A PROJECT REPORT

ON

"ROTI BANK SYSTEM"

Submitted to

UNIVERSITY OF MUMBAI

In Partial Fulfilment of the Requirement for the Award of

BACHELOR'S DEGREE IN
COMPUTER ENGINEERING

BY

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PALEKAR ARIBA	**16CO07**
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UNDER THE GUIDANCE OF
PROF.TABREZ KHAN

DEPARTMENT OF COMPUTER ENGINEERING
Anjuman-I-Islam's Kalsekar Technical Campus
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Plot No. 2 3, Sector - 16, Near Thana Naka,
Khandagaon, New Panvel - 410206

2019-2020

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CERTIFICATE

This is certify that the project entitled

"ROTI BANK SYSTEM"

submitted by

KHAN HEENA	**16CO04**
PALEKAR ARIBA	**16CO07**
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is a record of bonafide work carried out by them, in the partial fulfilment of the requirement for the award of Degree of Bachelor of Engineering (Computer Engineering) at ***Anjuman-I-Islam's Kalsekar Technical Campus, Navi Mumbai*** under the University of MUMBAI. This work is done during year 2019-2020, under our guidance.

Date: / /

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Director

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We would like to express deepest appreciation towards **DR. ABDUL RAZAK HONNUTAGI**, Director, AIKTC, Navi Mumbai, **Prof. TABREZ KHAN**, Head of Department of Computer Engineering and **Prof. KALPANA BODKE**, Project Coordinator whose invaluable guidance supported us in completing this project.

At last we must express our sincere heartfelt gratitude to all the staff members of Computer Engineering Department who helped me directly or indirectly during this course of work.

KHAN HEENA
PALEKAR ARIBA
SHAIKH MUSKAN

Project I Approval for Bachelor of Engineering

This project entitled ***ËROTI BANK SYSTEM¨*** by ***SHAIKH MUSKAN(16CO13),PALEKAR ARIBA(16CO07),KHAN HEENA(16CO04)*** is approved for the degree of ***Bachelor of Engineering in Department of Computer Engineering.***

Examiners

1. .....
2. .....

Supervisors

1. .....
2. .....

Chairman

.....

Declaration

I declare that this written submission represents my ideas in my own words and where others ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

KHAN HEENA
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ABSTRACT

Everyday we hear about many countries which is developed, developing and under-developed. But now in 20th century it has being assumed that all the country in the world is developed enough.All such thing is always appear in newspaper, TVs or any other social media services .But what is hidden or not shown to people is the growing poverty and wastage of food in the nation. Around 1/3rd of world's food is thrown away or get spoil by the people, whereas one the other hand we see growing poverty in the nation.By 2050 the population is expected to increased by 2billion,with 1.2 billions of people is living without food at present.On the urge of growing nation on positive side we cannot neglect the fact of increasing poverty in country.So,for the Needy people in country, we come up with idea for solution of making an android-application along with website for their basic requirement.Acting on the food wastage, can be considered to be having a significant impact on achieving the sustainability goals and can also be a vital auxiliary measure to counteract the imbalance in the global food availability and distribution.Due to that, we developed an android application **"Roti Bank System"** using android studio because it will reach a wider range of audience since most people nowadays use android phones. Our Roti Bank System tries to summarize from the available data, the global, the national and the community level food wastage scenarios. With a focus on the food wastage due to 'over consumption' as one of the high potential source for reduction and the behavioral aspects and habits as obstacles to the goal of sustainability.The purpose of this development is to limit the wastage of food in the India. Many restaurants,weddings, parties etc. tend to throw the leftover food at the end of the day even though the food is perfectly fine to be eaten, which means that huge amounts of food are wasted. While all that food is being wasted, some families can barely afford proper meals with their limited money. They don't get enough nutrition due to the lack of having meals in a day. Therefore, we decided to create our application to link the donor with the NGO, which will then proceed by serving the meals to Needy people. Our application will try to reduce food wastage with the help of restaurants,wedding and many such source who can contribute in providing their leftover food to the Needy people, so that the Needy can get at least one time of meal.Our system will allow the user to register, login and view the nearby donor, receiver or any Needy person who are in need and can send them in-app notification for confirmation.Our application is using the firebase for real-time database to store the details of the user and food share between them.

Keywords: Food Waste , Web-app, Firebase, Authentication, Real-time Database.

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Chapter 1

Introduction

Food wastage, can be considered to be having a significant impact on achieving the sustainability goals and can also be a vital auxiliary measure to counteract the imbalance in the global food availability and distribution.Acting on the food wastage, can be considered to be having a significant impact on achieving the sustainability goals and can also be a vital auxiliary measure to counteract the imbalance in the global food availability and distribution.Due to that, we developed an android application **"Roti Bank System"** using android studio because it will reach a wider range of audience since most people nowadays use android phones. Our Roti Bank System will try to summarize from the available data food wastage scenarios.With a focus on the food wastage due to 'over consumption'as one of the high potential source for reduction and the behavioral aspects and habits as obstacles to the goal of sustainability,to identify and quantify the avoidable food waste at consumer level and proposes that awareness of sustainable living patterns as a super-ordinate goal.

1.1 Purpose

Food which is not in use or the food which the people throw , is directly or indirectly affect the land, water energy labor and the other natural resources that are used in food production.Food wastage is both economic and social issue.

Some people waste food without even thinking that there are some people who are needy and don't get proper nutrition and meals they hardly afford one meal in a day due to their low income. So our application "Roti Bank System" will link this unfortunate people with the restaurant, hotels, parties or any of the donor who donate the leftover food to the needy instead of getting wasted. This application allow user to log in, log out and donors can upload the description of the meal and can also set the pickup location so that any organization who is in need of food can go and collect food from that location and serve it to the needy.

1.2 Project Scope

- Only authenticate donor can donate.
- Anyone can become the volunteer.
- Location is necessary.
- Genuine NGO can participate.

1.3 Project Goals and Objectives

1.3.1 Goals

- To improve needy people livelihood.
- To use the correct strategy for eliminating food wastage.
- To satiates hunger of less fortunate.
- To make needy people aware of NGO who can help them in many ways.
- To keep humanity alive.

1.3.2 Objectives

- To make sure that the poors get atleast one time meal in a day.
- To reduce the number of foods thrown in garbage.
- To make everyone aware that needy people,in our country do exist
- To make India better place to live for less fortunate.
- To keep humanity alive.

1.4 Organization of Report

The report is organized as follows : The introduction is given in Chapter 1.It describes the fundamental terms used in this project.It describes the Goal,Objectives and scope of this project. The Chapter 2 describes the review of the relevant various techniques in the literature systems. It describes the pros and cons of each technique with how to overcome those cons using new technology.

The project planning includes members and capabilities of this project ,roles and responsibilities of each member,Budget of Project and Project timeline is describe in Chapter 3. The Chapter 4 describes Functional and Nonfunctional Requirements of project.Along with this it also explain features of system and constraints of system.

The Chapter 5 includes Design Information with Class Diagram, Sequence Diagram , Component Diagram and System Architecture. Implementation of each module is explained in Chapter 6. Chapter 7 shows final Test Cases and Test Results. Chapter 8 includes Screenshot of outputs and Conclusion and Future Scope of Project is described in Chapter 9.

Chapter 2

Literature Survey

SR.NO	Parameter	Paper-I	Paper-II	Paper-III	Proposed System
1.	Registration	Present	Present	Present	Present
2.	Locator	Not Present	Not Present	Not Present	Present
3.	Updator	Not Present	Not Present	Not Present	Present
4.	Is Food free of cost?	Not Present	Not Present	Not Present	Present
5.	Match Matrix	Not Present	Not Present	Not Present	Present

Table 2.1: Comparison of Literature Paper existing System with our System

2.1 Paper-I : Beyond food Sharing

The economic crisis of the last decade has caused an increase of the number of people in developed countries living in a condition of "food poverty". Despite a growing number of charity organizations such as food banks, and public interventions to limit the problem, it is still difficult to guarantee food security to all . At the same time, an enormous and hardly quantifiable amount of food is wasted every day.Substantial food losses and waste occur along the whole production chain. However, our understanding of the real magnitude of the problem is still very limited . Various studies such as estimated a higher amount of food waste per capita in developed countries (as high as 280-300 kg per person per year in Europe and North America according to). Food waste is defined by as "the surplus food that is not recovered to feed people, to feed animals, to produce new products, new materials or energy".

2.1.1 Advantages of Paper

a. This review has helped us to gain knowledge that what exactly needy want.

b. It also gave some solutions and some more methods that will eliminate the practice of begging.

2.1.2 Disadvantages of Paper

a. Not much information included to reduce food wastage and providing food to a less fortunate free of cost.

2.1.3 How to Overcome

Instead of focusing on doing social service by going place to place collecting food and donating it to people, we can make an hands-on application which will gives you location of donor and needy people, and the respective nearby volunteer will pick-up the food and serve it to needy people.

2.2 Paper Title-2: Food Waste –A global challenge sustainabilty

The average food supply for one person in the world is around 580 kilograms. Of this around 380 kilograms is consumed, 140 kilograms is lost in production and 50 kilograms is wasted by consumers . In other words, one third of the food produced annually meant for human consumption gets lost or wasted . At global level this wastage translates to 1.3 billion tonnes of food wasted per year. According to the World's Food Aid Foundation, available world-hunger-statistics, about one ninth of the population accounting to 800 million people in the world. In the production of food many resources are required. A country's food requirement in equivalent resources unit can be roughly converted to 10 percent of the total energy budget, 50 percent of land used, and 80 percent of freshwater consumption. In addition to these fertilizers and pesticides are also used. And on the global front the same can be converted to 70 percent of planet's fresh water withdrawals, 80percent of the world's tropical and subtropical deforestation and 30 to 35percent of human caused greenhouse gas emissions.It is estimated that with the present level of global food wastage results in about 30percent wastage of available agricultural land used. The wasted food amounts also contribute to the releases of greenhouse gas equivalent to 3.3 billion tonnes of carbon dioxide every year. If food waste were a country it would be the third largest producer of greenhouse gases in the world, after China and U.S.

2.2.1 Advantages of Paper

a. We came to know about the quantity of food wastage everyday

b. Statistical data helped us to guess need of our system.

c. By studying pattern of needy we understood what extra modules we should add in our system.

2.2.2 Disadvantages of Paper

a. Only doing a survey will not reduce the wastage of food.

b. The review is limited to a particular district only.

2.2.3 How to Overcome

- Instead of doing survey of food wastage only, we can also do survey of poor people in different countries.
- Instead of doing campaigns, we can contact a NGO and can share our thought of creating such application which caters on proper use of food, and reduced the amount of food wastage.2

2.3 Paper Title-3:Food waste reduction mobile application

The purpose of this development is to limit the wastage of food in the United Arab Emirates. Many restaurants tend to throw the leftover food at the end of the day even though the food is perfectly fine to be eaten, which means that huge amounts of food are wasted. While all that food is being wasted, some families can barely afford proper meals with their limited money. They don't get enough nutrition due to the lack of having three meals in a day. Therefore, they decided to create our application to link the restaurant with the unfortunate people, so instead of throwing the food, the unfortunate will be able to pick it up from the restaurant at the end of the day. The application allows the restaurants to log in, and upload an image of the meals they have as leftovers along with a description of that meal, and the location where to pick it up. The users then, can log in and choose the meal suitable to their choice and can pick it up once they send a request to the application.

2.3.1 Advantages of Paper

a. We understood requirements of System through their survey report.

2.3.2 Disadvantages of Paper

a. Need for efficient communication modes with Donor and Receiver.

b. Required resources and proper assistance must be provided by that app.

2.3.3 How to Overcome

- Only authorization and registration module is not sufficient for building an application there should be Locator module (for taking location of user), there should be updator module(for updating status of NGO and Needy people)etc.
- There must be login and registration of 4 users (i.e. NGO , Needy people, Donor Volunteer).
- It must contain proper information of each and every module instead of only authentication

.

2.4 Technical Review

Our application is fabricated with following technologies: Web-app, Firebase, Authentica- tion, Real-time Database, Google API, Android Studio

2.4.1 Web-app

A web application (or web app) is an application software that runs on a web server, unlike computer-based software programs that are stored locally on the Operating System (OS) of the device. Web applications are accessed by the user through a web browser with an active internet connection.

Reasons to use Web Scraper:

- Improved Efficiency
- 24 / 7 Accessibility
- Higher Levels of Security
- Easy Customisable and Scalable.
- Easy Installation and Maintenance

2.4.2 Firebase

Firebase is a Backend-as-a-Service — BaaS. Firebase frees developers to focus crafting fantastic user experiences. You don't need to manage servers. You don't need to write APIs. Firebase is your server, your API and your datastore, all written so generically that you can modify it to suit most needs.

Reasons to use Firebase:

- Realtime Database
- File Storage
- Authentication
- Hosting

2.4.3 Google API

Google APIs are application programming interfaces (APIs) developed by Google which allow communication with Google Services and their integration to other services. Examples of these include Search, Gmail, Translate or Google Maps. Third-party apps can use these APIs to take advantage of or extend the functionality of the existing services.

Reasons to use Google API:

- To control the number of calls made to your API.
- Secure authorization.
- User authentication

2.4.4 Android Studio

Android Studio is the official integrated development environment (IDE) for Android application development.To support application development within the Android operating system, Android Studio uses a Gradle-based build system, emulator,code templates, and Github integration. Every project in Android Studio has one or more modalities with source code and resource files. These modalities include Android app modules, Library modules, and Google App Engine modules.

Reasons to use Android Studio:

- Android Studio uses highly integrated Gradle build system. It's a great tool that offers dependency management.
- Availability of Drag-and-Drop
- Java Code Auto Completion
- It offers more stable performance than Eclipse. The system requirement of Android Studio is lower.

Chapter 3

Project Planning

3.1 Members and Capabilities

Table 3.1: Table of Capabilities

SR. No	Name of Member	Capabilities
1	Shaikh Muskan	Java,UI Design,SQL
2	Khan Heena	Java,SQL
3	Palekar Ariba	UI Design,SQL

Work Breakdown Structure

3.2 Roles and Responsibilities

Table 3.2: Table of Responsibilities

SR. No	Name of Member	Role	Responsibilities
1	Shaikh Muskan	Team Leader	UI Design, Database Development
2	Khan Heena	Team Leader	Database Development
3	Palekar Ariba	Team Leader	UI Design

3.3 Assumptions and Constraints

Donation module is introduced by assuming people will donate food through our application while helping poors. Application also provides information about NGOs and we are assuming there cooperation in placing children and old age people to respective orphanage and old age homes. Also they will help to get food from donors.In module notification we are assuming data we are collecting is genuine.

3.4 Project Management Approach

Project will follow Spiral model for development. Spiral model is used where requirements are not freezed. For developing this application we slowly slowly got

clear idea about requirements hence this is best suitable model for our application development. Also we developed modules one by one and tested them as soon as they developed.

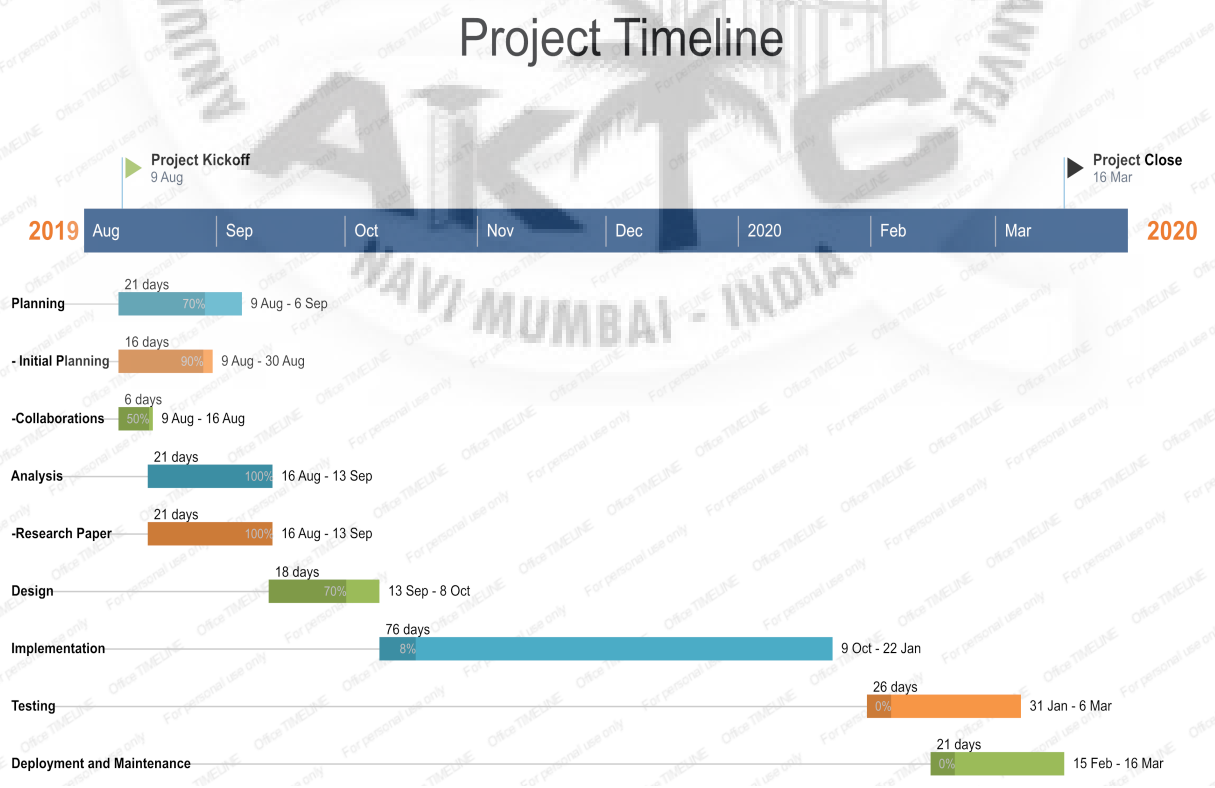
3.5 Ground Rules for the Project

- Project should also be build from users prospective.
- We will keep positive attitude towards Project and team members and everyone will respect each other.
- Everyone will take initiative by sharing ideas, telling improvements in each other work.
- If any member got stuck at something he/she should ask for help to one another.

3.6 Project Budget

The tools we used like Firebase, Google API for Database is Google's free platform given for development.

3.7 Project Timeline



Chapter 4

Software Requirements Specification

4.1 Overall Description

4.1.1 Product Perspective

When we found out that Mumbai has a total population of 12.44 million and Around 1/3rd of world's food is thrown away or get spoil by the people, whereas one the other hand we see growing poverty in the nation.By 2050 the population is expected to increased by 2billion,with 1.2 billions of people is living without food at present.On the urge of growing nation on positive side we cannot neglect the fact of increasing poverty in country.So,for the Needy people in country, we come up with idea for solution of making an android-application along with website for their basic requirement. we went through many case studies about slums.We also looked for government pro- grams happening for them. As a result of all this efforts we understood the problem NGO volunteers and poor people are facing. Then we decided to come up with some solution that includes technologies and the solution which will help all people to develop together.[1].

4.1.2 Product Features

Our application will try to reduce food wastage with the help of restaurants,wedding and many such source who can contribute in providing their leftover food to the Needy people, so that the Needy can get at least one time of meal.Our system will allow the user to register, login and view the nearby donor, receiver or any Needy person who are in need and can send them in-app notification for confirmation.Our application is using the firebase for real-time database to store the details of the user and food share between them.

4.1.3 User Classes and Characteristics

Different users will use the product differently depending on their needs hence user class will change according to the need of the user. But the basic characteristics of the classes will remain the same where the user will primary interact with main

class of system that is authentication. The rest of classes are dependent on what type of user is accessing system.Different users will use the product differently depending on their needs hence user class will change according to the need of the user. But the basic characteristics of the classes will remain the same where the user will primary interact with main class of system that is authentication. The rest of classes are dependent on what type of user is accessing system.

4.1.4 Operating Environment

Our system is platform independent. That is it will run in any Mobile handset with Android OS. The only important thing is mobile phone should have internet connection. Operating environment also consist of firebase database. Firebase instance is implemented.

4.2 System Features

- Authorization /Registration
- Status Checker
- Locator
- Match Matrix
- Notification
- Executor
- Updator
- Database

4.2.1 Authorization

This modules contains the login and registration of all 4 users (i.e. NGO,Needy People,Donor the Volunteer).After getting registered into the system the user can access the benefits of our system anytime anywhere.

4.2.2 Status Checker

This Module will keep the record ofthe Needy People the NGO.We Need Status Checker inour System to Check the Status of Needy People,there might be a scenario where the Needy People livelihood is better from before, and now the Needy People is no more a Needy People, so our component Status Checker will maintain the record of Needy people.Another situation is of NGO people, where the NGO income's goes down, so we need to take a record of it.

4.2.3 Locator

Locator will take the current location of the users using our System.

4.2.4 Match Matrix

Match Matrix is the heart of our System Match Matrix will take the current location of all the 4 users from locator module, then it match the location which will best fit ,Of all the users to respective people.

4.2.5 Executor

After Notification Module here comes the Executor Module which will keeps the record of food collected and served to the Needy People.

4.3 External Interface Requirements

4.3.1 User Interfaces

- All users should register first to get all services.
- All the data asked in forms should be accurate to get best results.
- To fill form properly hints and tooltips are added to every input field.

4.3.2 Hardware Interfaces

- PC with 4 GB RAM
- 2 GB of available disk space
- 1280 x 800 minimum screen resolution.
- 2.3 GHz Fast processor.
- Mobile handset with Android OS.
- 2GB RAM

4.3.3 Software Interfaces

- Android studio : version 3.2.3
- Internet Connection.
- Firebase account

4.3.4 Communications Interfaces

- Communication between needy, Donor and NGO is done through our application only by sending notifications to both.
- Also in case if NGO is getting difficulties then they can take help of volunteer to communicate.
- Application and Database communication is done by Firebase instance.

4.4 Nonfunctional Requirements

4.4.1 Performance Requirements

The performance of our application is based on how accurate data is provided by users.

4.4.2 Safety Requirements

The phone number entered can be helpful in verifying identity of user. Hence only genuine people can get access to application. The data is stored online in firebase database which is very secure because these data is access by only authorized user by providing username and password.

4.4.3 Security Requirements

Fake users cannot use our application because before entering into application need to enter loginID and Password which reveals all users identity also our applications runs only when internet connection is provided. Using internet we can check for Ip addresses, users location,etc.

Chapter 5

System Design

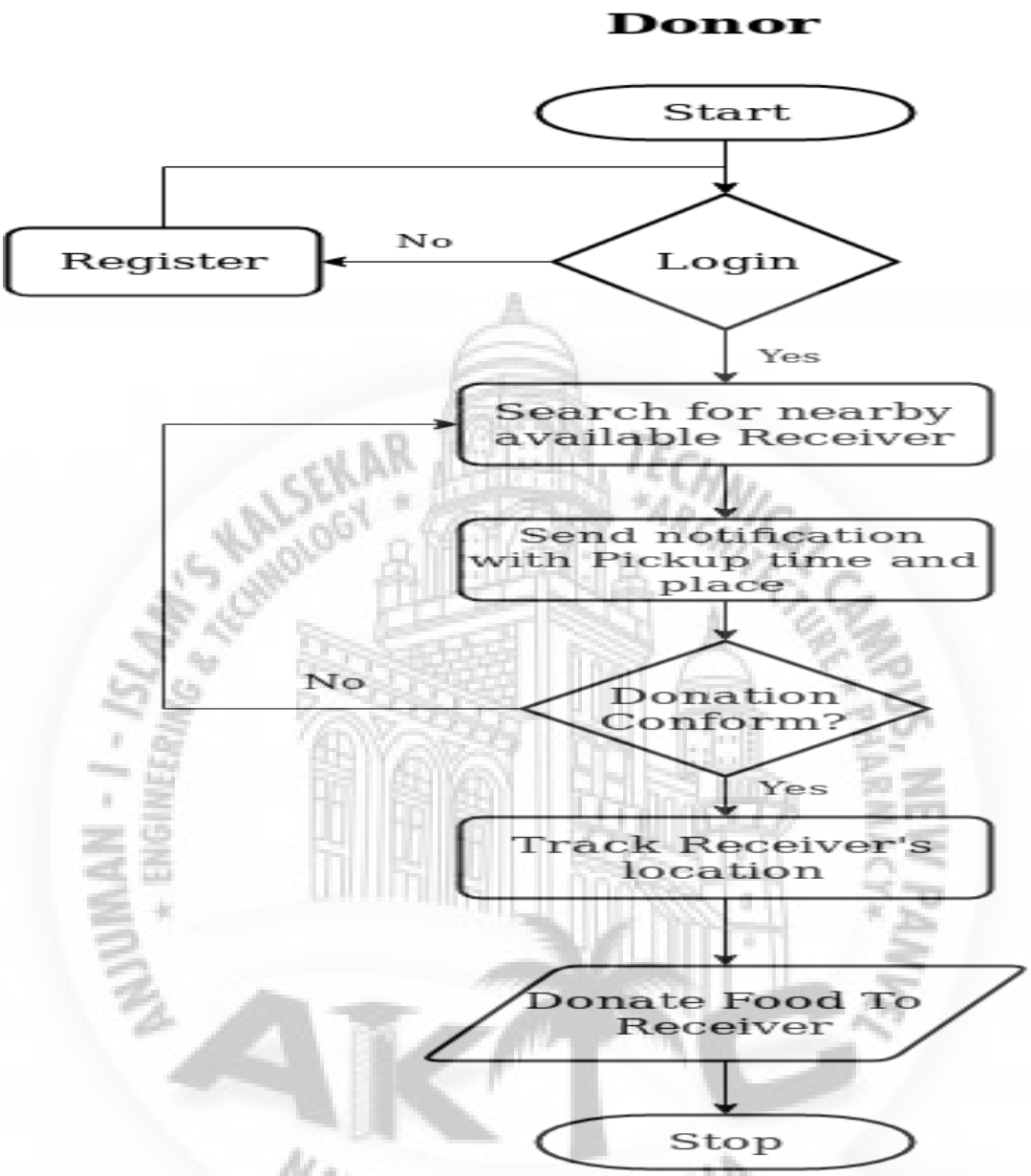
5.1 System Requirements Definition

Our application will try to reduce food wastage with the help of restaurants,wedding and many such source who can contribute in providing their leftover food to the Needy people, so that the Needy can get at least one time of meal.Our system will allow the user to register, login and view the nearby donor, receiver or any Needy person who are in need and can send them in-app notification for confirmation.Our application is using the firebase for real-time database to store the details of the user and food share between them.

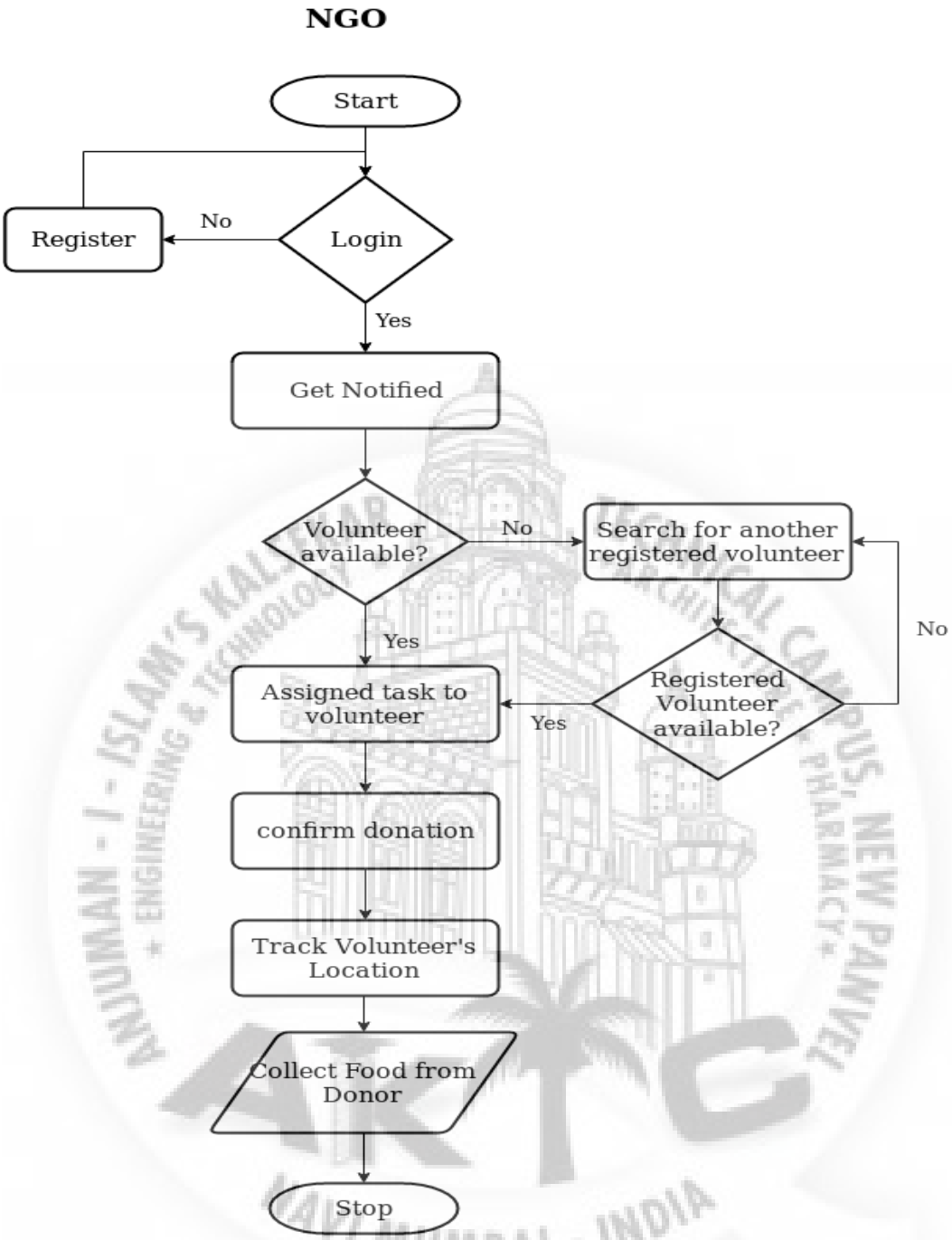
5.1.1 Functional requirements

- Status Checker: This Module will keep the record of the Needy People the NGO.
- Match Matrix:.Match Matrix is the heart of our System Match Matrix will take the current location of all the 4 users
- Notification: After Match Matrix, Notification modules Comes into Picture , which will notifies the Needy People that there is availability of food in their location.

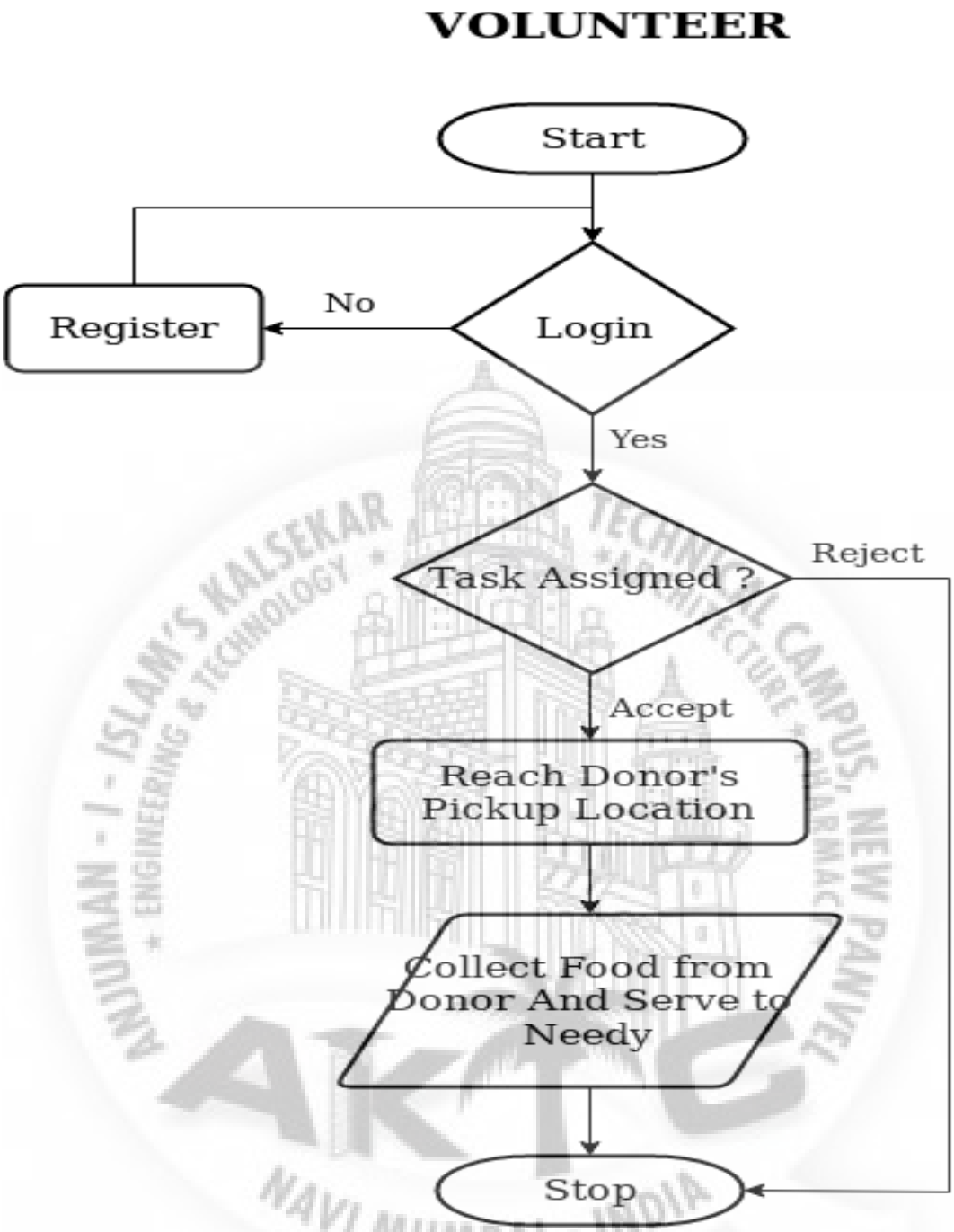
Data-flow Diagram



flow diagram of Donor



flow diagram of NGO



flow diagram of Volunteer

5.1.2 System requirements (non-functional requirements)

5.1.3 Performance Requirement

The performance of our application is based on how accurate data is provided by users.nPerformance of module is based on number of people involved.

5.1.4 Safety Requirement

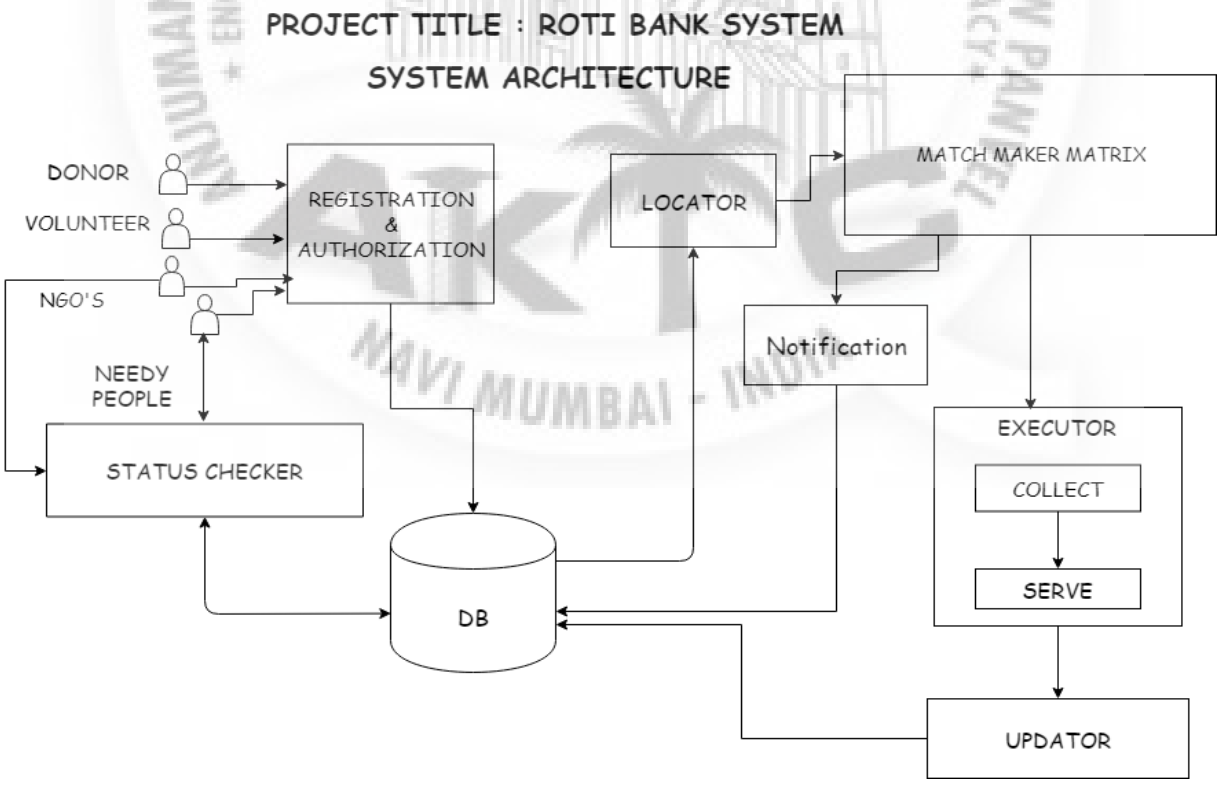
The phone number entered can be helpful in verifying identity of user. Hence only genuine people can get access to application. The data is stored online in firebase databse which is very secure because these data is access by only authorized user by providing username and password.

5.1.5 Security Requirements

Fake users cannot use our application because before entering into application need to enter loginId andPassword which reveals all users identity also our applications runs only when internet connection is provided. Using internet we can check for Ip addresses, users location,etc.

5.2 System Architecture Design

System architecture represents system by showing modules included and connections between them, users, databases. In our system architecture there are modules shown Registration, Status Checker, Locator, Notification, Match Matrix, Executor, Updator.NGO Volunteer, Needy and normal user are the users of system.Registration is necessary for every user in system.



5.3 Sub-system Development

There are total 8 model in our system architecture namely Registration, Status Checker, Locator, Notification, Match Matrix, Executor, Database and Updator. All the module will be briefly described further.

5.3.1 Registration

This modules contains the login and registration of all 4 users (i.e. NGO,Needy People,Donor the Volunteer).After getting registered into the system the user can access the benefits of our system anytime anywhere. Everyb user must have to register.

5.3.2 Status Checker

This Module will keep the record of the Needy People the NGO.We Need Status Checker in our System to Check the Status of Needy People,there might be a scenario where the Needy People livelihood is better from before, and now the Needy People is no more a Needy People, so our component Status Checker will maintain the record of Needy people.Another situation is of NGO people, where the NGO income's goes down, so we need to take a record of it.

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After Match Matrix, Notification modules Comes into Picture , which will notifies the Needy People that there is availability of food in their location.

5.3.6 Executor

After Notification Module here comes the Executor Module which will keeps the record of food collected and served to the Needy People.

5.3.7 Updator

The Updator Module will keep all the have records of all the task been perfomed by every components.

5.3.8 Database

The Database contain all the records of each and every module

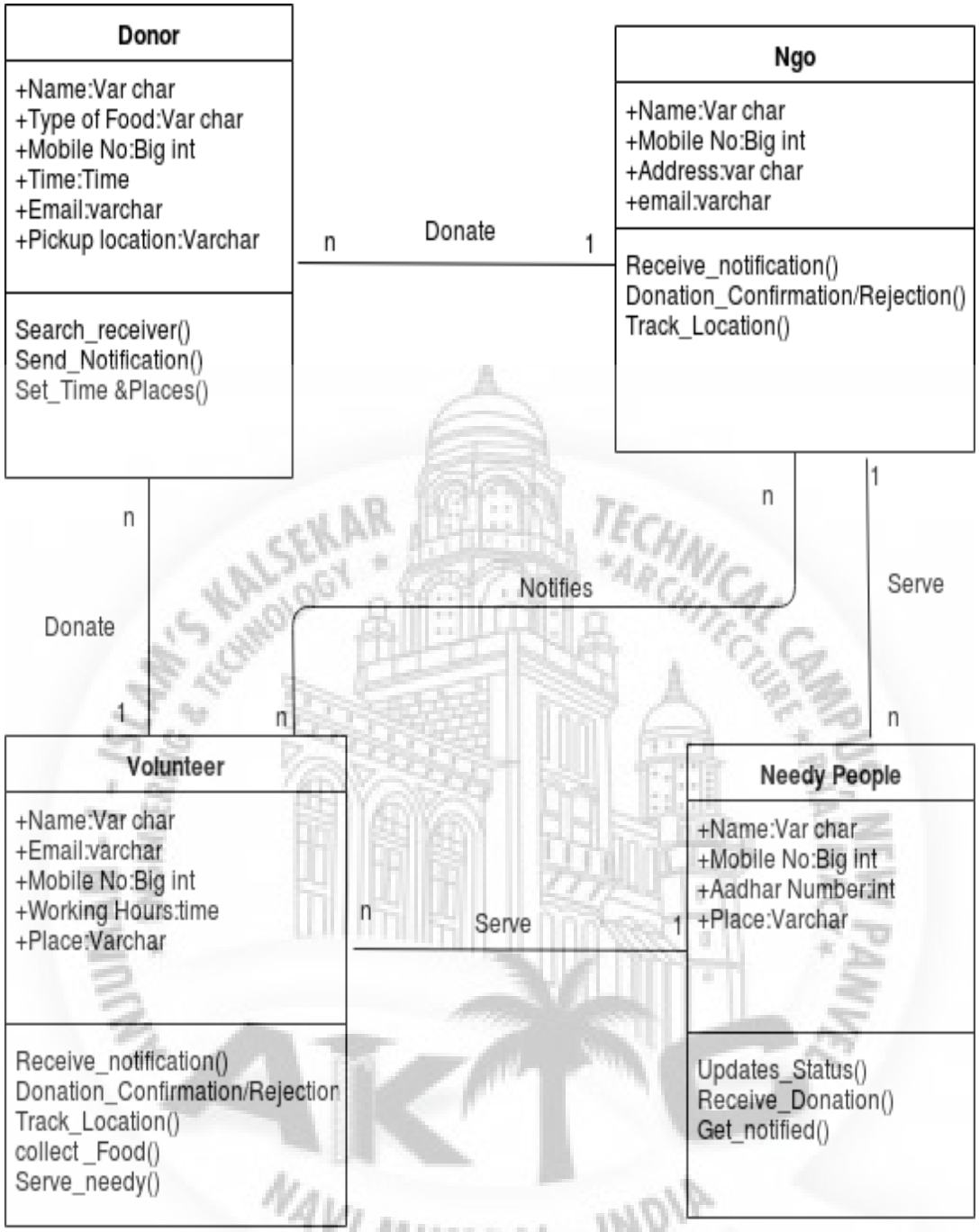
5.4 Systems Integration

In order to achieve goal of system the developed modules need to be get integrated with one another. Registration module should be always perform first before any other module. Google API should get integrated with data converter module. Notification module can stand alone but it will be used by needy so it should be integrated with get Locator module.

5.4.1 Class Diagram

class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects.

The class diagram is the main building block of object-oriented modeling. It is used for general conceptual modeling of the structure of the application, and for detailed modeling translating the models into programming code.



The class diagram of our Roti bank system gives us an overview of our project.

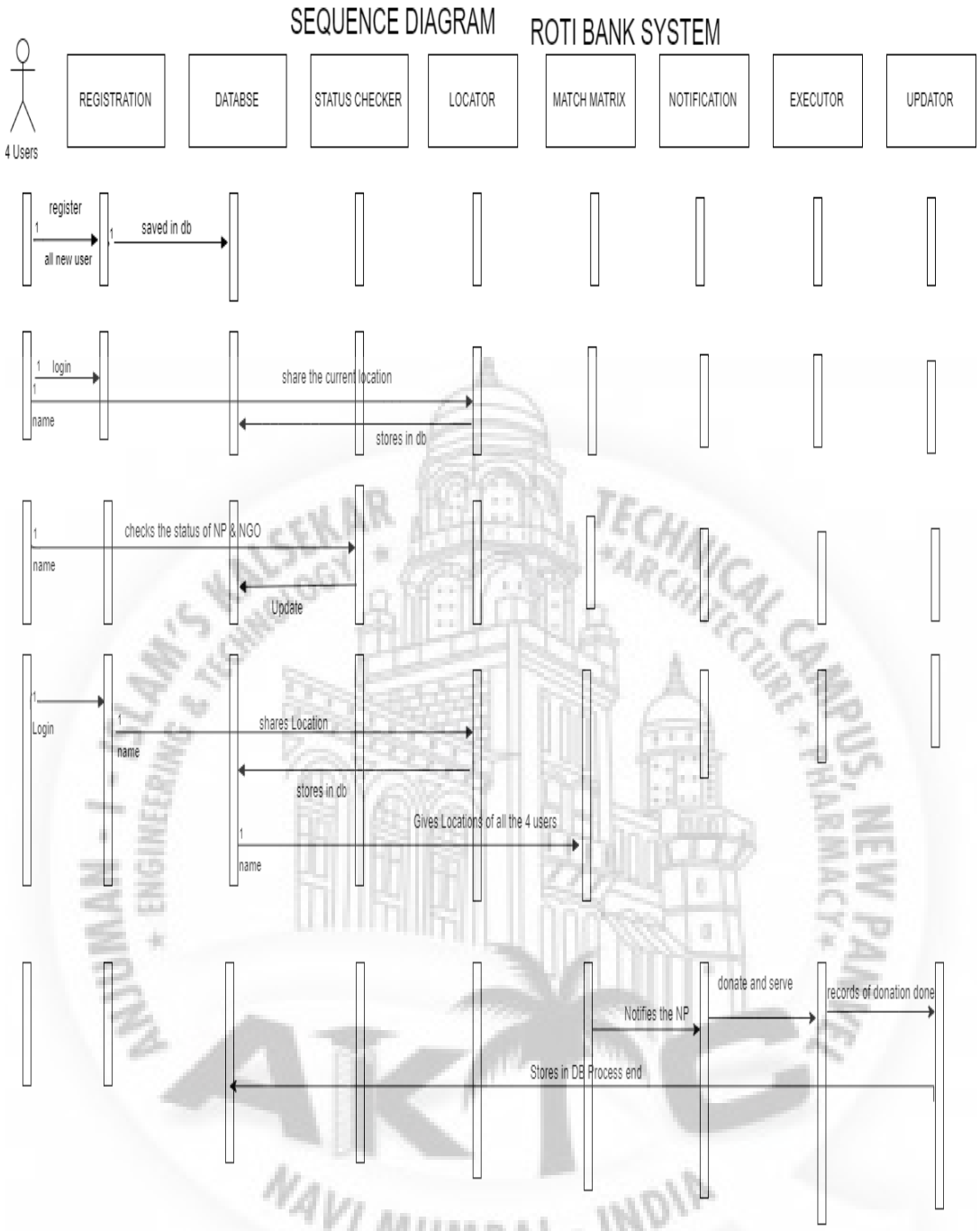
- Donor : The Donor and NGO relations is such that multiple donor can connect to only 1 NGO at a time , But many NGO can connect to many donor. Similar is the relation between Donor and volunteer.
- NGO. : The NGO relation with Needy people is such that the NGO can connect to multiple Needy People and can give food, but the Needy people cannot connect to multiple NGO at a time to get food. The NGO and volunteer relation is many to many . i.e. multiple NGO can connect to multiple volunteer at a

time.Even a single NGo can connect to multiple volunteer at a time and vice versa.

- Volunteer: The Volunteer relation with NGo and Donor is explained above, and the many volunteer can connect to one Needy people at a time.
- Needy people: Needy People relation with NGo is many to one. Also Needy peo- ple can connect to a single Volunteer at a time.The Needy People cannot connect to Donor directly,based on the assumption that the needy people cannot have any source of communication to connect to Donor directly.

5.4.2 Sequence Diagram

A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place. We can also use the terms event diagrams or event scenarios to refer to a sequence diagram. Sequence diagrams describe how and in what order the objects in a system function. These diagrams are widely used by businessmen and software developers to document and understand requirements for new and existing systems.Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when]



- Sequence diagram of our system begin with Authorization Registration process of all the 4 actors.
- Then the actors can logged in into the system anytime anywhere
- After that the status checker will check the status of NGO Needy People, so that the people who are now more a needy people will not be benefited anymore.
- All this records are added in database.
- Then the location of all the users are taken by the system, with the help of locator.

- Then the locations of all the 4 users is matched with the help of Match Matrix.
- The volunteer is given a notification about the availability of food, from the donor.
- After the volunteer recieves the notification, he/she will collect the food from donor's place.
- Then the NGO Volunteer will donate the food to the Needy People.
- All this records are being updated with the help of updator.

Chapter 6

Implementation

6.1 Donation

Donor begin with Registration and Authorization process. After this part the Donor will Login into the system to get the benefit of our system. Then the Donor will search for the available NGO or the Volunteer, to collect the food. Then the Donor will send Notification, to the receiver, the pickup time place. The Donor can then, track the location of the receiver. Then on arrival of the receiver the Donor will donate the food.

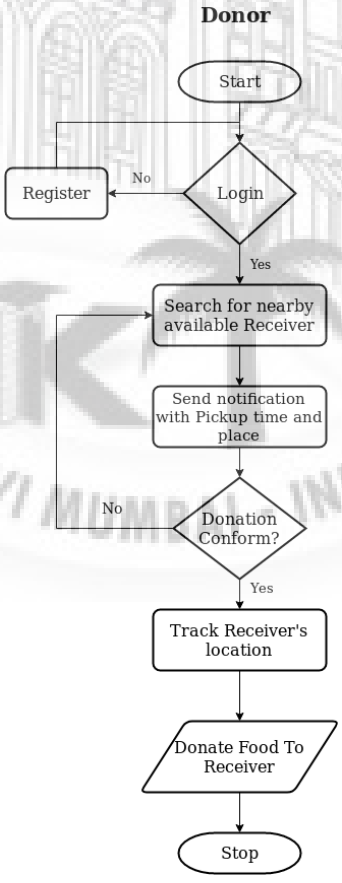


Figure 6.1: Flow diagram of Donor

```
@Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        requestWindowFeature(Window.FEATURE_NO_TITLE);
        getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN,
            WindowManager.LayoutParams.FLAG_FULLSCREEN);
        getSupportActionBar().hide();
        setContentView(R.layout.activity_dialogue);
        txtlocation = findViewById(R.id.txt_select_location);


        radioBreakfast = (RadioButton) findViewById(R.id.radio_breakfast);
        radioLunch = (RadioButton) findViewById(R.id.radio_lunch);
        radioDinner = (RadioButton) findViewById(R.id.radio_dinner);

        edtQuantity = (EditText) findViewById(R.id.edt_quantity);
        edtAddress = (EditText) findViewById(R.id.edt_address);
        edtfooddescribe=(EditText) findViewById(R.id.fooddescribe);
        donate=findViewById(R.id.btn_donate);
         findViewById(R.id.txt_select_location).setOnClickListener(new View.
            OnClickListener() {
            @Override
            public void onClick(View v) {
                displayPlacePicker();
            }

            private void displayPlacePicker() {


                PlacePicker.IntentBuilder intentBuilder = new PlacePicker.
                    IntentBuilder();
                try {


                    startActivityForResult(intentBuilder.build(dialogue.this),
                        PLACE_PICKER_REQUEST);
                } catch (GooglePlayServicesRepairableException e) {
                    e.printStackTrace();
                } catch (GooglePlayServicesNotAvailableException e) {
                    e.printStackTrace();
                }
            }
        });

        radioBreakfast.setOnCheckedChangeListener(new CompoundButton.
            OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton buttonView, boolean
                isChecked) {
                if (isChecked) {
                    foodType = "breakfast";
                }
            }
        });
        radioLunch.setOnCheckedChangeListener(new CompoundButton.
            OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton buttonView, boolean
                isChecked) {
                if (isChecked) {
                    foodType = "lunch";
                }
```

```
55            }
56        });
57        radioDinner.setOnCheckedChangeListener(new CompoundButton.
              OnCheckedChangeListener() {
58            @Override
59            public void onCheckedChanged(CompoundButton buttonView, boolean
                  isChecked) {
60                if (isChecked) {
61                    foodType = "dinner";
62                }
63            }
64        });
65
66        donate.setOnClickListener(new View.OnClickListener() {
67            @Override
68            public void onClick(View v) {
69                ConnectivityManager connectivityManager = (ConnectivityManager)
                      getSystemService(Context.CONNECTIVITY_SERVICE);
70                NetworkInfo networkInfo = connectivityManager.
                      getActiveNetworkInfo();
71                if (connectivityManager.getActiveNetworkInfo() != null &&
                      networkInfo.isConnectedOrConnecting()) {
72
73
74                    quantity = edtQuantity.getText().toString().trim();
75
76
77                     address = edtAddress.getText().toString().trim();
78                    final String location = txtlocation.getText().toString().
                          trim();
79                    foodinto=edtfooddescribe.getText().toString().trim();
80
81
82
83                    String display = "";
84                    if (TextUtils.isEmpty(foodType)) {
85                        display = "Please select";
86
87                    } else if (TextUtils.isEmpty(foodinto)) {
88                        display = "Please enter description";
89                        edtfooddescribe.requestFocus();
90                    }
91
92
93                    else if (TextUtils.isEmpty(quantity)) {
94                        display = "Please enter quantity";
95                        edtQuantity.requestFocus();
96                    }
97
98
99                    else if (TextUtils.isEmpty(address)) {
100                       display = "Please enter a address";
101                       edtAddress.requestFocus();
102                   } else if (TextUtils.isEmpty(location)) {
103                       display = "Please select a valid location";
104                       txtlocation.requestFocus();
105                   }else {
106
107                    mFirebaseInstance = FirebaseDatabase.getInstance();
108                      Date date=new Date();
109
```

```
110                    SimpleDateFormat ISO_8601_FORMAT=new SimpleDateFormat("
                           yyyy-MM-dd'T'HH:mm:sss'Z'");
111
112                    final String now=ISO_8601_FORMAT.format(new Date());
113                      userid = auth.getInstance().getCurrentUser().getUid();
114                      String status=" ";
115
116                      // get reference to 'RepositoryName' node
117                      mFirebaseDatabase = mFirebaseInstance.getReference("
                             donation");
118                   donation donation = new donation(foodType,foodinto,
                         quantity, coordinates, address,now,userid,status);
119                   mFirebaseDatabase.push().setValue(donation);
120
121                  sendnotification();
122                    Toast.makeText(dialogue.this, "Successfully donated user",
                         Toast.LENGTH_LONG).show();
123                                        startActivity(new Intent(
                                             dialogue.this, thanks.class)
                                             );
124
125                }
126
127              }
128
129            }
130              });
131  }
```

6.2 Notification

Notification modules notifies about the user about the availibility of food in an organization. Notification module is used when donor want to send a message to the receiver and when after the request send to the receiver if receiver accept/decline this will notify to the donor.

Figure 6.2: Request send to NGO'S.

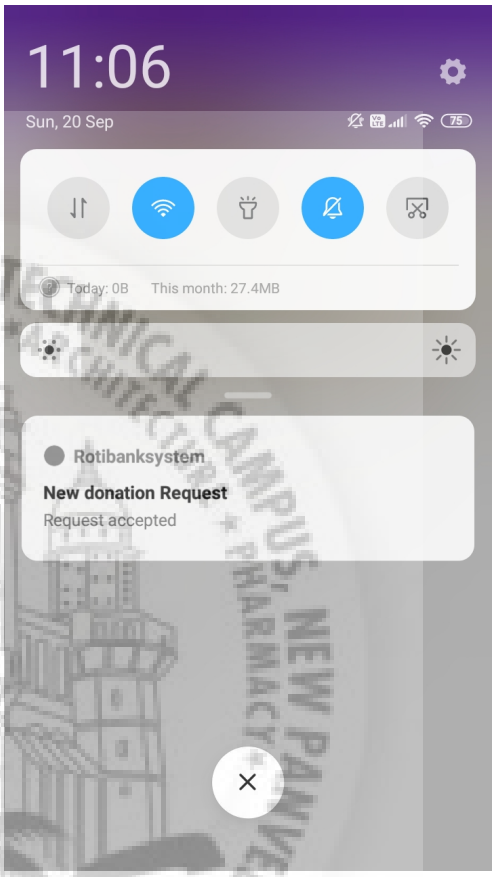


Figure 6.3: Request Accepted.

```
private void sendnotification() {
      chatdonate.child(userid).child(id).child("requesttype").setValue("donate
          ").addOnCompleteListener(new OnCompleteListener<Void>() {
           @Override
           public void onComplete(@NonNull Task<Void> task) {
          if(task.isSuccessful()){

              chatdonate.child(id).child(userid).child("requesttype").setValue(
                  "received").addOnCompleteListener(new OnCompleteListener<Void
                  >() {
                   @Override
                   public void onComplete(@NonNull Task<Void> task) {
                       HashMap<String,String> chatnotification=new HashMap<>();
                       chatnotification.put("from",userid);
                       chatnotification.put("type","donate");
                       chatnotification.put("fooddescp",foodType);
                       chatnotification.put("fooddetail",foodinto);
                       chatnotification.put("Address",address);
                       chatnotification.put("Quantity",quantity);
```

```
17                          notificationref.child(id).push().setValue(
                                chatnotification).addOnCompleteListener(new
                                OnCompleteListener<Void>() {
18                               @Override
19                               public void onComplete(@NonNull Task<Void> task) {
20                              if(task.isSuccessful()){
21                                  Toast.makeText(dialogue.this,"received",Toast.
                                        LENGTH_SHORT).show();
22                                  finish();
23                              }
24                               }
25                          });
26
27                      }
28                  });
29
30              }
31                }
32
33
34          });
35      }
```

6.3 Nearby NGO's

In this module we are displaying nearby ngo's ,volunteer,needy people of respective donor position for this we have geofire which takes langitude,longitude of donor's location and within that radius display ngo's,needy,volunteer.

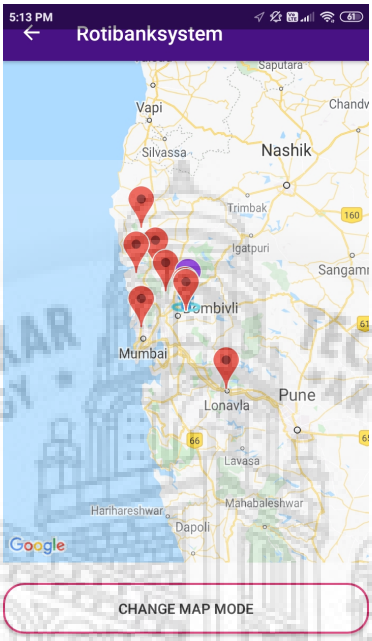


Figure 6.4: Mapping of nearby NGO

```
boolean getngoaround=false;

List<Marker> markerList=new ArrayList<Marker>();
    private void getclosedngo() {
        getngoaround=true;



        DatabaseReference databaseReference = FirebaseDatabase.getInstance().
            getReference().child("ngo").child("coordinates");
        GeoFire gfngo = new GeoFire(databaseReference);
        GeoQuery geoQuery = gfngo.queryAtLocation(new GeoLocation(myLocation.
            getLatitude(),myLocation.getLongitude()), 80);
        geoQuery.addGeoQueryEventListener(new GeoQueryEventListener() {
            @Override
            public void onKeyEntered(String key, GeoLocation location) {
                for (Marker markerIt:markerList){
                    if (markerIt.getTag().equals(key))
                        return;


                }
                LatLng ngolocation=new LatLng(location.latitude,location.
                    longitude);
                Marker mngo=mMap.addMarker(new MarkerOptions().position(
                    ngolocation).title("ngo's"));
                mngo.setTag(key);
                markerList.add(mngo);

```

```
26
27
28              }
29
30
31              @Override
32              public void onKeyExited(String key) {
33
34                  for (Marker markerIt:markerList){
35                      if (markerIt.getTag().equals(key)){
36                          markerIt.remove();
37                          markerList.remove(markerIt);
38                          return;
39                      }
40                  }
41
42              }
43
44              @Override
45              public void onKeyMoved(String key, GeoLocation location) {
46                  for (Marker markerIt:markerList){
47                      if (markerIt.getTag().equals(key)) {
48
49                          markerIt.setPosition(new LatLng(location.latitude,
                                location.longitude));
50                      }
51
52                      }
53
54              }
55
56              @Override
57              public void onGeoQueryReady() {
58
59
60              }
61
62              @Override
63              public void onGeoQueryError(DatabaseError error) {
64
65              }
66          });
67
68
69
70
71      }
```

Chapter 7

System Testing

Everything which is developed should get tested. Because if developed software has some errors that may cost users business. System testing is the testing in which fully integrated software are tested. Basically system testing is process of checking if developed software is working as per users requirements it fully observed by computer based system.Testing is important because in Software Development Life Cycle the system is perform as the first level of testing where system is tested as a whole .During testing validation and verification both are required.

7.1 Test Cases and Test Results

Test ID	Test Case Title	Test Condition	System Behavior	Expected Result
T01	Check Phone No.	1234	Incorrect Phone No.	Incorrect Phone No.

7.2 Sample of a Test Case

Title: Login Page – Authenticate Successfully on gmail.com
Description: A registered user should be able to successfully login at gmail.com.

Precondition: the user must already be registered with an email address and password.

Assumption: a supported browser is being used.

Test Steps:

1. Navigate to gmail.com
2. In the 'email' field, enter the email of the registered user.

3. Click the 'Next' button.
4. Enter the password of the registered user
5. Click 'Sign In'

Expected Result: A page displaying the gmail user's inbox should load, showing any new message at the top of the page.

Actual Result:

7.2.1 Software Quality Attributes

- Availability: The system will be available 24/7 as application is totally based on internet ,whenever the user use the system the specific data should be available to the user.
- Correctness: As per user search correct data should be fetched from database and shown to user.
- Reliability: The system should be reliable for producing correct output so that user can reliable on system.
- Extensibility: The system is capable to be modified by changing some modules or by adding some features to the existing system.

Chapter 8

Screenshots of Project

8.1 App

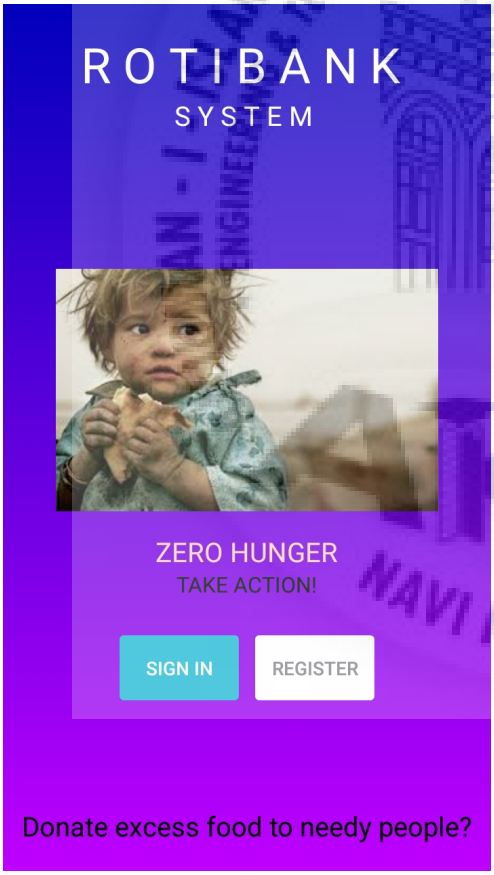


Figure 8.1: Splash Screen.

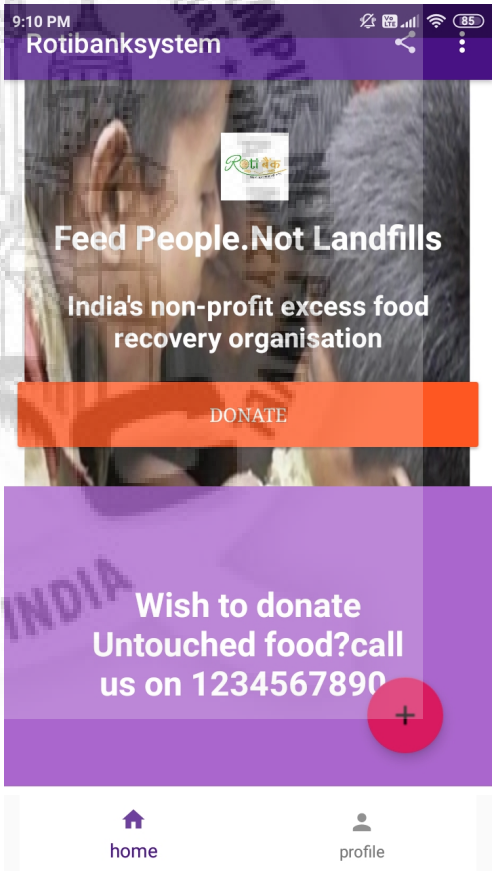


Figure 8.2: Main screen.

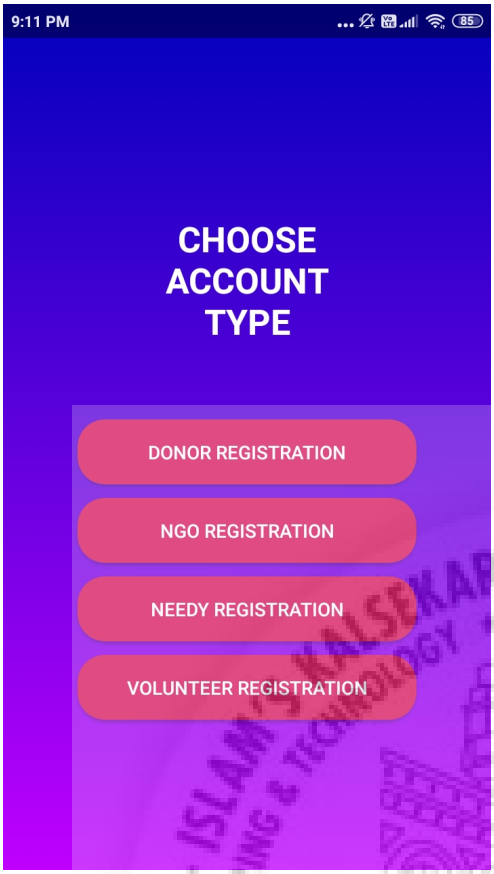


Figure 8.3: Account type.

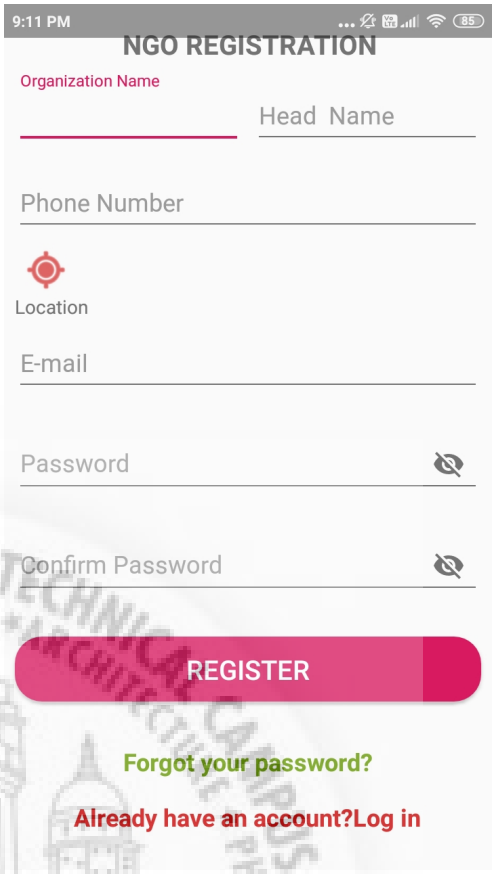


Figure 8.4: NGO'S regsitration.

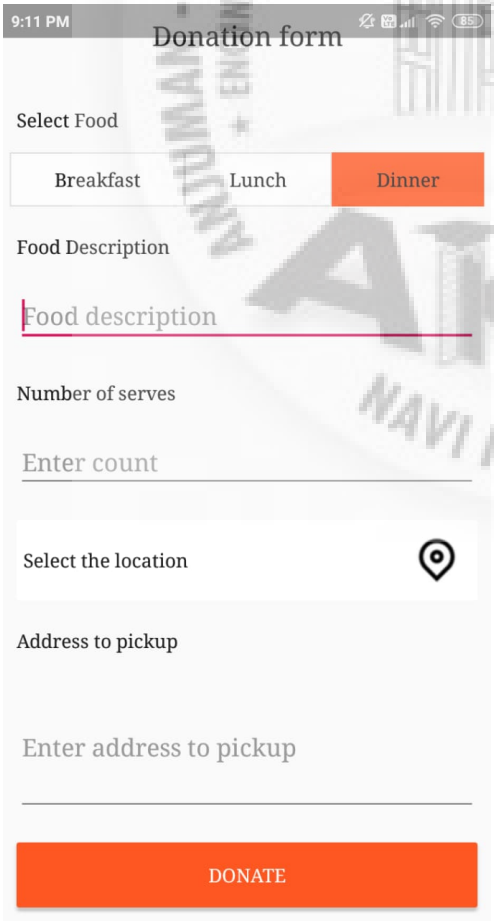


Figure 8.5: Donation form.

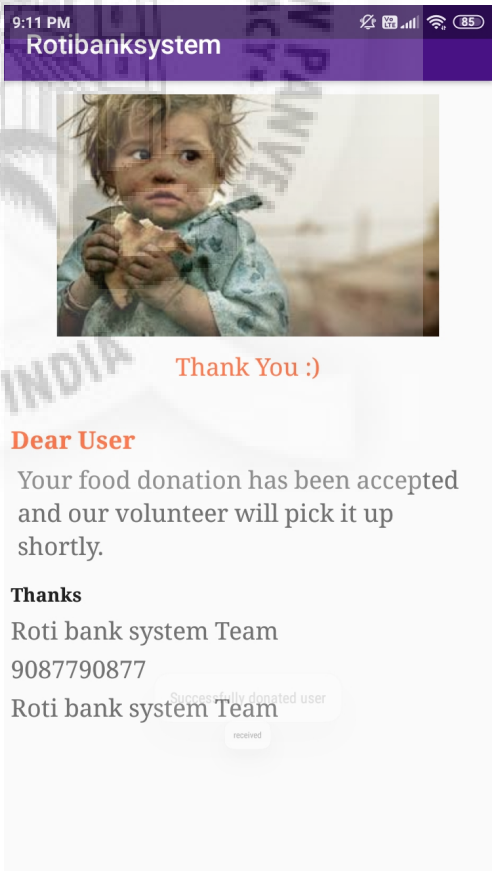


Figure 8.6: Thanks message.

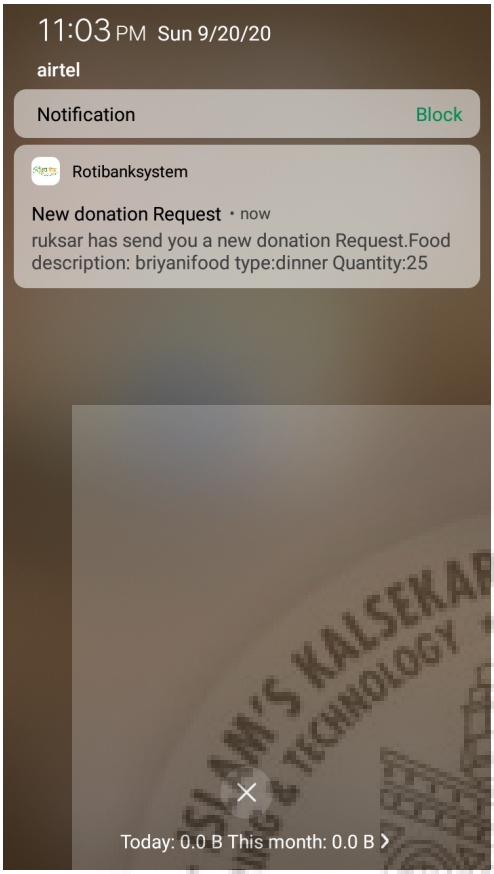


Figure 8.7: Request send to NGO'S.

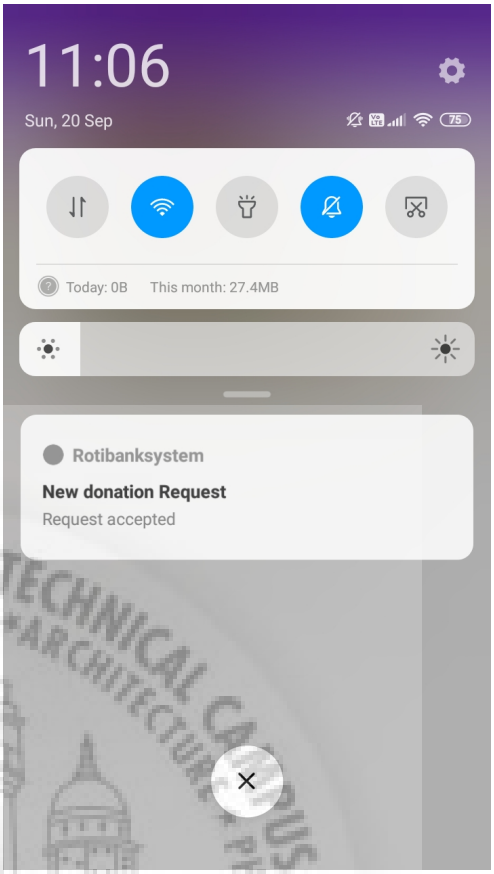


Figure 8.8: Request Accepted.

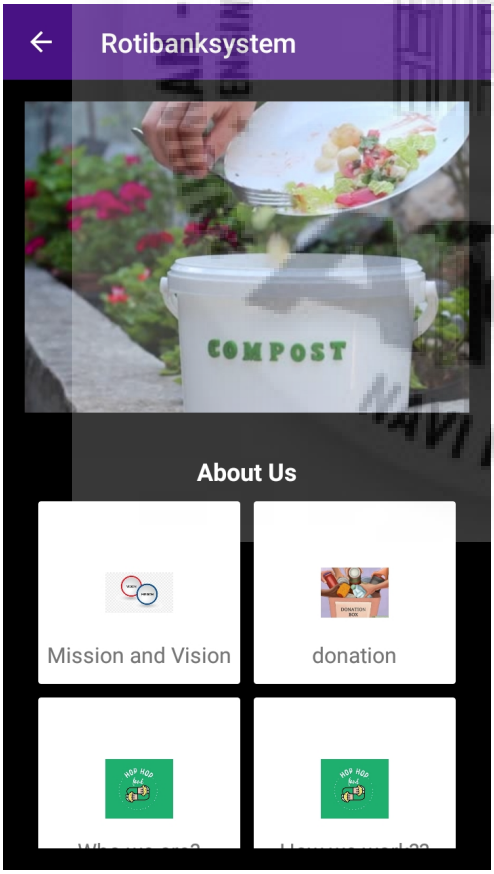


Figure 8.9: About us.

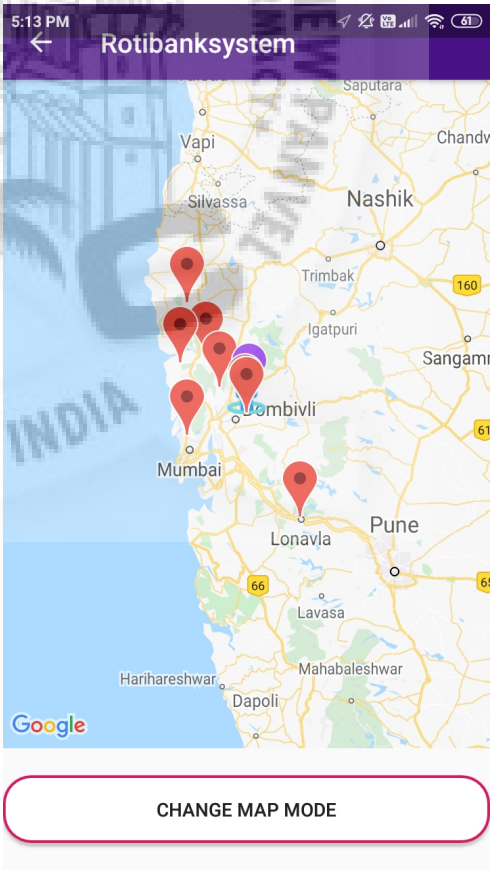


Figure 8.10: Nearby ngo's,neefy,volunteer.

Chapter 9

Conclusion and Future Scope

9.1 Conclusion

Food is a basic need for the survival and production of food requires utilization of copi- ous amounts, hence depletion of natural resources. Considering the socio, moral, envi- ronmental and economic impacts of the food wastage, minimizing food waste is one of the global challenges for sustainability. Food is wasted at various stages of its life cycle from field to mouth due to various reasons. Food waste happening at the end of the food chain is avoidable, with the help of our (Roti Bank System). Roti Bank System will try to help Needy People in such a way that atleast they do not sleep with hunger. Roti Bank System is hands-on application where the Needy People do not need to strive hard for food. The Food which the poor will get is free of charge, Roti Bank System will never ask the Needy people with any kind of such act where they the people are asked to pay money for food. Roti Bank System is new,different and very easy to access . No one need the hard- fast knowledge to learn how to use Roti Bank System. Roti Bank System in a way new technology which one should accept it for their own benefits. Thus in all this possible way Roti Bank Syststem becomes the most useful and helpful platform one and all who are less fortunate.

9.2 Future Scope

- Can extend this app to have Payment option to donate a amount to needy.
- Connect with IOT device which check the Quality of a food.
- Support Multiple Platform.

References

[1] *A Food Wastage Reduction Mobile Application.*; Hajjdiab, H., Anzer, A., Tabaza, H. and Ahmed, W. (2018).,2018 6th International Conference on Future Internet of Things and Cloud Workshops (FiCloudW).

[2] *Introduction to System Architecture Design.*; [online] Available at:https://medium.com/backendarmy/introduction-to-system-architecture-design-fcd4f327b6c9 [Accessed 15 Aug. 2019].

[3] *Google S2,* Available at: https://medium.com/@self.maurya/lesser-known-things- about-googles-s2-fea42f852f67 (Accessed:)

Achievements

1. Project Competitions

   (a) *Roti Bank System : Supporting Food Waste Reduction and Poverty*; Khan Heena, Shaikh Muskan, Ariba Palekar, National Level Project Exhibition cum Poster Presentation , March, 2020(Venue : universal college of engineering)

   (a) *Roti Bank System : Supporting Food Waste Reduction and Poverty*; Khan Heena, Shaikh Muskan, Ariba Palekar, National Level Online Project Competion , july, 2020(Venue : Online)

Vidya Vikas Education Trust's

Universal College of Engineering

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I.E.T.E.-I.S.F.

"6th National Level Project Exhibition cum Poster Presentation"

Certificate of Participation

This is to certify that Ms./Mr. MUSKAN . SHAIKH

of AIKTC

participated in the "6th National Level Project Exhibition cum Poster Presentation"

Date: 13th March 2020

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(Campus Director)

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Maharashtra Institute of Technology, Aurangabad (M.S.)
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Head, CSE Dept.

Dr. Santosh Bhosle
Principal

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Ariba Palekar

From Anjuman islam Kasekar Technical Campus
has participated (Round 1) in TECH-PRO, National Level Online Project Competition
on 15th June 2020.

Dr. Smita Kasar
Head, CSE Dept.

Dr. Santosh Bhosle
Principal

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Department of Computer Science and Engineering
in Association with
Computer Society of India and The Institution of Engineers (India)

TECH-PRO
NATIONAL LEVEL ONLINE PROJECT COMPETITION

CERTIFICATE

This is to certify that

Ariba Palekar

From Anjuman I kalsekar TEchnical Campus
has participated (Final Round) in TECH-PRO, National Level Online Project Competition
on 27th June 2020.

Dr. Smita Kasar
Head, CSE Dept.

Dr. Santosh Bhosle
Principal

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