes the actual button donate and request form. The following figure shows the steps of design requirements for this apps.

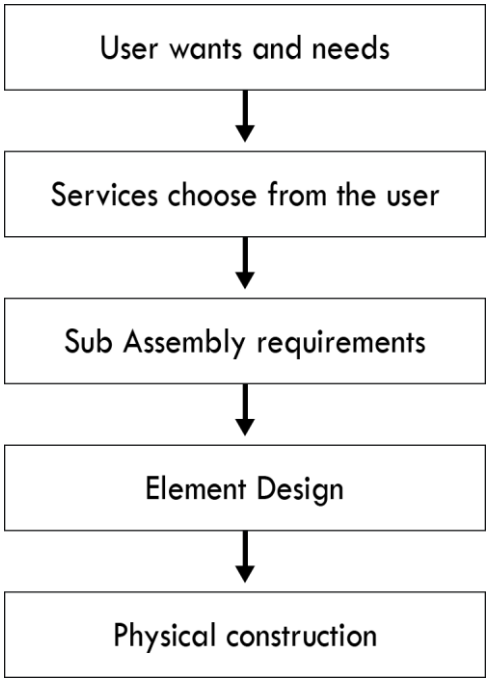


Figure 3.4 shows the design requirement flow chart

3.5.1 Blood donor finding

From Fall 2018 semester we have started our online survey via google form to find the needs of this blood donor management system and we have got some outstanding results. More than 37% from some random people who are regular blood donor and another 25% random people who agrees to donate blood in needed. The online survey report is given as bellow.

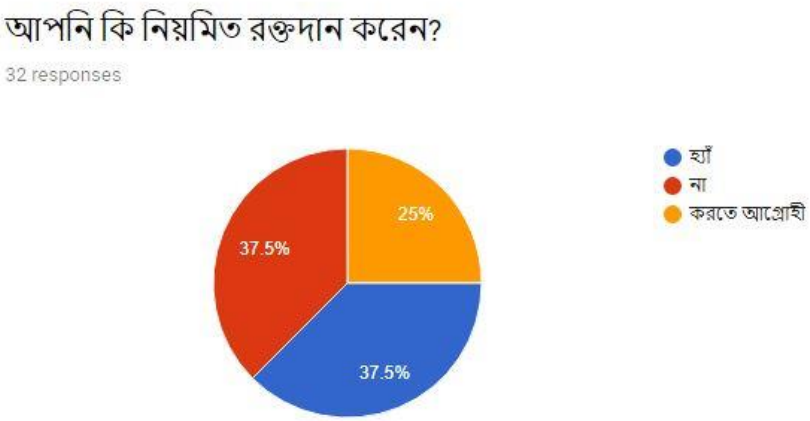


Figure 3.4.1 Blood donor responses

3.5.1 Blood Seekers responses

More than 59% from some random people who have searched for blood in their critical situation at least ones in a lifetime. The online survey report is given as bellow.

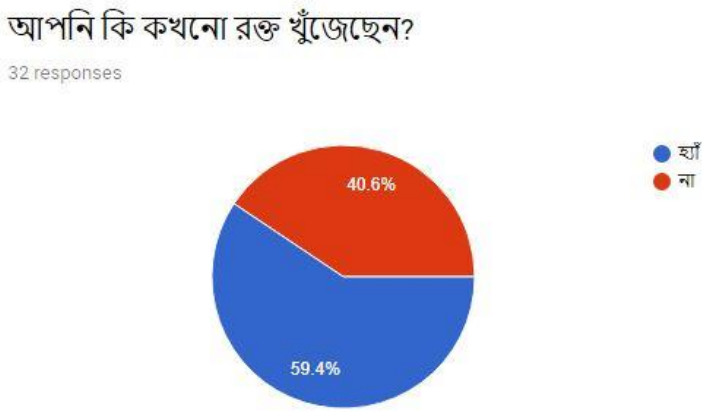


Figure 3.4.2 Blood Seekers responses

3.5.2 Blood Seeking Problem

Those who had searched for blood donor in their need, have suffered mostly. More than 47% of them have suffered in search of blood donor and more than 8% of them have suffered extremely in search of blood donor. The online survey report is given as bellow.

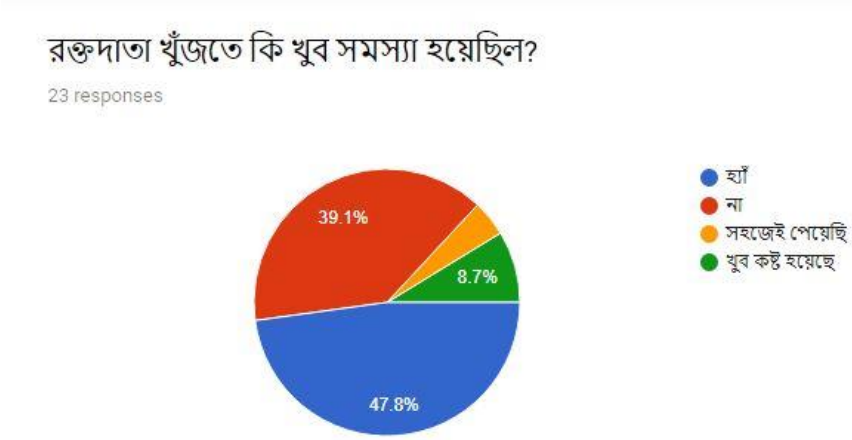


Figure 3.4.3 Blood Seekers responses

3.5.3 Blood Donors occupation

From a few random people on those we have took a survey, most of them are young and student. They are extremely active and always stay fit to donate blood. More than 62% of them are student and 20% of them are professionals. The rest of them are from different occupation.

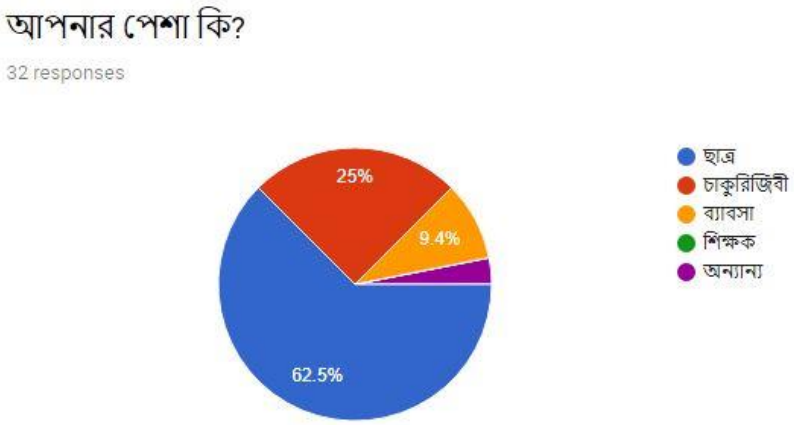


Figure 3.4.3 Blood donors occupation

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

Front-end design is the main user interface that show the output of a system. It contains the beauty of a software. It is the main point where people directly interact with the system. Front-end design is very important for application. The output of the design in web view.

4.1.1 Apps Layout

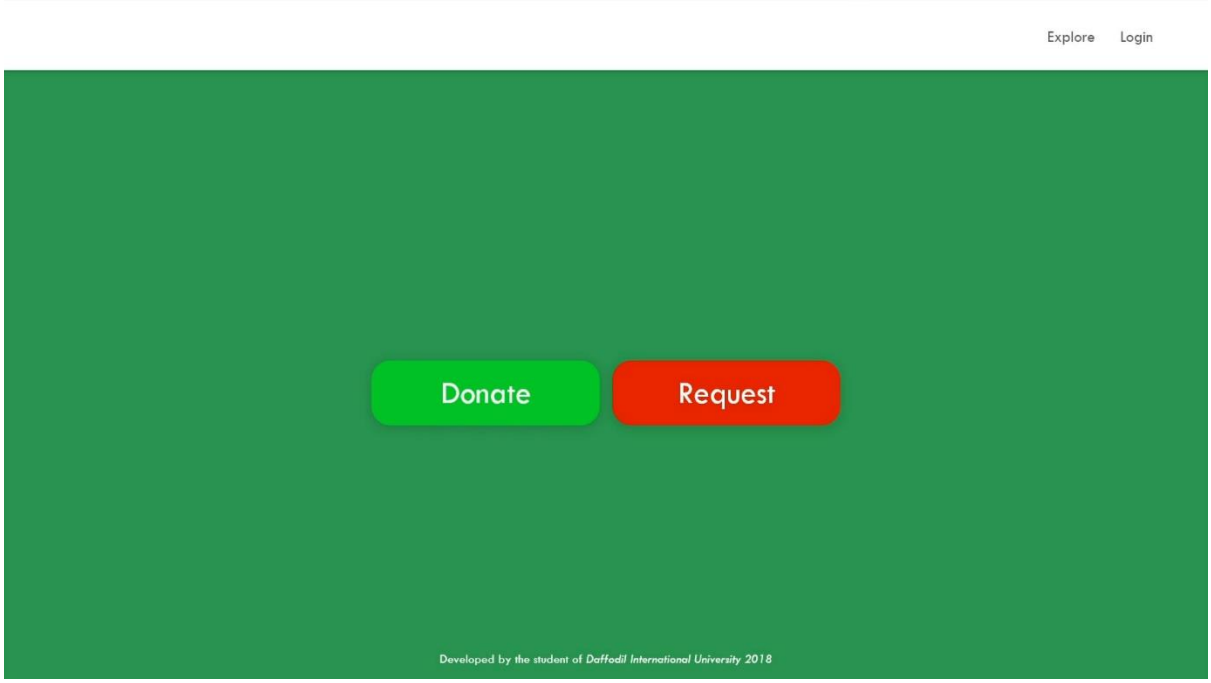


Figure 3.5 shows the apps layout. Here is the main two option.

4.1.2 Apps form Layout

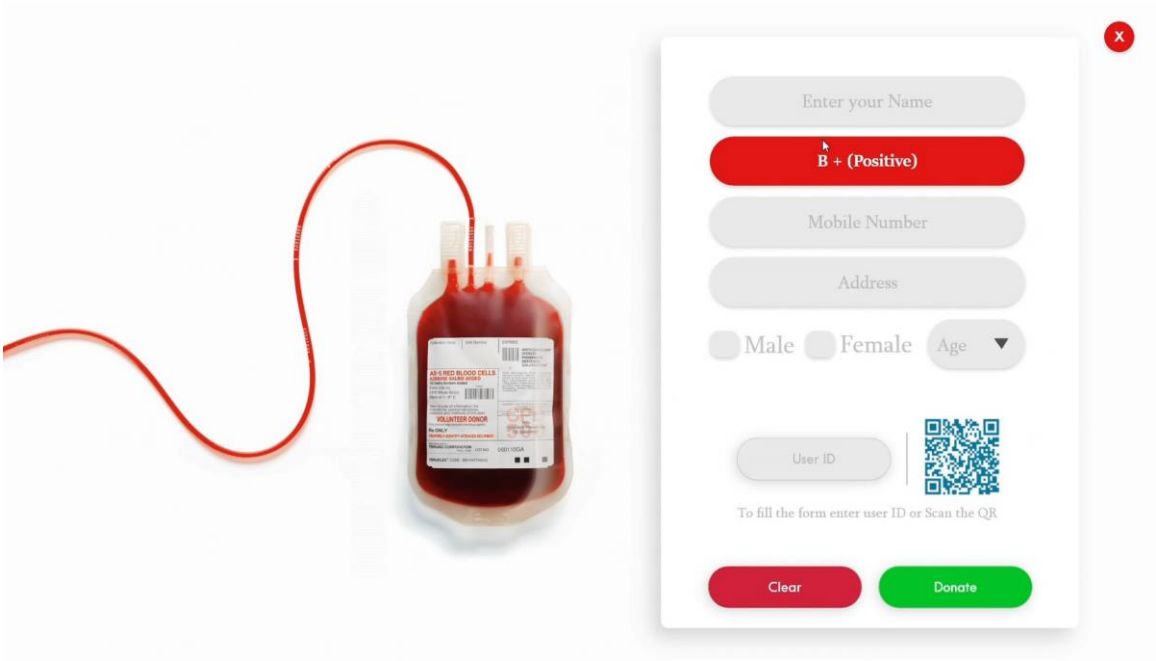


Figure 3.6 Shows the form used in our apps to donate blood

4.1.3 Blood request Form

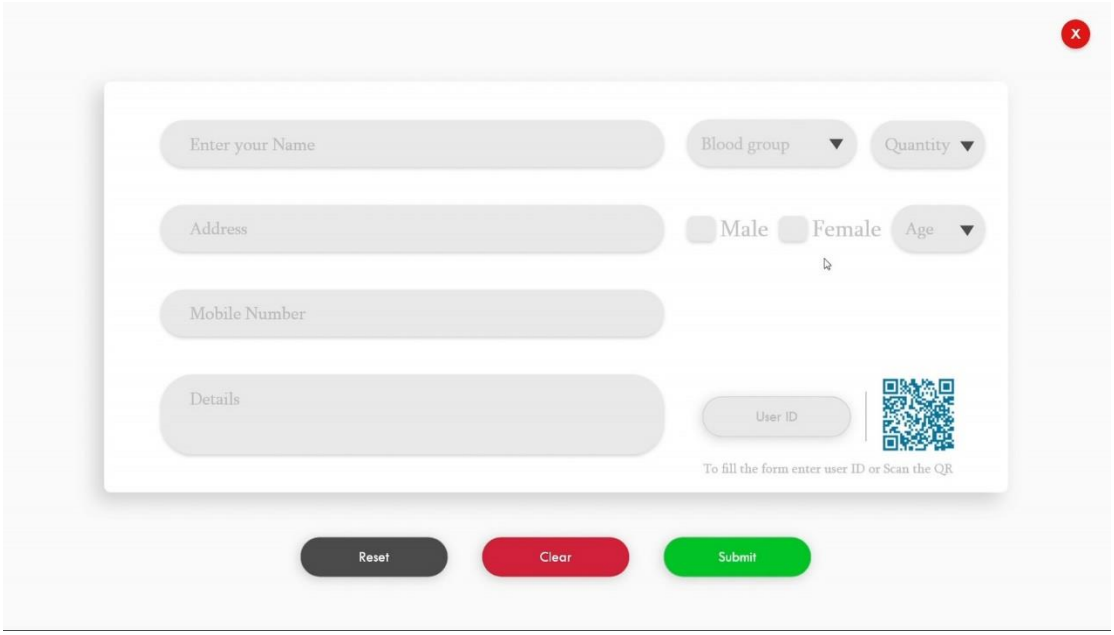


Figure 3.7 shows Blood request form

4.1.4 Output Layout

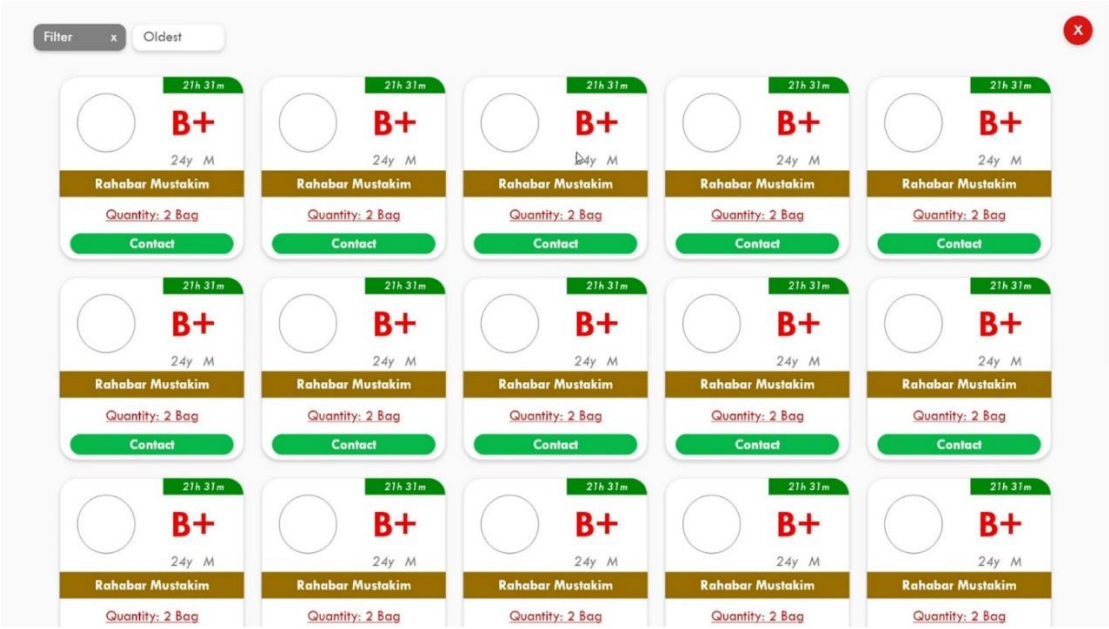


Figure 3.8 shows the output of our web apps. Here people can see the list of blood seekers.

4.2 Back-end Design

In this part we will discuss about coding. Most of the cases we used PHP (Laravel). Back-end is such a part where all the logics are worked behind the system. The user cannot interact with this part or anything. The back-end design is the part where the actual work happens. This part is the most crucial part for a developing a system.

4.4 Implementation of Requirements

- UI design implemented with Adobe Xd.
- Invalid data input displays error message.
- Required data fields are checked to get full information.
- PHP Laravel for specific design.

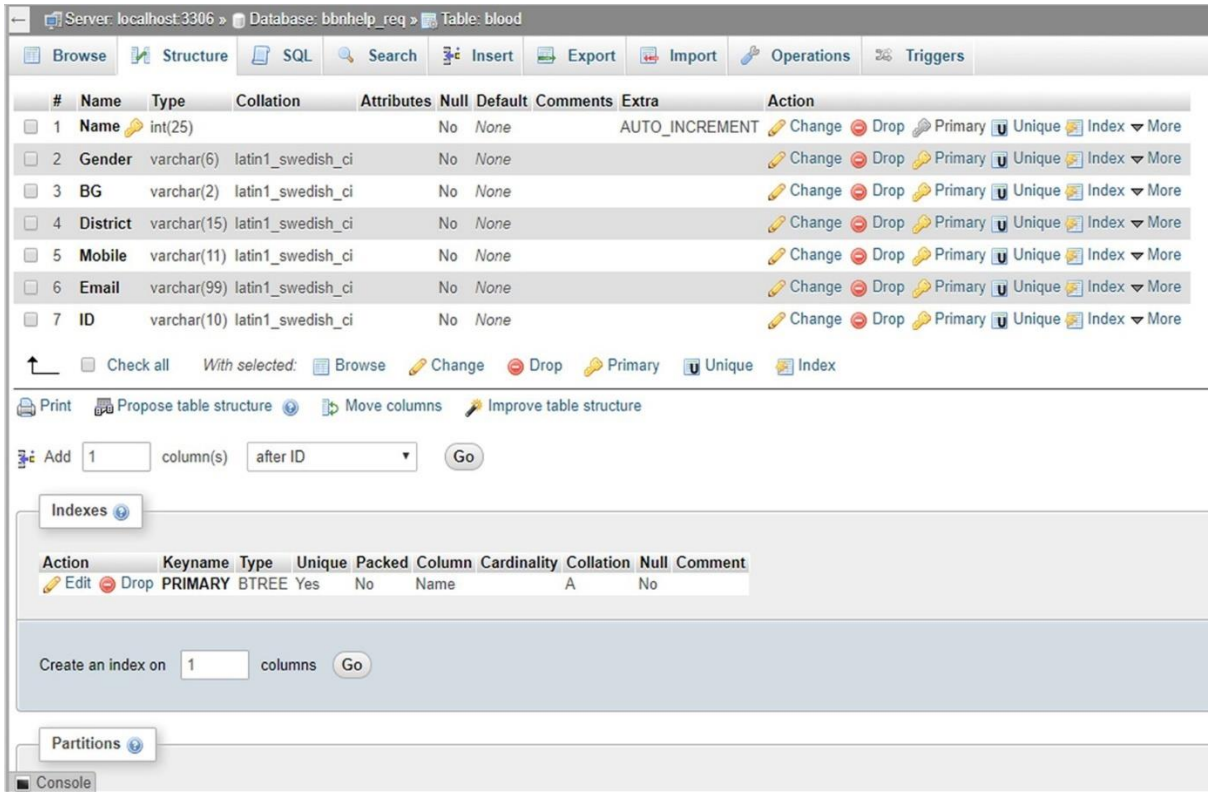
CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

The database we have used is localhost, which is primarily chosen for this project. Here is the structure of our blood management database. We have created name as a primary key.

Table 5.1: A primary database for blood management



5.2 Implementation of Front-end Design

It is so hard and challenging to create a simple user-friendly UI design for all type of users, we have made as simple as possible. In this project, we have used a few WordPress plugin to make this project friendlier.

This deep compression method is not explored in this project due to time constraint, but it worth looking into in future development. Smaller model is not only beneficial for storage capacity, it should also be beneficial for computing efficiency.

5.3 Implementation of Interaction

Here we have implemented responsive UI for better user experience. The system design of our app is user friendly. All type of people can operate it easily.

5.4 Testing Implementation

Testing implementation is a procedure of testing upcoming implementation of a system, where the tester or system architect will see cases and specification, whether it is implemented or have limitations.

Table 5.2: Test case evaluation

Test Case	Test Input	Expected outcome	Obtained outcome	Pass / fail	Tested on
Case 1	Blood Group: B	Successfully posted your ad	Invalid Blood group	Fail	15/07/19
Case 2	Blood group: B+	Successfully requested for blood donation	Successfully requested for blood donation	pass	15/07/19
Case 3	Blood group: AB+	Successfully requested for blood donation	Successfully requested for blood donation	Pass	15/07/19

5.5 Test Result and Report

This test was experimented by some of our friends and checked by our co-supervisor and found an excellent result. We found some problems and faced some difficulties

while testing the project. We have corrected it after that and tested a few time over and over to find out more issues. A few thing we couldn't solve yet but still trying to solve those issues to create a more user-friendly interface. Finally all of us are very satisfied and enough confident about the whole testing and outcomes.

We have added some of the test cases above and many other test case which we couldn't add in this paper. But we can assure that the system is already usable at its best condition.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

We have nearly implemented the system “Blood Donor Management Networking System” by taking help of some various tools and links. Our project is still in offline and nearly ready to be installed online. Finally, we hope that our project will run a long path in popularizing and will help the entire people who needs blood donor.

6.2 Scope for Further Development

The project we have created for the people or user for a long tide of time. So, the design and functionality are controlled to user interaction only. We developed a simple user-friendly interface. We will surely add a few integrations for our apps for further evaluation or remove any types of unnecessary modules. We will make this system for non-smartphone users also. We have planned to develop the following item for our project:

- On call blood donor
- Android/IOS apps
- Integrate Google Map

An android/IOS apps will help user to find blood donor on the go with an active internet connection but on call blood donor finding system will let users find blood without the connection of internet by dialing a specific number. Integrating google map people can search for blood in that area by the position of the user using a map.

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APPENDIX

From Fall 2018, Semester we planned to make something to reduce time for searching blood and then we begin this project. This system is to make a new way for the people who can donate or request for blood from their non-smartphone. For implementing and maintaining our system we followed the model with all the hard work and spending a lot of time on planning, designing, developing and implementing we finally were able to reach our ambition. So, we believe that this project **"Blood Donor Management Networking System"** will be a highly effective and sustainable blood donor management system for all its user. With the tide of time surely, we will upgrade our system as much as possible to make this apps more user friendly to all its user.

PLAGARISM REPORT

Plagiarism report of blood donor v1

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