

AN ANDROID BASED APP FOR “FOOD WASTAGE REDUCTION THROUGH DONATION” .

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

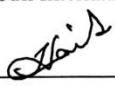
This Project titled “An android based app for food wastage reduction through donation”, submitted by Sajal Das, ID: 142-15-3492 and Upama Sarkar, ID: 142-15-3454 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 7th May, 2018.

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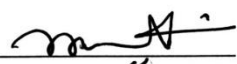


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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Dr. Md. Monzur Morshed, Professor (Adjunct), 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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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Our project title is “An android based app for food wastage reduction through donation”. It is an android app for social work. This app has some features. The features are login, registration, post, profile viewing, view post,call. There are two kinds of user this app, one is donor and other is receiver. Sometime a lots of extra food being wasted and get place in dustbin but we want to donate this food any needy people but we can't do this because we have no easy option to donate it, that reason we create this app. On the other hand lots of needy people or needy organization need lots of food they can't collect food from any certain system in that case they can use this app. So it is very helpful for different levels of users.

TABLE OF CONTENTS

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	ii
Declaration	iii
Acknowledgements	iv
Abstract	v
CHAPTER	
CHAPTER 1: INTRODUCTION	1-2
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1
1.4 Expected Outcome	2
1.5 Report Layout	2
CHAPTER 2: BACKGROUND	3-4
2.1 Introduction	3
2.2 Related Works	3
2.3 Comparative Studies	4
2.4 Scope of the Problems	4
2.5 Challenges	4

CHAPTER 03: REQUIREMENT SPECIFICATION	5-12
3.1 Business Process Modeling	5
3.2 Requirement Collection and Analysis	6
3.2.1 Resources used to develop and improve the system	6
3.2.2 Resources used to develop and improve the system	6
3.3 Use Case Modeling and Description	7
3.4 Data Flow Diagram	8
3.5 ER Diagram	10
3.6 Design Requirements	12
CHAPTER 04: DESIGN SPECIFICATION	13-19
4.1 Front-end Design	13
4.1.1 Front-end Design For Receiver	13
4.1.2 Front-end Design For Donor	15
4.2 Back-end Design	18
4.3 Interaction Design and UX	18
4.4 Implementation Requirements	19
CHAPTER 05: IMPLEMENTATION AND TESTING	20-26
5.1 Implementation of Front-end Design	20
5.2 Testing Implementations	25
5.3 Test Results and Report	26
CHAPTER 06: CONCLUSION AND FUTURE SCOPE	27
6.1 Discussion and Conclusion	27

6.2 Scope for Further Developments	27
REFERENCES	28
APPENDIX	29
Appendix Project Reflection	29

LIST OF FIGURES

FIGURES	PAGE
Figure 3.1: Business process model	5
Figure 3.2: Use-case for Donor	7
Figure 3.3: Use-case for Receiver	8
Figure 3.4: Data Flow Diagram(Level 0)	9
Figure 3.5: Data Flow Diagram(Level 1)	9
Figure 3.6: ER Diagram	11
Figure 4.1: Initial sign in page of the application	14
Figure4.2:Initial registration page of the application	14
Figure4.3:Initial post home page of the application	15
Figure 4.4: Initial sign in page of the application	16
Figure4.5:Initial registration page of the application	16
Figure4.6:Initial post home page of the application	17
Figure4.7:Initial post page of the application	17
Figure 4.8: Interaction Design	19
Figure 5.1 Implemented Registration Page	20
Figure 5.2 Implemented Registration Page and information	21
Figure 5.3 Implemented case Registration Successfully	21
Figure 5.4 Implemented Sign In Page	22
Figure 5.5 Implemented Sign In Page and information	22

Figure 5.6 Implemented case Sign In Successfully.	23
Figure 5.7 Implemented Home Page	24
Figure 5.8 Implemented Testing	25
Figure 5.9: Implementing results and report	26

CHAPTER 1

INTRODUCTION

1.1 Introduction

Bangladesh is a small country where the economic status has reached a high level. There have tons of available edible food is thrown away as waste food in every stage of our daily life. The waste of food is approximates 5.5% of the amount of edible food.

In a poor country like Bangladesh, food wastage is a disturbing issue. The streets, garbage bins and landfills have ample proof to prove it. Marriages, Canteens, Restaurants, Social and family get-togethers and functions expel out so much food. Food wastage is not only an indication of hunger or pollution, but also of many economic problems.

1.2 Motivation of this project

Now a day a huge amount of food waste in the hostels, restaurants and houses. So we are trying to make an android based app where the donor and receiver communicate with each other.

By using this app as a donor the restaurants or the hostels authority or any people can be informed to the orphanages authority who wants to collect their wastage food. And other side orphanages authority as a receiver can be get informed that someone as a donor want to donate food for them.

1.3 Objectives

Most people do not realize how much food they throw away every day. There are many people who wish to donate things to needy organization. But they don't found any platform for donation .So we want to make an app in android to supply extra food in orphanage or any needy organization. Orphanages or organization can find the

source to collect food. Donors can inform the orphanage authority to collect their extra food.

1.4 Expected Outcome

After all work, we will get the app which will be useable for all user .It will help the needy organization or orphanage authorities to arrange food for their orphan's children. It will also reduce the wastage food.

1.5 Report Layout

In this chapter: 1, we tried to cover basic concepts of our “Food Wastage Reduction Through Donation”. We also discuss our motivation, object and expected outcome of our project.

In chapter: 2, we will discuss system model like context diagram, development life cycle and use case diagram. The system how it's work will be cover in chapter: 2.

In chapter: 3 we will discussed about requirements specification of this proposed system briefly.

In chapter: 4, we design specification for an android apps “Food Wastage Reduction Through Donation” is introduced.

In chapter: 5, we discussed about how we implement this system and it is testing.

The final chapter: 6 is about conclusion and our future scope, limitation, improvement and conclusion of our project.

CHAPTER 02

BACKGROUND

2.1 Introduction

Bangladesh is growing as a digital country. Most of the people are digitalized. To improve our networking system every people use internet and android phone. So at a short time and in short process people want to do many things. So every day they dependent on social side and they want to do everything smartly. So every people want to using internet and depend on that. Most of the people in Bangladesh doing everything in internet. So people want easy process for using any app. So this android app is that type of app what use by every people is very easily.

2.2 Related Works

There are many kinds of apps in android but our app is a social working app. There have a lots of food apps and lots of food donation organization in Bangladesh. So we are trying to gather two types information in a new app for helping normal people and poor people. Because many rich people interested to help needy people but they do not interested to involve any organization. So we make this app for all kinds of people. It is not only food donation but also helpful to poor people who need food. So for the helpless people like any orphanages connect with this app and found there food. So we make this app for two kinds of people who want to help needy people and who collect food for helpless people. This app can easily connect normal people.

Our related works in Google:

1. Food Rescue: (Pittsburgh, Pennsylvania, United States)
2. Amp Your Good: (United States)
3. Boston Area Gleaners: (Boston, Massachusetts, United States)
4. Caritas: (Vatican City, Italy)

5. Food Save London: (London, England) etc.

These are the big organizations who are work for social work .

2.3 Comparative Studies

There are many kinds of social working apps we have seen ever. Some apps work for donating people or some apps work for needy people. We use many of them. But there is no apps which have these types of feature there have donating people and needy people also. We make an app where have two kinds of people. User can easily use this app in their daily working area. This app is more useful than other apps. So it's the first app we have seen in our country.

2.4 Scope of the problem

The concept of this app is very satisfied. We have tried to make a new concept app. When we want to make this app we faced some problem. It gives us some errors. Firstly we make a single app. We need to add some feature which make this app unique. At this time when we make some new feature but there are also face some problem. At a time these are not working properly. We are always tried to run this app without errors.

2.5 Challenges

We have faced many problems to complete this project. We try our best to overcome from those problems. For this project we have to learn how to make features and use that in our project. This app is not available in Google play store. So firstly we think what we can add this project. Then we saw many kinds of social working apps in play store and then we realize that many kinds of social working app work for one side people. It's for donating people otherwise needy people. Then we think we add two kinds of people in one app. That's why we have to take challenges for this project to make a new level of app for social purpose of users.

CHAPTER 03

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

This project contains the model for “Food Wastage Reduction Through Donation” including all the models used to specify and realize this app. This model helps the reader to understand easily the whole project work. This app will be available to all people and this app work something different from other social apps. It is provided as a UML example covering the analysis of the business context and processes and the design and deployment of a possible implementation. The goal is to show the power UML brings to analyzing and designing a robust system that corresponds to the initial requirement. The following figure 3.1 shows the business process model.

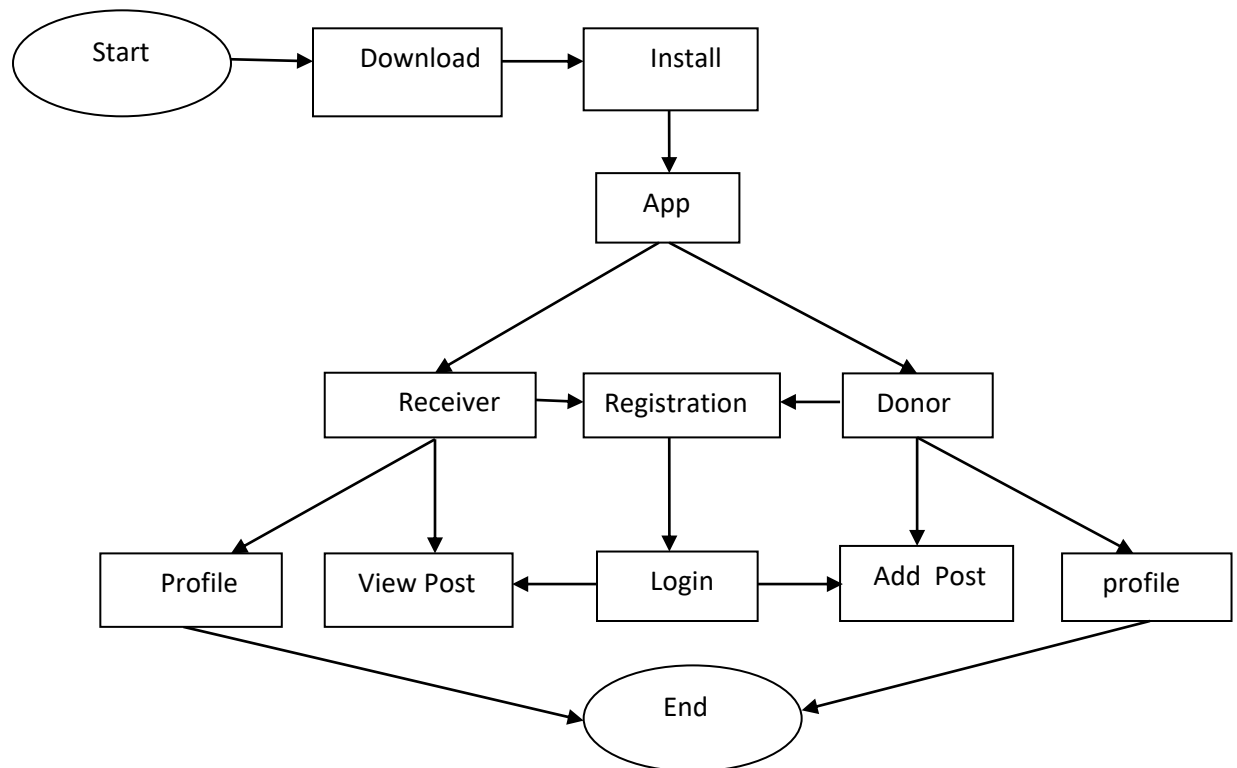


Figure 3.1: Business Process Model

3.2 Requirement Collection and Analysis

This project has many kinds of requirements. It is important to identify the best requirements needed for this project and design the modules in such a way that all the demands can be fulfilled. We work step by step. This step requires a thorough investigation of the basic needs for the satisfaction and also the problems encountered. We gather lots of information from different type of social site. We work on our project based on this information. Only the creation would be good enough to provide a better performance.

3.2.1 Resources used to develop and improve the system

It's important to identify the requirements needed for the project and to design the modules in such a way that all the demands are met. Some designing steps are basic need. Some steps require a thorough investigation of the basic needs. It will expect for the satisfaction of the user and the problems will be encountered. Only then the creation would be good enough to provide a better performance

.

3.2.2 Resources used to develop and improve the system

Resources are source from which benefit it's produced. For develop any kind of system or improve any kind of system it should be work part by part. One part improves than should take improve or develop another part. After doing all this, collected the resources are the most and crucial part. For create or develop this project we must needed Android Studio, a windows computer and a smart phone. We are creating social helpful app which you can use your mobile device.

3.3 Use case modeling and description

We know that use case is that case where using all working process in step by step. In software and systems engineering, a use case is a all list of actions or event steps, typically defining the interactions between a system, to achieve a goal. The user has to be a human. In this app there are two types of user use this app. One is donor people others are needy people. So in this app, we have tried to connect two kinds of people.

justify what kinds of user you are. If you are donor user then you have to registration then you can logged in this app. On the other hand needy people user or receiver people user also registration then receiver people user also logged in this app. A donor user can be post after login successful. On the similarly if you are a receiver then you also login and see that post which are posted by the donor. If your need is matched then you can contact with the donor. Donor inform their location and how much foods are extra and receiver see that and contact the donor user. The use case model of this project is shown in the following figure 3.2 and 3.3.

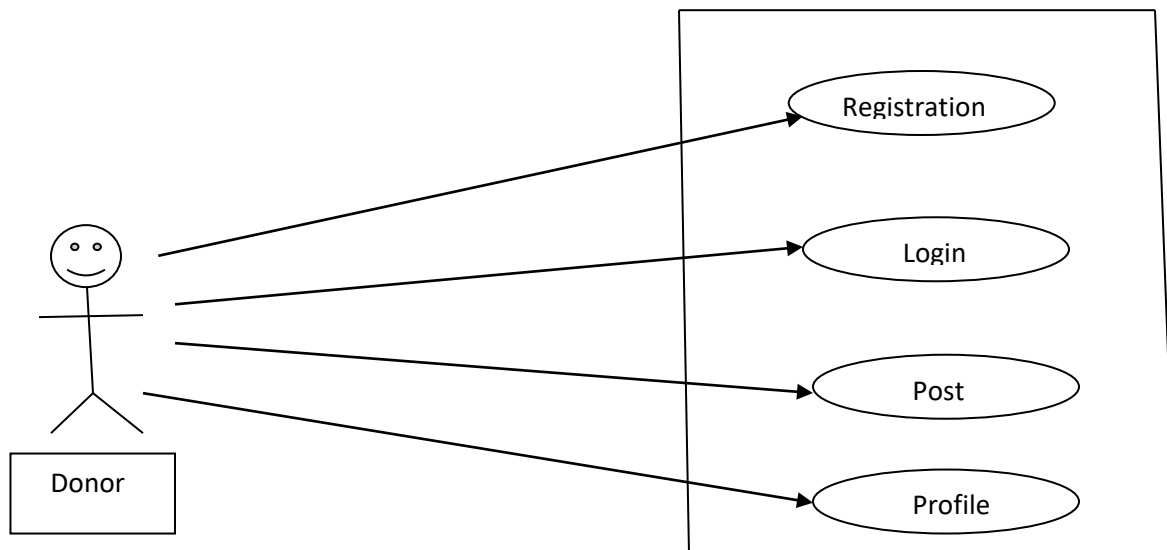


Figure 3.2: Use case for Donor

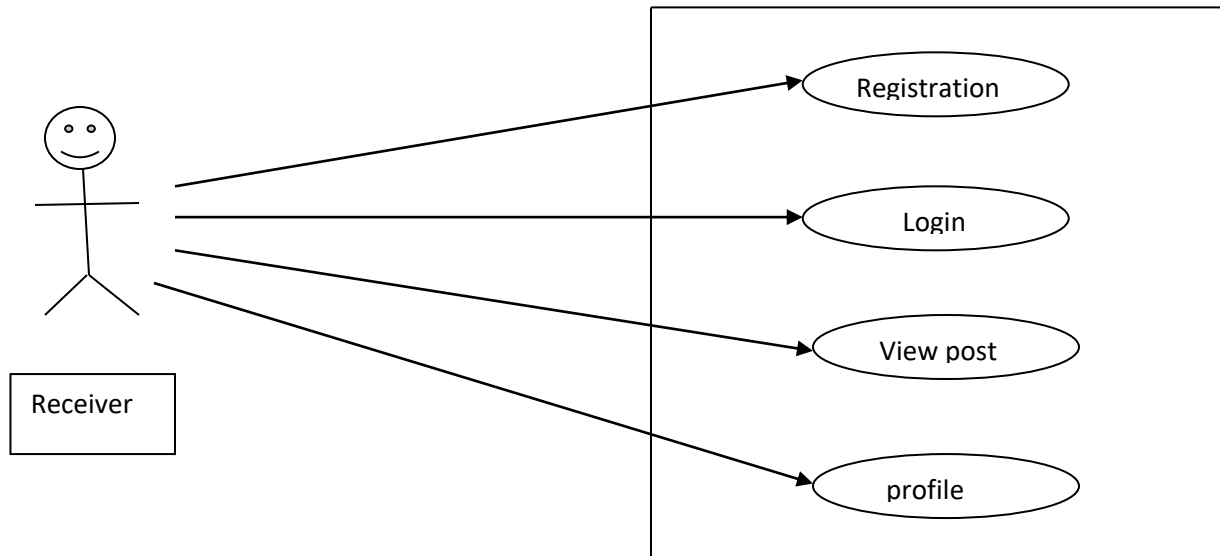


Figure 3.3: Use case for Receiver

3.4 Data Flow Diagram

In this diagram user uses this app which has some user friendly features. In this app all information are stored in database. As a donor or receiver when he or she registration this app he or she gives some information like name, email, phone no, password, All are this information store in database. In similarly when donor or receiver login, post something all are the information store in database.

The following figure 4.13 shows the data flow diagram to insert registration and post information to the database and to get the resulting report.

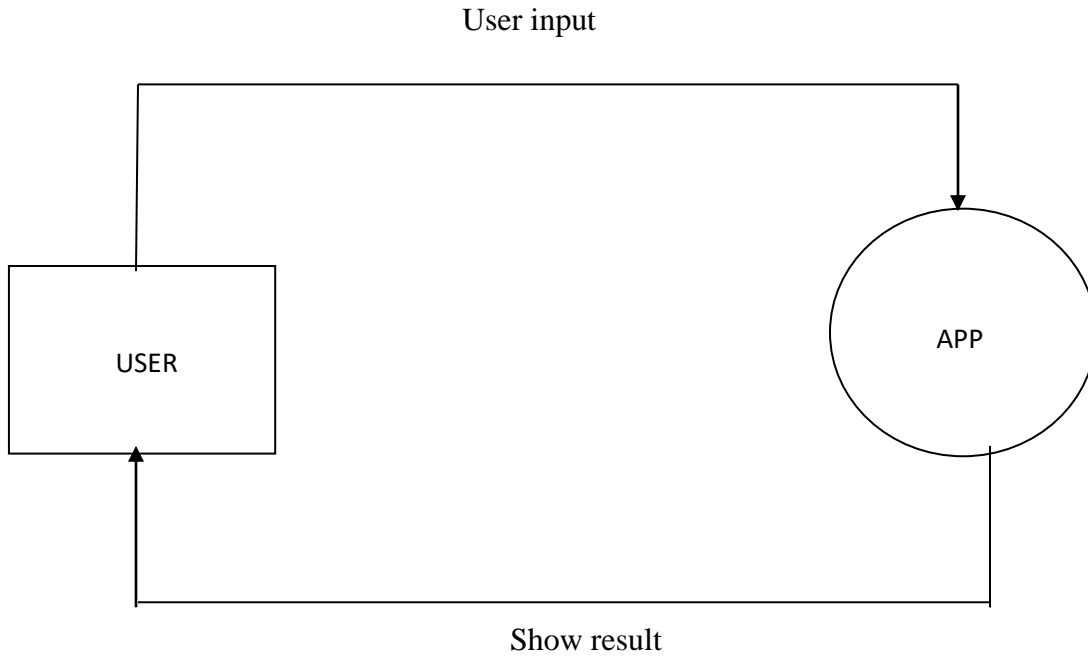


Figure 3.4: Data Flow Diagram(level 0)

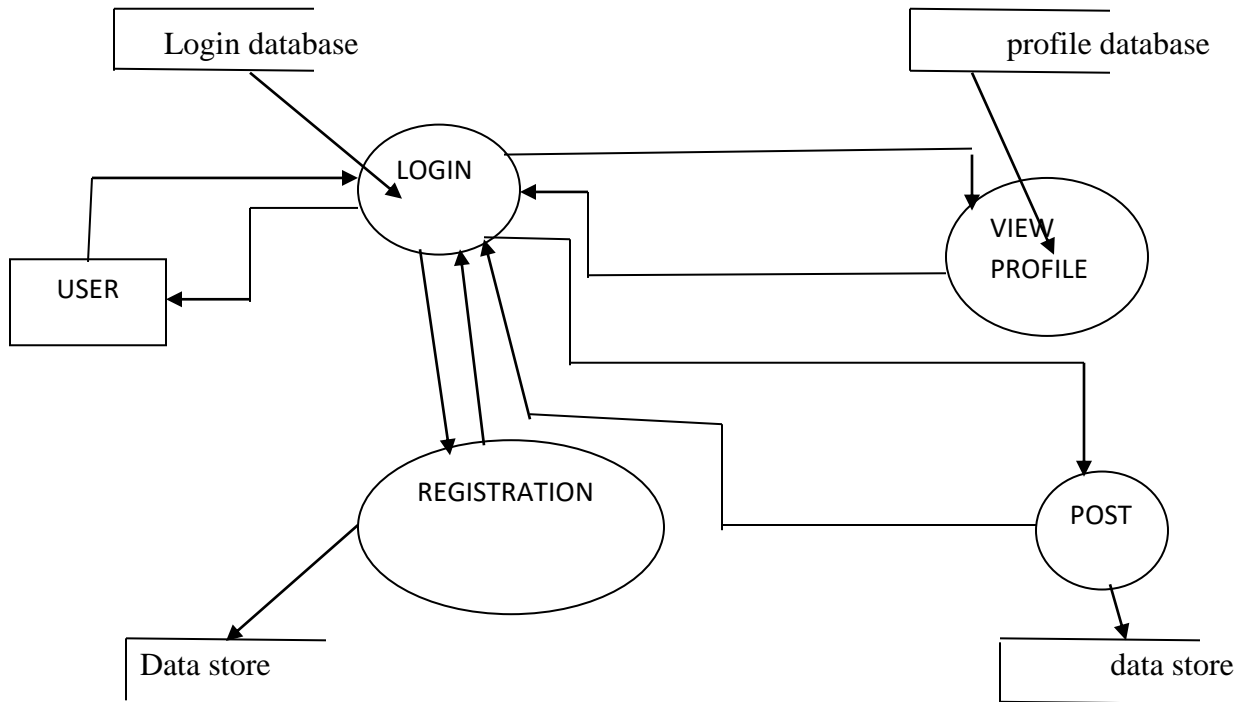


Figure 3.5: Data Flow Diagram(level 1)

3.5 ER Diagram

ER diagram is a model between user and software. It is a data model. So ER Diagram is a data model of a specific problem domain expressed independently of a particular database management product or storage technology. Our system there is two types of user. One is donor user and other is receiver user. In our country many kinds of program held every day and in this program lots of extra food are wasted any reason. Many kinds of people want to donate this food give needy people but they do not know how to donate that food. Many organization works for that system but that is long process. So that's type of people use that app for donor user. On the other hand many types of organization want for food for needy people as like as orphans. So they also a user for receive that food. So this app is very helpful and friendly. They are using app and its features is very easily. Donor can post there necessary information and contact. In similarly receiver can view that post and that location and contact them. The following figure 3.4 describes the ER Diagram of this project.

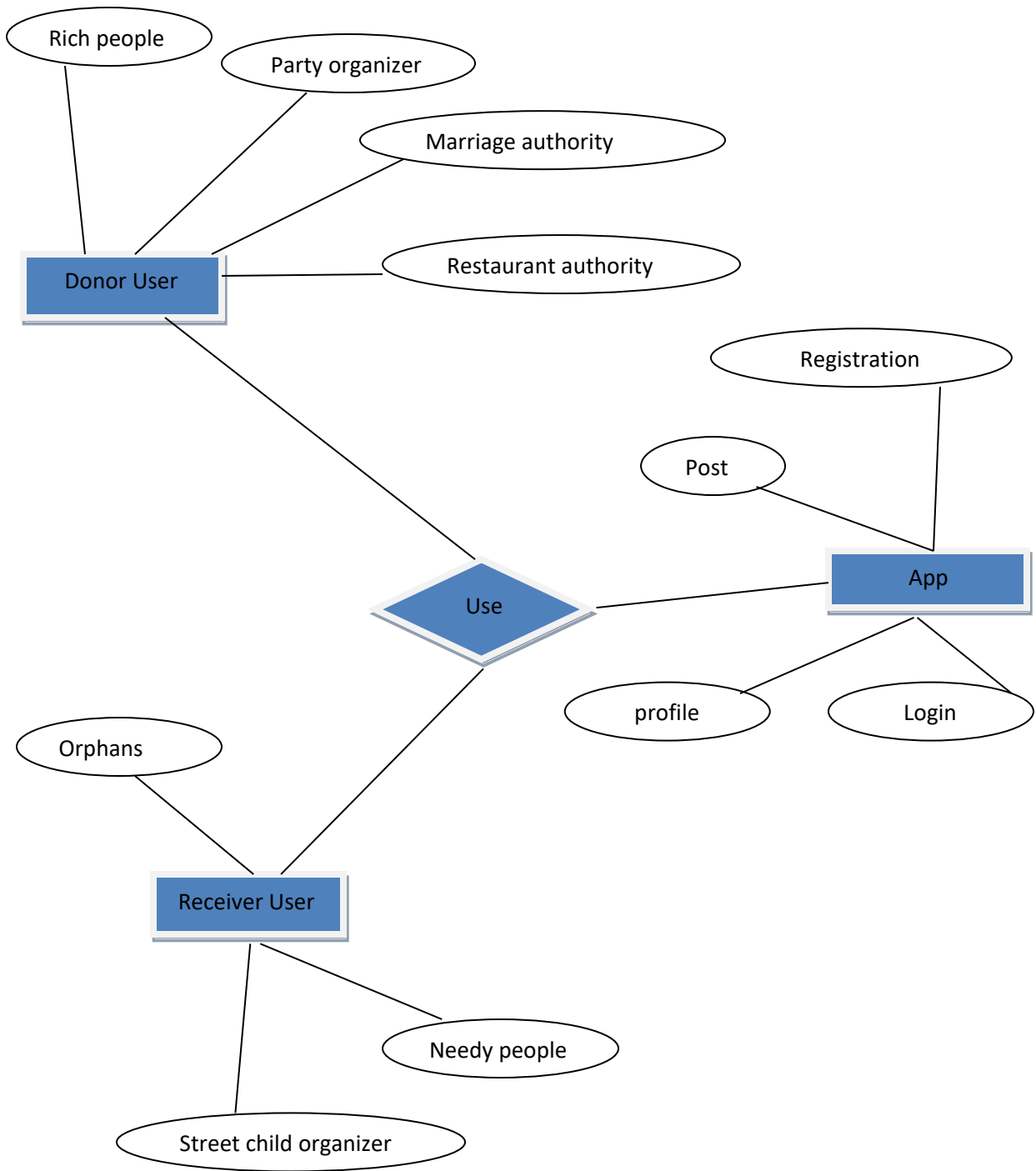


Figure 3.6: ER Diagram

3.6 Design Requirements

Design requirement for user:

- Registration page.
- Login page.
- Receiver page,
- Donor Page,
- Posting system.
- View post.
- Logout

CHAPTER 04

DESIGN SPECIFICATION

This chapter we will discuss all about design those are front-end design, back-end design and interaction design and UX and implementation requirements. Create this entire thing we use two languages. They are XML and Java for this app designing.

4.1 Front-end Design

Front-end is the part of any application which is visual to the user. User can interact with the back-end and also connected with database through the front-end. We will part by part discuss about the initial front-end design.

4.1.1 Front-end Design for Receiver

We will discuss about the front-end design for receiver. Here we saw in front-end design when receiver sign in this app, registration in this app, post view, post anything, profile and logout.

Here, Figure 4.1 shows the initial sign in page of the application.

Figure 4.2 shows the initial registration page of the application.

Figure 4.3 shows the initial Home page of the application.

In figure 4.1, there have design for inputting email and password. After registration successful a user can be logged in this login page.

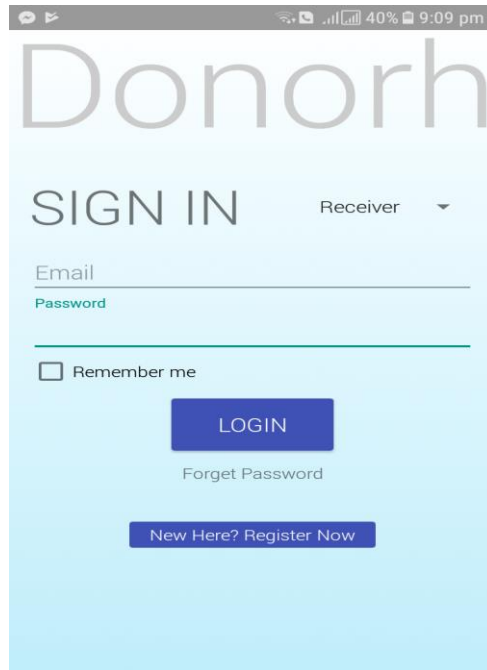


Figure 4.1: Initial Sign In page of the application.

In figure 4.2, there have design for registration page, where user must be input their name, email, phone no and password.

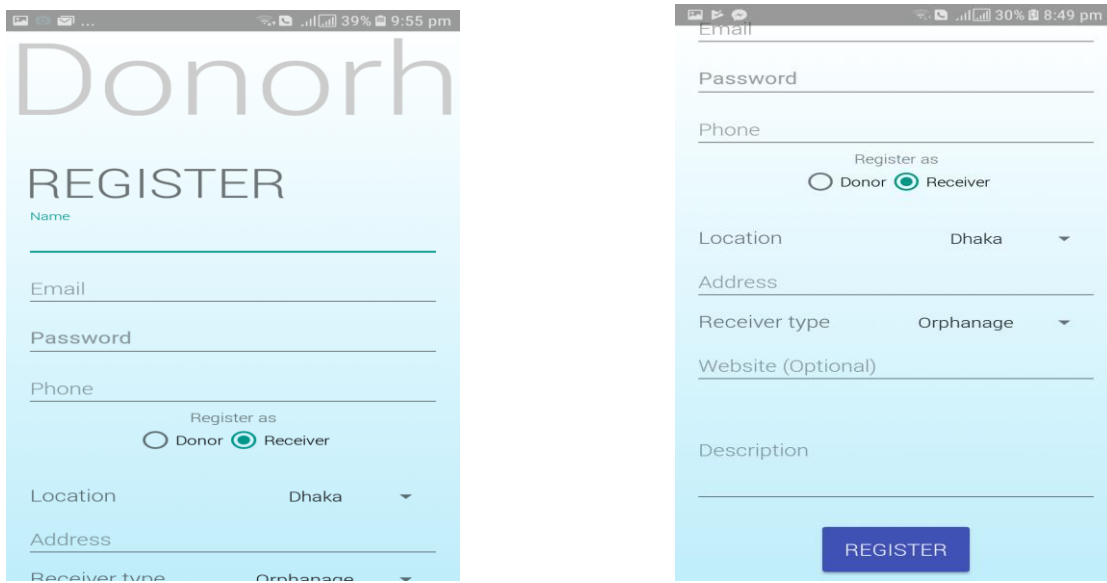


Figure 4.2: Initial Registration page of the application.

In figure 4.3, there have a feature for receiver page, where receiver can view post, can be view their own profile and can be logout.

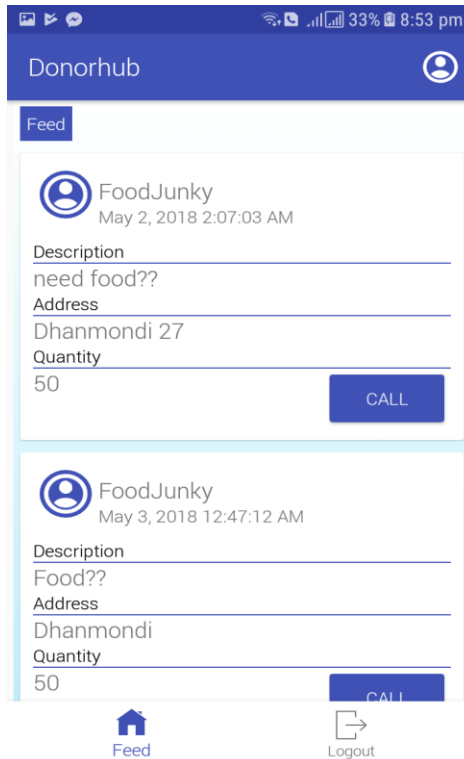


Figure 4.3: Initial Receiver Home Page of the application.

4.1.2 Front-end Design for Donor

We will discuss about the front-end design for donor. Here we saw in front-end design when donor sign in this app, registration in this app, post view, post anything, profile and logout.

Here, Figure 4.4 shows the Initial Sign In page of the application.

Figure 4.5 shows the initial registration page of the application.

Figure 4.6 shows the initial post viewing page of the application.

Figure 4.7 shows the initial post page of the application.

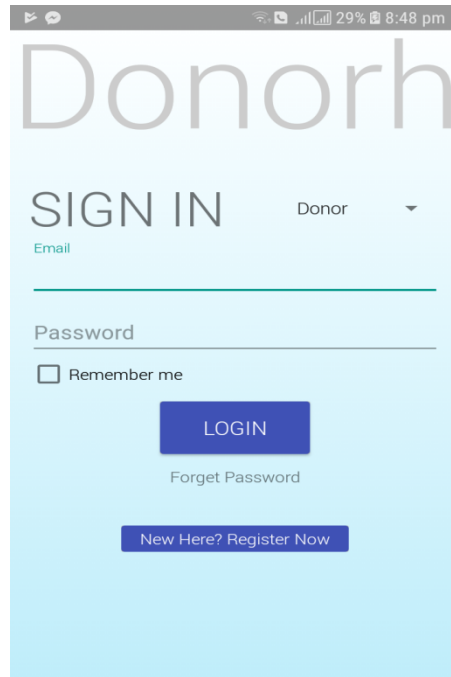


Figure 4.4: Initial Sign page of the application.

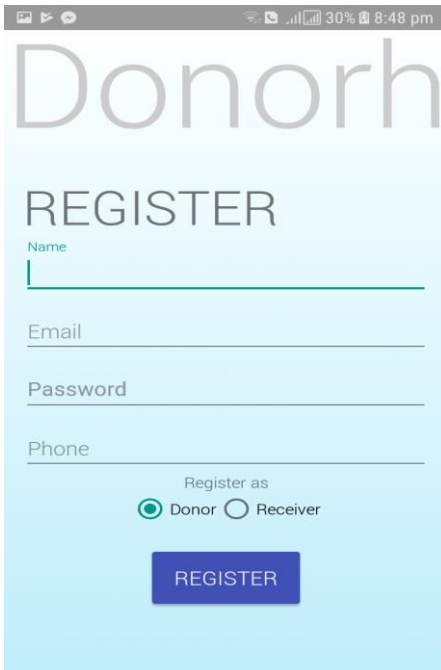


Figure 4.5: Initial Registration page of the application.

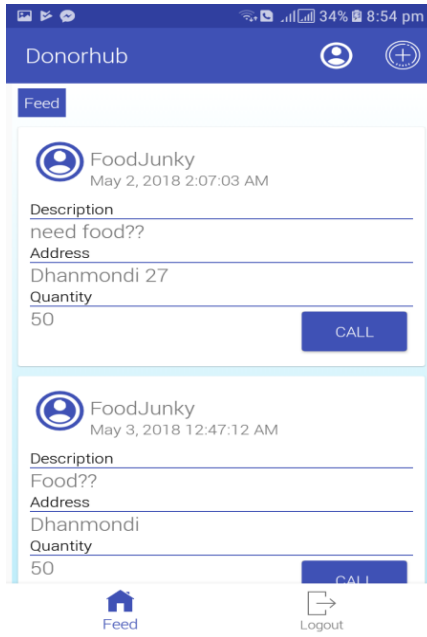


Figure 4.6: Initial Donor Home page of the application.

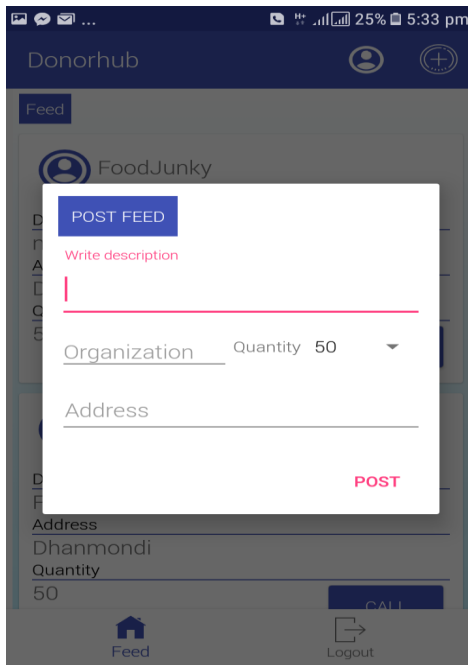


Figure 4.7: Initial Post page of the application.

4.2 Back-end Design

Back-end is not visible for the user in the application. The back-end give service for the user. It works in the background of application to process or give service to the user. It's the behind-the-scenes functionality – the brain of a site. By using Android Studio, we can build easily back-end design.

4.3 Interaction Design and User Experience (UX)

Interaction Design is user oriented field of our study that focuses meaningful communication cyclical and collaborative processes between people and technology. It is a system where communicate people and technology.

User Experience (UX) is that there is a system overall use and how much it user friendly and how much it esay to user. It is the user emotion or attitudes using a system or application. This will be great full for both user and the authority of the project. How user will be benefited to use this, that's that the main view of this project.

The following figure 3.14 is showing the interaction design.

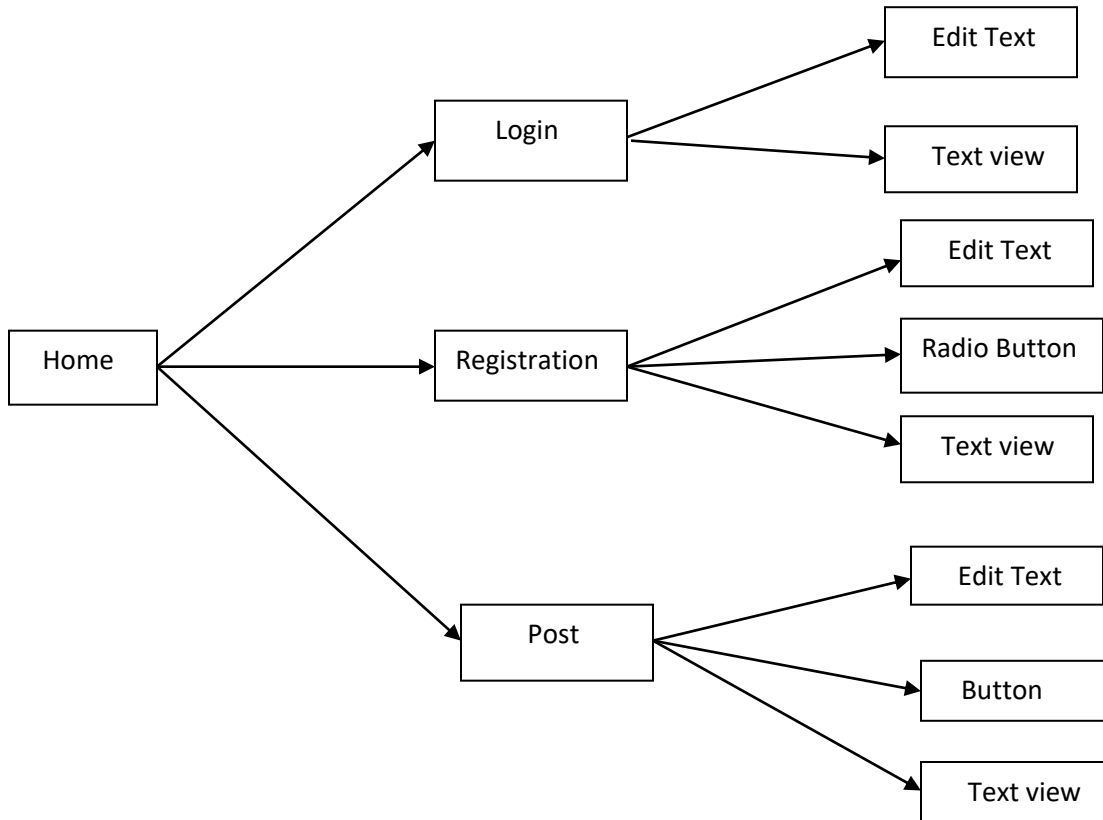


Figure 4.8: Interaction Design.

4.4 Implementation Requirements

First we want to develop the front-end and back-end of this application. We need some tools, programming language, markup language, styling, server etc. This project is an android app. We want that this project can be used also web base not only app and windows based.

We need some tools like XAMPP to turn our machine into local server. For front-end development, we need HTML and CSS. For back-end, we will use My SQL for implementation database and PHP to process data and interact with the database .

CHAPTER 05

IMPLEMENTATION AND TESTING

5.1 Implementation of Front-end Design of Android

A collection of information organized in such a way that a computer program can quickly select desired pieces of data. This is SQL query needed to perform action.

Figure 5.1 shows the implemented Registration page. Here, is the registration page of the app. We can see two options one is donor and other is receiver. If you donor then you choose donor option. On the other hand, if you are receiver then you choose receiver option. If you are already register this app. Then you can login. Here we also see login option. All option is user friendly. Persons who are using this app, they can easily understand about that option .

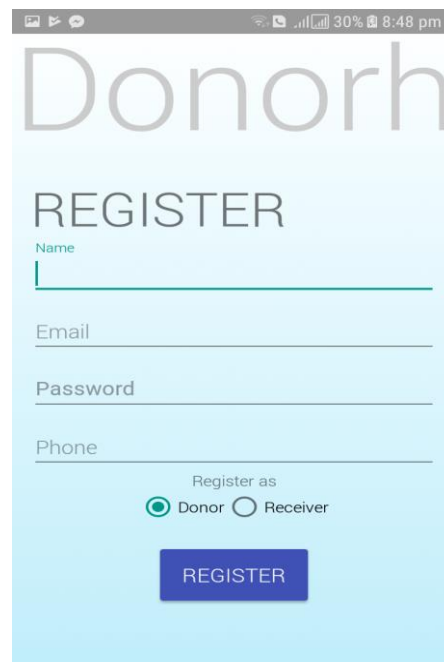


Figure 5.1: Implemented Registration Page.

The following Figure 5.2 shows the implementation design of a registration page in which we have added First Name, Last Name, Email, Phone, and Password. First you select the option donor or receiver.

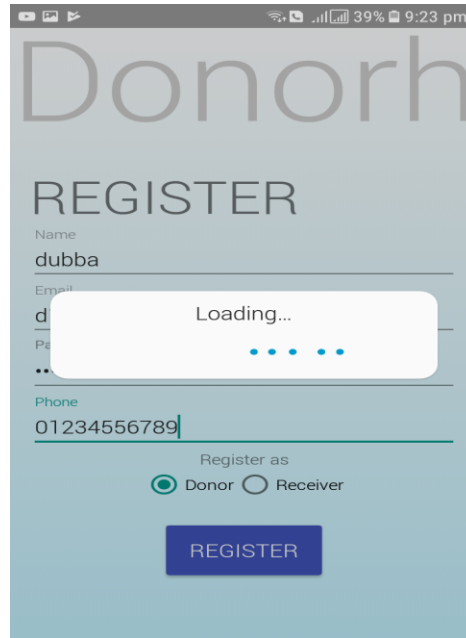


Figure 5.2: Implemented Registration Page and information.

Figure 5.3 shows the successfully registration complete. Then we can login this app.

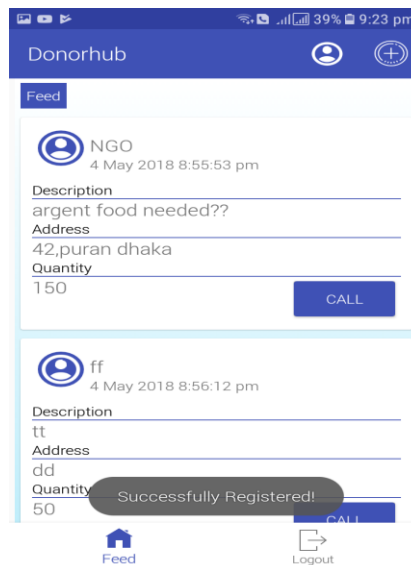


Figure 5.3: Implemented case Registration Successfully.

Figure 5.4 shows the implemented Login page. Here, the Login page of the app. We can see here email and password edit text box. Here user must be input the registered email and password for login this app.

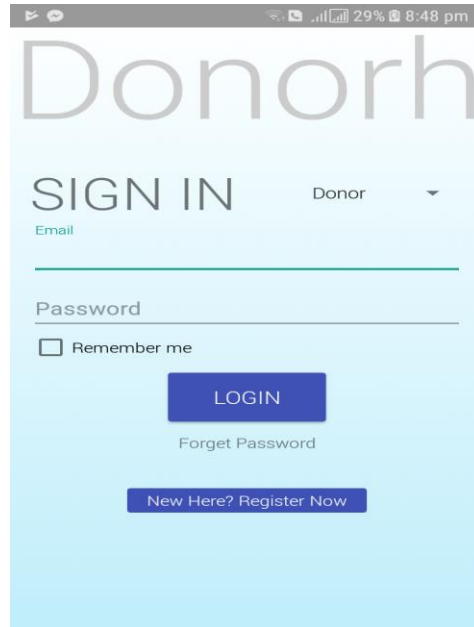


Figure 5.4: Implemented Sign In Page.

The following Figure 5.5 shows the implementation design of a login page in which we have inputted registered Email and Password.

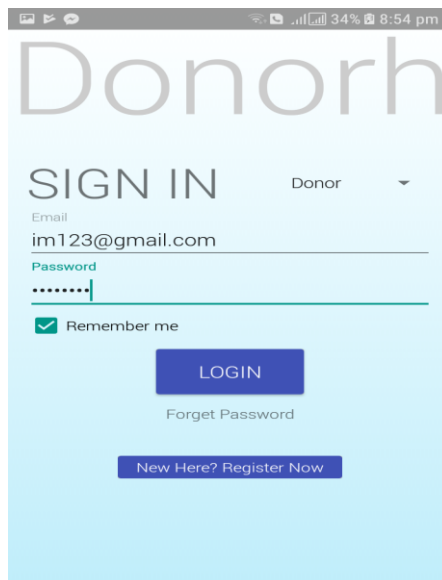


Figure 5.5: Implemented Sign In Page and information.

Figure 5.6 shows the successfully login complete. Then user go to the activity as user registered for login .

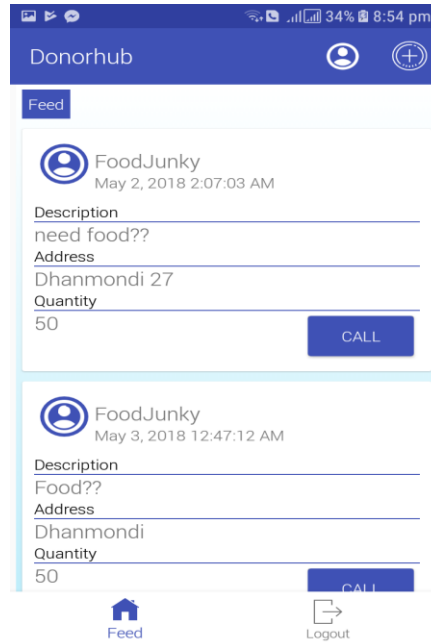


Figure 5.6: Implemented case Sign In Successfully.

Figure 5.7 shows the implemented post page. Here, the Donor page of the app. We can see here much information. All option is user friendly. Persons who are using this app, they can easily understand about those options.

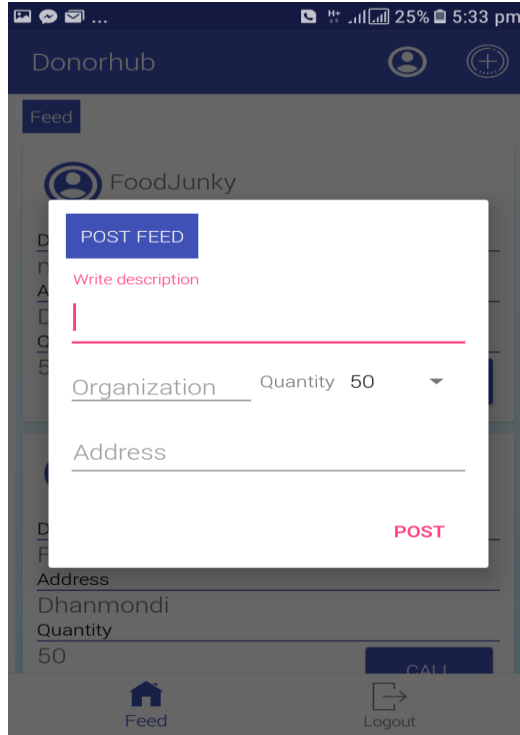


Figure 5.7: Implemented Post Page.

5.2 Testing Implementation

Figure 5.8 shows how we post any item. We can easily edit the item. And we also make a system that this post automatically deletes after 2 day

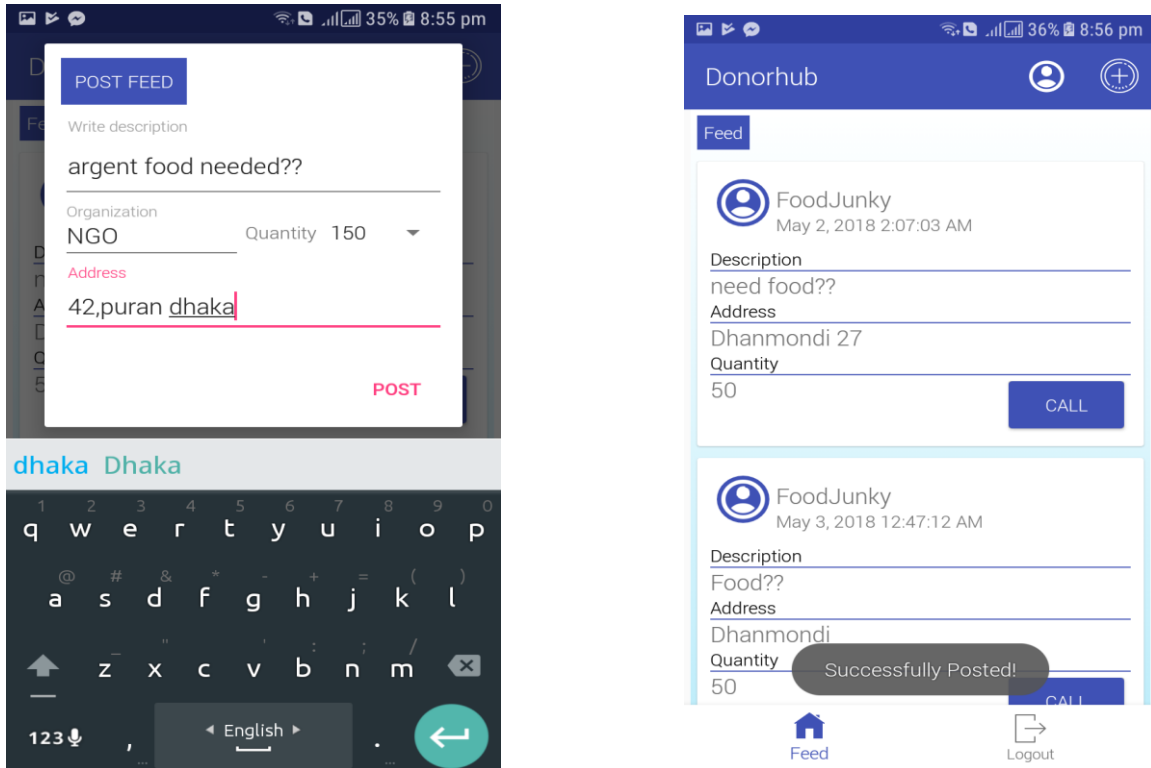


Figure 5.8: Post Testing Implementation

5.3 Test Result and Report

Figure 5.9 shows the result of registration in database of our app. Here we post for donor and receiver. Then the donor or receiver easily registration, login and post anything.

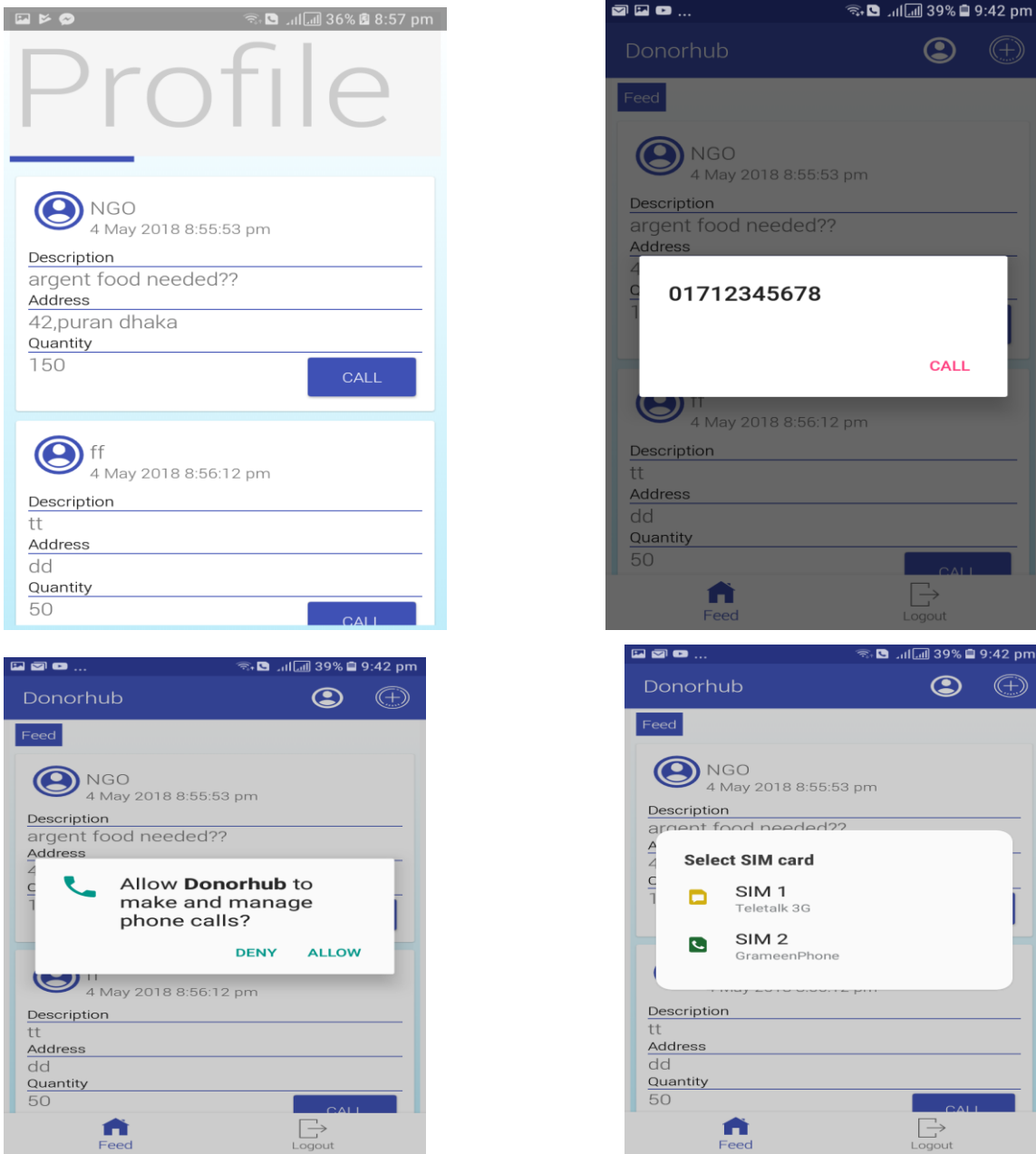


Figure 5.9: Implemented Results and Report

CHAPTER 06

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

We have tried to our level best to finish this android app. We started it by creating the registration page and slowly more features have been added in this app. User can view there profile, can be post and can view other's post. Donor user can post and receiver user can only view that post. This android app can be use from anywhere in our country. We have added direct calling feature for user which is very useful.

6.2 Scope for Further Developments

An android app can be developed more and more, there have no limitation in development. For user friendly and easy, a developer always tries to make an app developed every day. Our app is very easy to use. If we add some new feature in this app like comment section in post documentation, automatic sms to the registered receiver for post notification, the app will be more effective and more useful to user. We shall try to add these features in this app in future.

REFERENCES

- [1] Bagherzadeh, Morvarid, Mitsuhiro Inamura, and Hyunchul Jeong. "Food waste along the food chain." (2014).
- [2] Hello, Android: Introducing Google's Mobile Development Platform Book by Ed Brunette.
- [3] Narendra Gupta et al., "MBB:A Life Saving Application", *International Journal For Research in Emerging Science And Technology*, vol. 2, no. 1, pp. 326330, March 2015
- [4] Vivek S. Agrawal, Ambika Nag, "Sustainable Food Waste Prevention Strategies to Achieve Food Security in India", *International Journal of Agriculture and Food Science Technology* Volume 4: pp. 189-194, (2013).
- [5] Swapnil R. Rajput, MohdSohelDeshmukh, Karbhari V. Kale, "Cross-platform Smartphone Emergency Reporting Application in Urban Areas using GIS Location based and Google Web Services", *International Journal of Computer Applications*, Volume 130 – No.12, November 2015.
- [6] Vicentini, F. Giusti, A., Rovetta, A., Fan, X., He, Q., Zhu, M., & Liu, B. (2008). Sensorized waste collection container for content estimation and collection optimization. *Waste Management*.29, 1467-1472.
- [7] Hitesh V. Raut, Swapnil R. Rajput, Dhananjay B. Nalawade, Karbhari V. Kale, "SMARTPHONE BASED WASTE FOOD SUPPLY CHAIN FOR AURANGABAD CITY USING GIS LOCATION BASED AND GOOGLE WEB SERVICES", *International Journal of Research in Engineering and Technology*, Volume: 05 Issue: 04 | Apr-2016.
- [8] No food waste "<http://www.nofoodwaste.in/>" [Accessed: June 2017].

APPENDIX

Appendix A: Project Reflection

From Fall-2016 semester we had stated our journey to make a system which is an android app for An android app for food wastage reduction through donation with the all hard work and spending a lot of time finally we were able to reach our goal. This system is time saving and error free compared to the traditional system. This also useful all user. This will attract user using its attractive and user friendly UI. So we believe that our android app for food wastage reduction through donation will be a positive and effective thing for user. And will be continuously upgrading our system.

Appendix B: Plagiarism

