Managing Crisis Situation Through Application

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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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APPROVAL

This Project/internship titled **"Managing Crisis Situation Through Application"**, submitted by Nazmul Hoque, ID: 161-15-7506 and Mohsin Sikder ID:161-15-7499 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 5th December2019.

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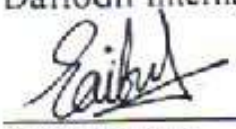

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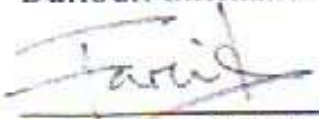

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DECLARATION

I am declare that, this project has been done by me under the supervision of **Md. Zahid Hasan, Assistant Professor, Department of CSE,** and Daffodil International University. I 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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ABSTRACT

This project is on “Managing Crisis situation through application”. Communication during crisis time is very crucial for rescue team and the victim. The emergence never comes with prior intimation .The project concern with developing to remove crisis situation (violation, sexual-harassment, and un-humiliating behavior) from society especially for women .The project mainly work when any people fall in danger other people (Guardian, friends, helpline) received phone call, SMS notification and also tracking by google map .This app send SMS to police station . A valid Authentication user also see nearest police station, hospital, ATM booth. We hope that this app decrease violation from society and user also use this app his/him own purpose.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This Application is mainly developed for Bangladeshi people to provide help in such circumstances where no nearest help will be available or a situation where decision power not works efficiently as have to work. Females are not secure nowadays, anywhere. In Bangladesh economy, women's are sign of lord and powerful energy still then the harassment and un-humiliating behavior are the consequences. Women might belong from any region, any country or from any background, the safety is big issue. There are always insecurity about safety and every women are conscious about safety. The snoopy eyes are always present in surrounding. To pretend from any of unfortunate accident, we are developing this application. This Application not even help female user but it also provide help to male users too. Because problem or accident might be arises with anyone at anywhere, where location might be new or known. The need of this application is arises due to the increasing violation, sexual assaults, misbehavior against the female. The smart phone is only the medium via help can access, because Smartphone are definitely and easily involve like a body part in our day-to-day life and it also provide location of victim by using GPS (Global Positioning System) to bring help. Sexual Harassments are not only arises with women but also with males in such of circumstances. To provide help to victim using the android based application, is the main intention of this application. It is not possible or not happened that, anyone would be always there with victim to protect from any of accidental situations. This application which is android based, allow victim to use the different features while defeating with a critical situation where you might need for taxi using internet linking facility, police stations, and another instant help. This application bring help where you need and when you need it. Managing Crisis Situation is android based application in which firebase database is used. In this database the information is stored related to the application, which allow to store and provides the same data which getting inserted previously in this application. Like some common predefine sms for e.g. Save me, Help me etc. SQLite allows to maintain the some number which is then used in calling purpose in call me application [2].

1.2 Objectives

The android app currently available for people self-protection

The goals of our system are:

- Valid Authenticate User can Signup
- Add to friend request, other can accept
- Friend can tracking their real time location
- Admin can manage all this Database
- The app will be activate with the long press of power button
- The app will be also activate with the voice command
- The Audio voice and capture image of the victim will store in database

1.3 Motivation

Applications based on Android make life comfortable, easier, and convenient and advanced for the user. Android phones are highly customizable and flexible and as such can be altered to suit your choice and manage according to your needs.

Nowadays, Bangladeshi peoples are facing huge of problem. Everywhere they are fall any danger, eve teasing, road accident, and lot of thing but they cannot complain and don't take any action .We are trying to make a platform to help those people who can taking action against terrorist. They also seeking help their guardian.

1.4 Expected Outcome

Information technology has revitalized the life of human being and has made life easier by various kind of application .The main focus of the project to keep safe user from harassment , crisis, violation ,eve teasing .An emergence time user also seen their nearest police station , fire service ,hospital .We are trying to collaborate to user and our defense department .

1.5 Report Layout

We all know, practical knowledge is more important than theory. In our graduation degree we learn a lot of things. This project gives us scope to share our knowledge

and utilize our thought. By doing this project we can implement our skill more effectively.

First Chapter includes Introduction, Objectives, Motivation, Expected outcome and Report layout of our project. Second chapter contains Introduction, Related works, Comparative Studies, Scope of the problem and also Challenges of our project. Our third chapter contain all about Requirement Specification which are Use Case Modeling and Description, Entity Relationship Model, Design Requirements.

Fourth Chapter describes our full Mobile application description which is related to Design Specification like User Interface design, Back end Design, Interaction Design and UX, Implementation Requirements. Our last chapter is all about Implementation and Testing. This contains Implementation of Database, Front-end Design, Interactions, Testing Implementation and Test Results and Reports.

Our last chapter contain conclusion of the full project. This report contains all about our Mobile application system, its problem, solution and use of the system.

CHAPTER 2

BACKGROUND

2.1 Introduction

We come across many issues regarding the safety and security in day-to-day life. Bangladesh which acknowledges it to be a powerful nation and a monetary center can accomplish its objective if and just if expansive quantities of ladies take part in the advancement procedure. Bangladeshi people are always concern with their safety but cannot get proper help. This app will help them over the data.

2.2 Related Works

At present In Bangladesh There is few app like **999** which is made by BTRC. But they are not considering the present situation in Bangladesh. It also complex for user to use. And the system is not so intelligent .So we are trying to give a better solution of this problem.

Figure: 2.1 999 national Help Desk Site

Features of 999 Help Desk

- Call Bangladesh Police
- Call Fire Service
- Take any help
- Emergency service
- Medical Service
- User can Complain in Help Desk

2.3 Comparative Studies

Emergency help line 999 to help user through phone call. If any user fall in crises, they inform 999 and 999 help line provides service. They detect user problem and solve them.

Problem like that

- Hospital
- Fire
- Ambulance

This app is not location service where user fall danger .And it not any cloud service .But our app will detect where user fall in danger. Our app also give real-time location service .User friend also help user .Real-time communication system are also provided.

2.4: Scope of the Problems

- If user have no smart phone then they cannot use our app
- If user have no internet connection they cannot get help
- If user device bellow 23 API level they also cannot use our app
- If user can give wrong information
- Unnecessary call will arise

2.5 Challenges

- **Multiple User Connected**

In Primary stage, our app cannot connect with multiple user at a time. Real-time tracking is more challenging for us. Manage every user profile is so tough

- **Allocation of Resources:**

Our cloud system (firebase) give us 100 user space at a time. If hit more than hundred user our database cloud system will get error. To store every user profile, phone number, friend list it take huge space so that we need to buy cloud storage.

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

3.1 Business Process Model

No matter what industry you belong to, consistently improving process efficiency is crucial to growth. Ignoring business process management altogether is a surefire way to stagnate or, worse, fall behind in the competition .But our app will totally free for the user because the user can use easily .If the user can payed money , all people cannot use.

3.2 Use Case Model

A use-case model is a model of how different types of users interact with the system to solve a problem. As such, it describes the goals of the users, the interactions between the users and the system, and the required behavior of the system in satisfying these goals.

A use-case model consists of a number of model elements. The most important model elements are: use cases, actors and the relationships between them.[8]

A use-case model is used to graphically represent a subset of the model which we can use simplify to communications. We will used several use-case diagrams associated with the given model, each model showing a subset of the model which elements relevant for a particular purpose in a project. A same model component may be shown on several use-case diagrams, but every element must be several. We use use-case model to maintain every tools, this stability check is self-operating so that we can changes to the model every element will be self-operating through back on every use-case diagram which shown in element.

The use-case model may contain packages that are used to structure the model to simplify analysis, communications, navigation, development, maintenance and planning. Much of the use-case model is in fact textual, with the text captured in the use-case specifications that are associated with each use-case model element. These specifications describe the flow of events of the use case.

The use-case model work for as a unity direction all over a system evolution. It is used as the main identification of the functional essential for the system, as the

binging for analysis and design, as and input to iteration planning, as al over of defining test cases and as all over for user identification.

- **System Use Case:**

The system has the following set of use cases. Figure: 3.1 is describing the System use case. User can create account by Log In. Before creating account, the user must check display message is there any other option to create account. If the account is free then they will select that account after that they will submit the account for approval. If admin found the account necessary then approve the account and published the account. An email notification will be sent to the user.

User may visit the apps, view the friend list, search other friend list, login to the site but can't create an account or post any comment in the account.

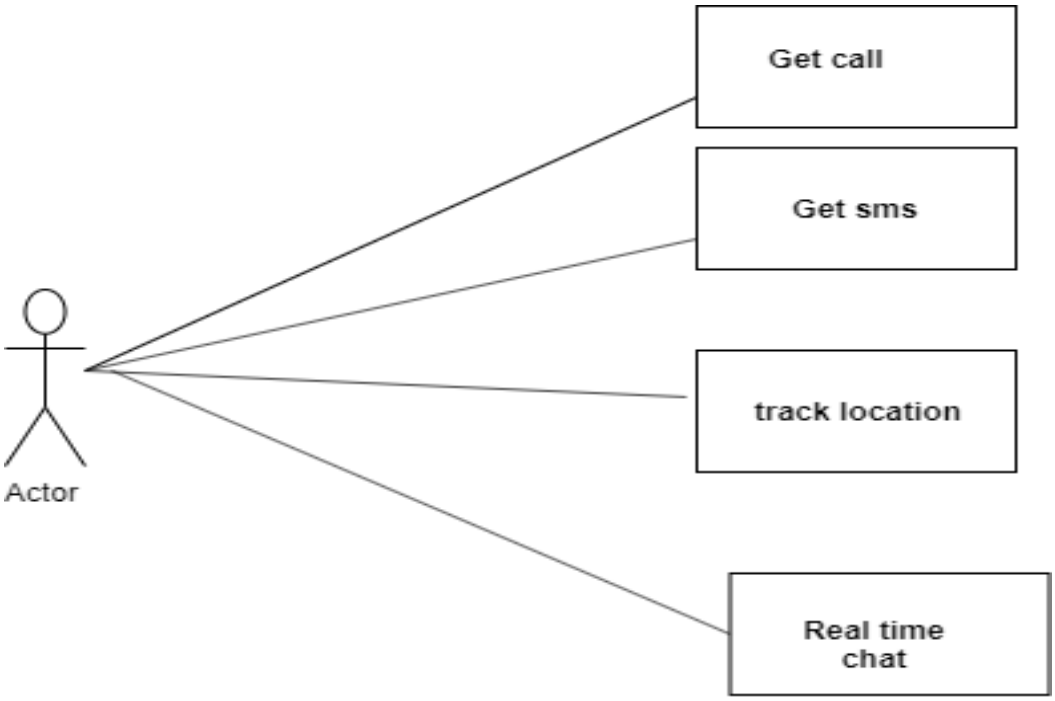

Figure: 3.1 System Use Case Diagram

- **Use Case of Registration for User:**

User can create account by Log In. Figure: 3.2 describe the Log In use case.

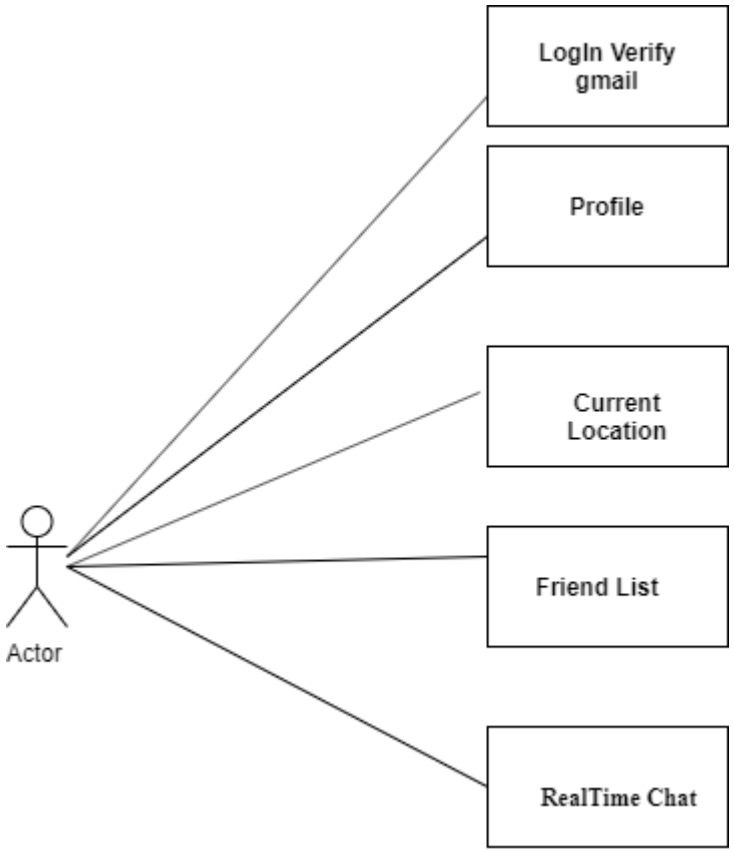

Figure: 3.2 Log in for Create Account Diagram

Table 3.1: User registration system for user

Use case name	• Login (For Create account)
Precondition	• None
Actor	• None
Primary Path	• Enter Login Id • Enter Password • Click “Login” button

- **Use case Create Account:**

After the Log In the registered user can create an account. Figure: 3.3 describe the Create account use case. The user must check the account for the expected friend list .If the account is free then the user create an account and submit it for approval. And After that they can share the account or post.

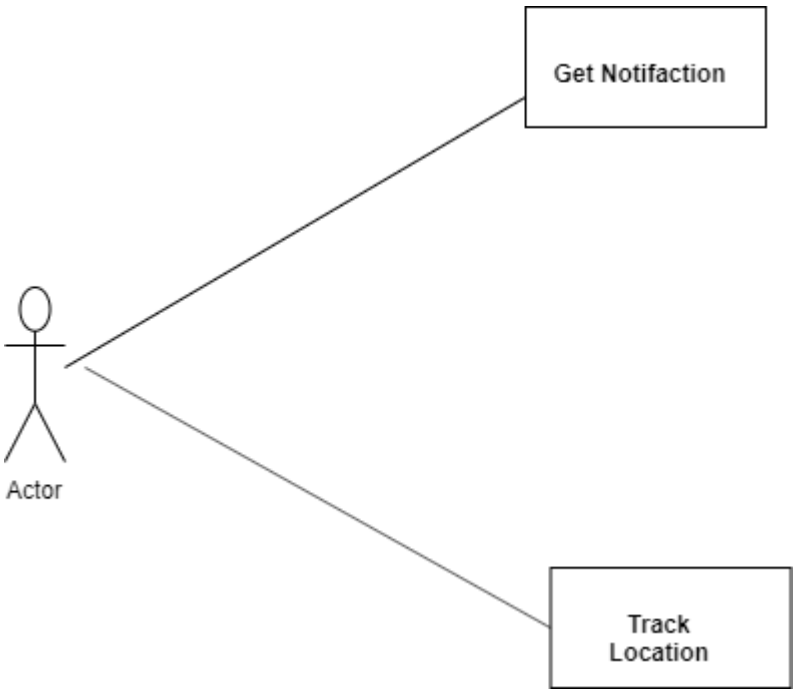

Figure: 3.3 Create Account for Well-wisher Diagram

Table 3.2: Use case for create account

Use case name	• Create account
Precondition	• Login
Actor	• Well-wisher
Primary Path	• Show notification • Receive call • Tracking location

- **Use Case for Select Friends:**

User create an account by select account option for that app. Figure: 3.5 describe the Select friends use case.

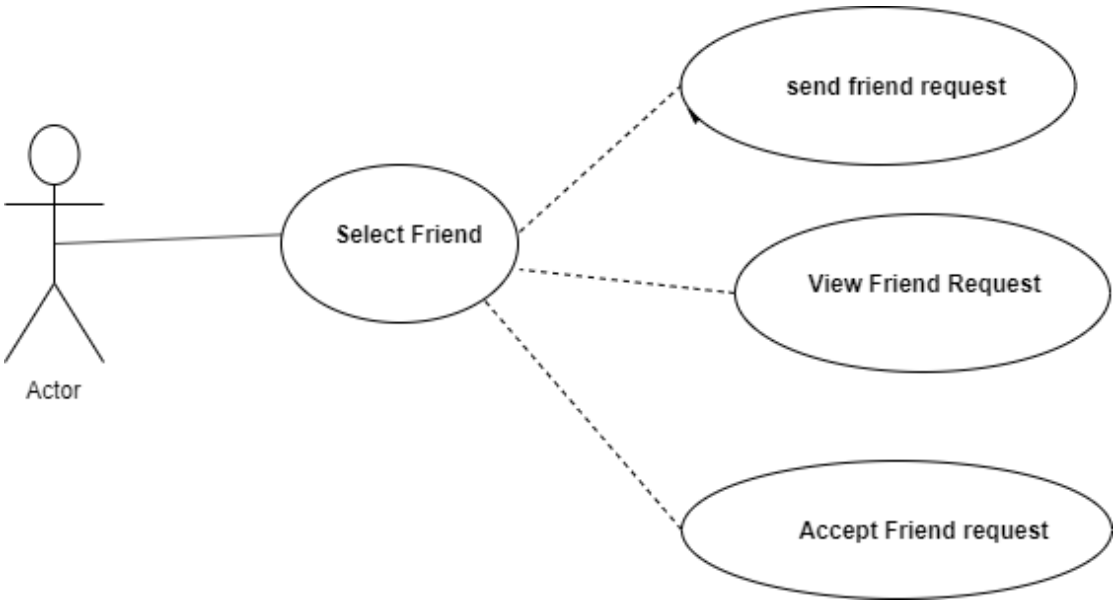

Figure: 3.4 Select Friend Diagram

Table 3.3: Use case for select friend

Use case name	• Select Friend
Precondition	• Send friend request
Actor	• User
Primary Path	• Select friend • Send request • Accept friend

- **Use Case of LOG IN for User:**

User can create account and setting account, registration process and contact by Log In. Figure: 3.7 describe the Log In use case for user.

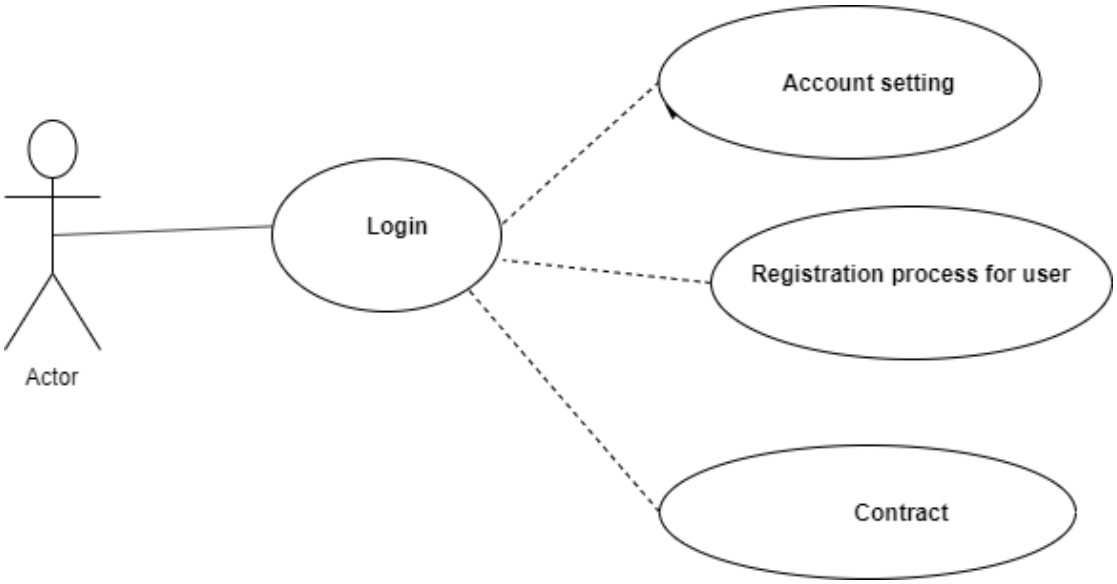

Figure: 3.5 Log in for user Diagram

Table 3.4: Use case login system for user

Use case name	• Login
Precondition	• None
Actor	• User
Primary Path	• Enter Login Id • Enter Password • Click “Login” button

3.3 Implementation Requirements

In a software implementation, we need any programming knowledge could be done to decisions in need to which technologies should be used to program for any project. The following is a condemning essential for different programming languages which program we used such an Android Application.

3.3.1 **Front-End-Design (XML):**

XML means extensible markup language. In android we design layout using xml. Every XML tag have attribute. Android User Interface design by XML. In our App we use user interface design using xml. IN XML file we can also click event listener, but didn't it. We just use it design in activity and fragment layout.

- **Google Material Design**

As quoted above Google came up with visual language that benefits the user, after combining some of the good design principles. They named it as material design (codenamed as "Quantum Paper") and introduced it in 2014 Google I/O conference. Material design is a single system which acts as the unified resource among the devices of different size like Laptop, Mobile devices etc. It also makes use of the transitions, padding, and depth-effects like shadows. Google's Material Design considers "material" as a homogeneous digital fabric in which the material responds according to the user interaction. It provides the certain design standards for developing application across android, web and iOS devices.

- **Back-End (Firebase):**

Firebase is a real-time NoSQL database. It provide us to save user information in real-time. Firebase save data Json format. Simultaneously firebase is a cloud hosting. We can chat real-time through firebase database. Firebase have lot of service

- Authentication
- FCM Service
- Cloud Hosting
- Fire store
- Test Lab
- Storage

- Cloud Messaging
- AdMov

- **PHP:**

PHP is an open source Scripting language. The edition of PHP (Version 5) has implemented Object Orientation. This was considered for the project due to a small previous knowledge of the scripting language as well as a want to expand and improve knowledge and understanding of the language. Although there was some previous knowledge of the language this was quite limited as most PHP sites that we have developed have only been very basic. Using the language to create some basic input forms and put the incoming values into a database. From this basic insight into Java it was felt that with some more research and experimentation this would be an excellent language to use to make the online ticket sales system. Most Web Hosting companies offer PHP on their servers as default and include a MySQL database so the program will be written in PHP and interact with a MySQL database to store and retrieve information that is necessary for the running of the program [9].

- **MySQL**

MySQL is the world's most popular open source database, enabling the cost-effective delivery of reliable, high-performance and scalable Web-based and embedded database applications. It is based on the structure query language (SQL), which is used for adding, removing, and modifying information in the database. Standard SQL commands, such as ADD, DROP, INSERT, and UPDATE can be used with MySQL. MySQL can be used for a variety of applications but is most commonly found on Web servers.[7] When we uses MySQL in any website to include web page that access information in ant database. These pages are often referred to as "dynamic," meaning the content of each page is generated from a database as the page loads. When we create a dynamic Web pages then we referred as MySQL to as database-driven for create a websites. In many database driven websites that we use MySQL as a Web scripting language such as java to access information from the database. MySQL commands can be incorporated into the java code, allowing part or all of a Web page to be generated from database information. Because both

MySQL and java are open source (meaning which is free to download and use), the java/MySQL combination has become a popular choice which is use for database-driven websites.

3.4 Logical Data Model

Figure 3.10 describes the Entity relationship Diagram of this project which representing the relationship among the entities .This diagram relation between user to user, user to friend, user to well-wisher. Each entity has its own attributes

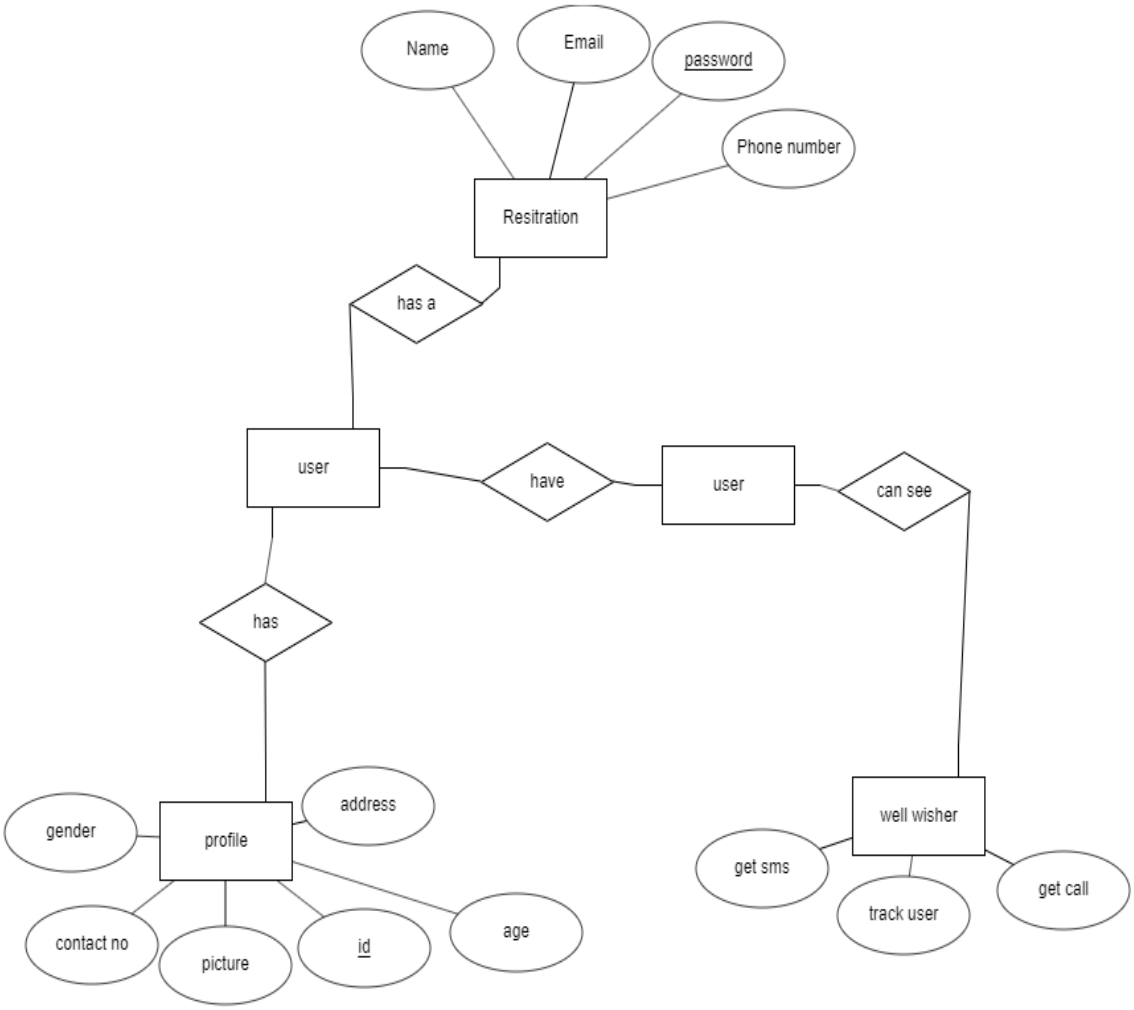

Figure 3.6: Entity Relationship diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 System Environment

The Design & Development of managing crisis situation connect user through database. If user connect internet they can see their current location, find people, access other user location. We store every user information in our database and one user search another user.

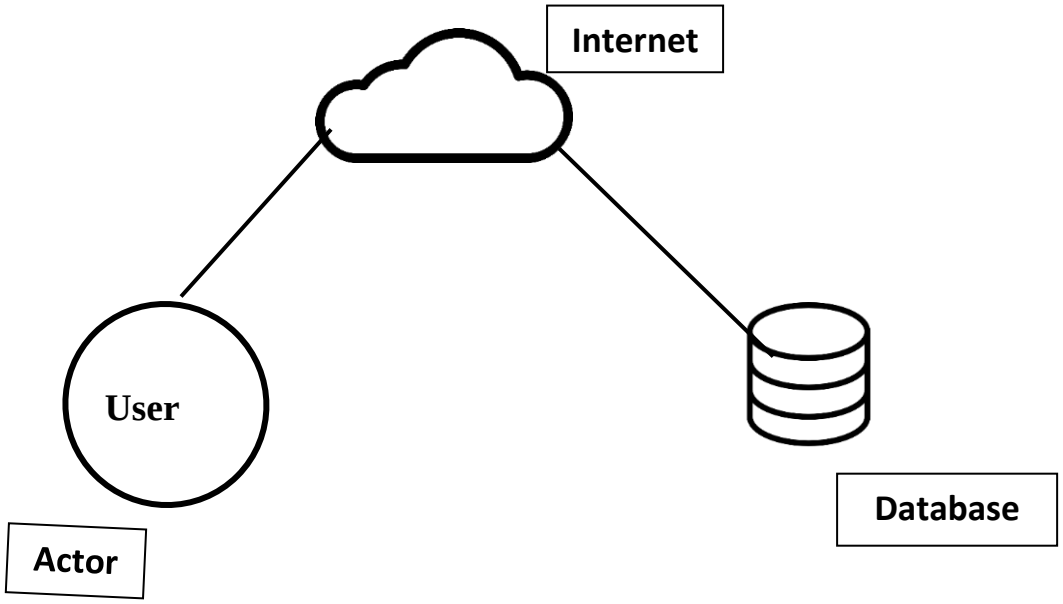

Figure: 4.1 System Environment

4.2 Front-end Design

Home Page

User can see friend list in figure 4:2: Show the home page of the System. When user login then user see his all friend in home page.

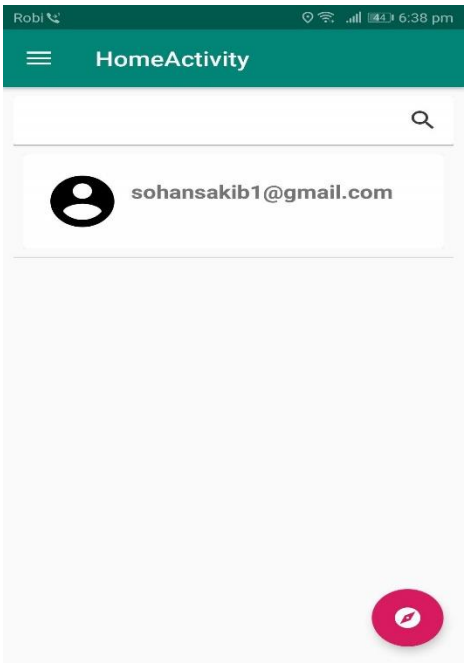

Figure 4.2 shows the Home Page of the system

Login Panel

In Figure 4.3: Show the Login system for user. User can login this app using Gmail or phone number.

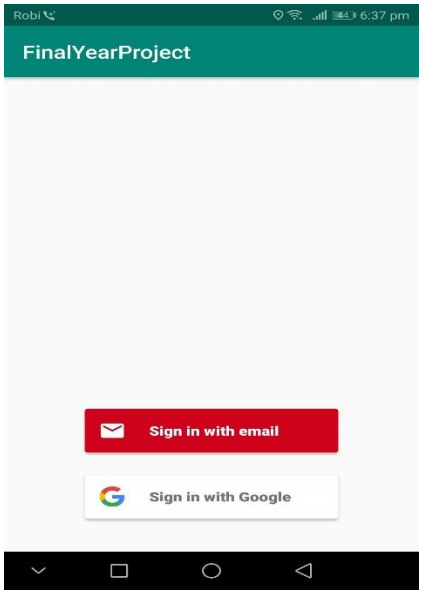

Figure 4.3 show the Login system

Send friend Request

Figure 4.4: Show the feature of friend request page. User can send request everyone. If they send friend request other users notify .Other user accept friend request, the can track location.

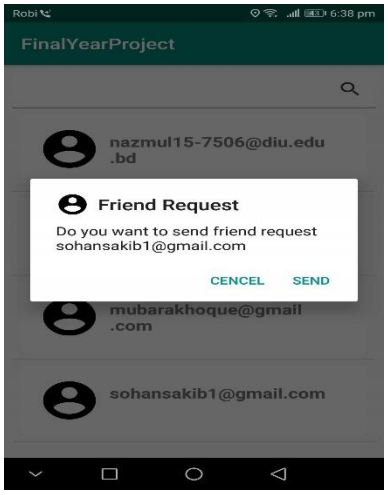

Figure: 4.4: Featured Friend Request

User Friend List:

User can see all friends in Figure 4.5 .When user open his account and select friend list option then show all friends in this figure.

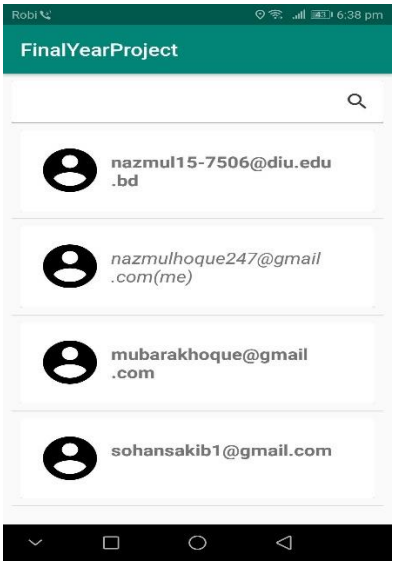

Figure 4.5: show user friend list

Google Map

Google map show victim people correct location. User also can see their current location.

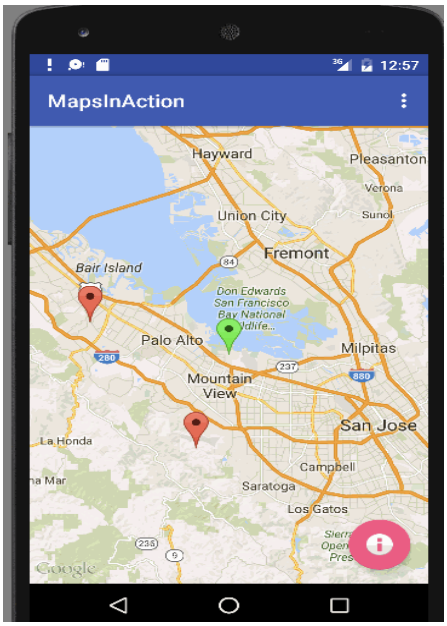

Figure 4.6: show google map

4.3 Back-end Design

User

In Figure 4.7: This is the firebase database backend system. We store every user data key value fair using Json system.

Figure: 4.7: Users table

Database Option

In database figure 4.8: show all data and information in user.

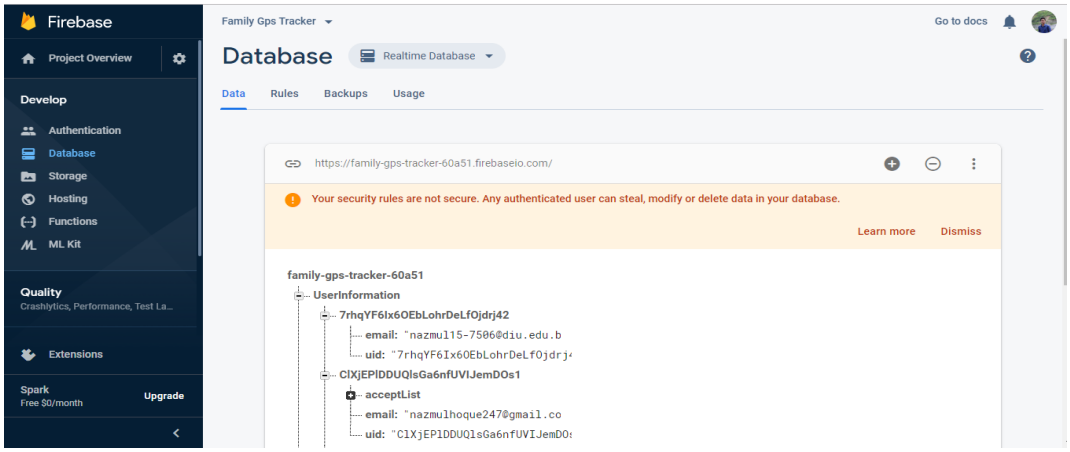

Figure 4.8: show the Options table of the app

CHAPTER 5

IPMPLEMENTATION AND TESTING

5.1 Implementation

System implementation projects are long difficult journeys by which organizations move from an old set of technology/methods/procedures to a new one. A software implementation method is a systematic structured approach to effectively integrate software based service or component into the workflow of an organizational structure or an individual end-user. The complexity of implementing product software differs on several issues. Examples are: the number of end users that will use the product software, the effects that the implementation has on changes of tasks and responsibilities for the end user, the culture and the integrity of the organization where the software is going to be used and the budget available. It is vital to select the right strategy for implementing the application to assure successful results.

5.2 Implementation Strategy

Since the software application consists of three modules as per in the high level architectural design, the implementation was done using iterative, incremental approach. Phase wise implementation process enables to execute by incrementally aligning the product with the end-user.

Direct Implementation

With this method of implementation the users stop using the manual system and start using the computer system from a given date.

The advantage of this method is that it is less costly in effort and time than any other method of implementation. The disadvantage of this method is that if problems occur the users do not have any alternative apart from returning to a manual system which may prove difficult if it has been discontinued.

5.3 Testing

System testing is a system of monitoring in all things in a software in input and output. Testing referred an important role in any software .If ,we testing any software we can find a software is performed to the user is good or bad .Testing also assure the quality assurance of a software. Unit testing is also important for verify authentication of coding step during the coding phase. Using the detailed design description as a guide, important paths are tested to uncover errors within the boundary of the modules. This testing were carried out when the programming stage automatically. The System testing is performance when all functional behavioral performance requirements.. Form level and as well as field level validations are performed in all the data entry screens. Program testing is nothing but testing a number of programs that form a cluster to achieve a certain goal .When program testing two kinds of errors will show which name is syntax errors and logical errors.

- Syntax errors when corrected if the program is executed firstly.
- Handle all data, unacceptable order of program statement etc.

There are various stages in any software testing .Now describing in very shortly.

- **Black Box Testing:**

Black Box testing is also known as behavioral testing .When the functionality of an application without peering into its internal structure/design/implementation is known as black box testing. In this testing when we give input and executed the program and give as an output then accrue black box testing. Here are some step of black box testing:

- At first, all requirements and specification are testing
- When we start black box testing then tester expected that all input executed an output.
- Incorrect or missing function

- **White Box Testing:**

White box texting is a method of software testing to test all internal structure, design a, coding, branches, path or condition. Programming knowledge is also essential to implement white box testing. We cannot show the internal variables when white box

testing. The test gives an pure idea when we execute the system. When the bug occurs then we removed all data.

- **Stress testing:**

The main purpose of stress testing how to improving of applicant system does not crash when the peak loads occur. We create a high volume of data with a very short of a instant time. A high volume of activities occurs in shoots when the simulates an online environment.

- **Deferent Size Android Device:**

To make sure user use this app different android device. We have tested our app different android device which are:

- API 21 (Lollipop)
- API 22 (Marshmallow)
- API 23 (Nougat)
- API 26 (Oreo)

Our App tested deferent version of android device UI and Structure are same. App work properly. In future we will add firebase test lab. If our app crush any device firebase send us a crush report message.

CHAPTER 6
CONCLUSION & FUTURE SCOPE

6.1 Conclusion

The design of this project Managing Crisis Situation is done with the help of XML, JAVA, FIREBASE, PHP and MySQL Database. Here User can send friend request, cancel friend request, access friend location. User can chat real-time . If user fall danger they can send call, message by just one click. User also can interact with app by voice command.

6.2 Future Scope

The project "Managing Crisis Situation" is handy enough to reduce the pain user. In future we will add some feature. We will try to work with Bangladesh police, fire service.

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