

Emergy-Link (Emergency App)

**Final Year Project Report
Group ID (CS-F18-09)**



**Supervisor
Muhammad Umer Khattak**

**Group Members
Syed Shahab Alam
01-134142-165
Noman Aziz
01-134142-126**

**Department of Computer Science
Bahria University, Islamabad.**

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Noman Aziz 01-134142-126
Syed Shahab Alam 01-134142-165

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Abstract

Emergency Link App is a very simple and effective way to handle emergency situations in your daily life such as Injury, fire, blast or loss of way. Emergency Link App is based on the GPS in your Smart phone and allows you to notify the Rescue Department to handle the situation and your emergency contacts like friends and family with your current location within seconds, which is a critical operation that becomes difficult or even impossible in case of emergency. In Case of emergency, Emergency Link App sends a distress message with your current location to the chosen emergency contacts. The message will be sent through your SIM like a text message. We are also looking to provide a personal detail form where people can store information like name, phone number etc. So in case of an emergency, his or her family can be informed with the help of that information well in time.

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Chapter 1

Introduction

1.1 Overview

Emergency Link App is a very simple and effective way to handle emergency situations in your daily life such as Injury, fire, blast or loss of way. Emergency Link App is based on the GPS in your Smart phone and allows you to notify emergency contacts with your current location within seconds, which is a critical operation that becomes difficult or even impossible in case of emergency. In Case of emergency, Emergency Link App sends a distress message with your current location to the chosen emergency contacts. The message will be sent through your SIM like a text message. We are also looking to provide personal detail form where people can store information like name, phone number, emergency contacts, email, password etc. so in case of an emergency, his or her family can be informed with the help of that information well in time. Moreover, it will also contain the safety measures details that can be taken in that particular case. Current location and distress message to the chosen contact and if someone needs Blood urgently then he/she send blood request to blood donation center for help.

1.2 Problem Statement

Emergency-Link is a rescue android application that runs when a victim person long press the volume-up button, then it sends a message and coordinates of the current location to family members and to Rescue Departments to inform about the emergency situation, so that, in time help can be provided to the victim. Other features of our system are: It also shows the shortest route to the nearby hospitals and police

stations, and a person also make a Blood Request to Blood donation Centers.

1.3 Problem Description

The problem of making a call to relatives in an emergency is not always easy and suitable and they also have an issue that they don't get nearby hospitals and police stations if they are new to that place and peoples who need blood can face difficulties that donors are not available. So an alternative is needed. Effect of this problem is that people may be unable to inform rescue and relative on time and don't get blood donation from someone. the impact of which is due to this problem, many of the people may have to sacrifice their life. a successful solution would be Emeryg Links will be the best solution to these problems and effects.

1.4 Project Objectives

- Specification: We utilize this app for security purposes; a user can inform any person or emergency department about its emergency, get nearby rescue places and able to make blood request to blood donation center.
- Measurable: The people use this application and broadcast their location and default message by simply pressing the combination of buttons.
- Achievable: We are working to secure the security of every person by getting their location, get nearby places in emergency and make blood request.

1.5 Project Scope

This app will surely become a great savior in its basic purpose is to save lives and serve the humanity. Emeryg Link App does intend to save lives and relies on mobile communication and on GPS system for now. The emergency message will be sent like text message through users SIM. We are also looking to provide personal detail form where people can store information like name and phone number. So in case of an emergency, his or her family/relatives can be informed with the help of that information well in time. We are trying to create a system that will provide the just one-click access to the people of the county to different emergency responding institutions. In our future versions we are also looking to provide an online registration

system where people of the country will register themselves so in case of any emergency his or her family can be informed well in time, and for sure their information will be kept secret. By pressing the volume up hard, our app will automatically send the current location and the default message to the submitted contacts numbers and if someone needs Blood urgently then he/she send blood request to blood donation center for help.

Chapter 2

Literature Review

In this chapter we discussed some of the research paper and work related to our project by other people to support our project. The information of all the papers added is related to our project that is about applications that rescue victims or anything related to it.

2.1 Related Work

Some of the existing systems for emergency are :

2.1.1 Disaster Alerts

In Disaster Alerts developers, proposed a methodology which is based circumstance crisis. This application is acquired by Pacific Disaster Centers World and gives clients a helpful continuous access to information about up and coming or dynamic perils far and wide and important catastrophe alerts. Catastrophe Alert shows occasions that are exceptionally perilous and conceivably unsafe to individuals and assets. Detailed data and danger reports can be gotten to and shared by clients. Almost 1.5 million clients all inclusive depend on this application. By pushing the Red Button the application will send your present position and address (as a Google Maps connect) to every one of the numbers found in your frenzy contact list, not just a solitary individual as the case with standard SMS. Such rundown can be a genuine lifeline in difficult. Now and again you don't have sufficient energy or the chance to pick between the few channels of correspondence permitted by the application, yet you have to ensure your frenzy message gets past. For this situation you have the Emergency

Dial Feature: your telephone dials the crisis number (which you can redo), while sending the frenzy messages by means of SMS, email, Twitter in a similar time.[1]

2.1.2 In Case of Emergency

The ICE (In case of an emergency) application takes and stores significant data that can be utilized in time of crisis by dynamic res-contemplates or clinic staff to address the circumstance. It incorporates crisis contacts, individual data, ailment and some other significant details. The application enables you to utilize it notwithstanding when you cannot open the telephone while being stuck in a mishap. After losing your telephone, the ICE lock screen encourages you with whenever discovered message. Application is accessible in 13 dialects with the goal that you can change the language while heading out to outside areas. This application is a standout amongst the best applications which stores the basic data for first res-considers and clinic staff to use if there should be an occurrence of a crisis including your contacts, protection data, your specialists name and contact number, immunizations, sensitivities and restorative history. This application can be gotten to notwithstanding when your telephone is bolted. This crisis application is accessible for all the advanced mobile phones and it comes in 13 distinct dialects.[2]

2.1.3 First Aid by American Red Cross

The American Red Cross First Aid application gives you master guidance to deal with your ordinary medical aid crisis circumstances by your own. This application guides you by straightforward well ordered guidelines that what best you can do to spare someones life. Heart stroke and related substance are incorporated into learning and intelligent test, which enables you to acquire identifications that you can impart to your companions and hotshot your lifesaving information. Thus, this is a standout amongst the best crisis applications for advanced cells. Crisis is, well, a crisis application from the American Red Cross. It works in both English and Spanish dialects. That settles on it a decent decision for fundamentally any North Americans (with the exception of French Canadian, clearly). The application includes an assortment of alarms, including essentially any fiasco circumstance you can consider from severe climate to quakes and out of control fires. It additionally has a worked in electric lamp, strobe light, capable of being heard caution, and a guide of adjacent Red Cross sanctuaries. It even has Android Wear support in the event that you need that. The American Red Cross additionally has explicit applications for things like storms, seismic tremors, emergency treatment, pet medical aid, and a lot of others.[3]

2.1.4 Medical ID

Medical ID is one of the better crisis applications. It covers the essentials like ICE data, restorative contacts, crisis, and other such things. You can likewise include things like birthday, hypersensitivities, blood classification, and current prescriptions. The application additionally includes a tenacious notice on the lock screen on the off chance that crisis administrations need to see it. This one is best for those with constant ailments or irregular conditions or hypersensitivities. It additionally has an exceptional rendition with more highlights and some superb Material Design. With advanced cells enabling you to make a Medical ID, you can get quick assistance in a crisis circumstance. With this Medical ID that you can access from your telephones Emergency Call screen, individuals can recognize you as known and allude you restorative record. a pre-introduced well being application gives you a chance to make the ID. You can see a people Medical ID by tapping on Emergency Call on the lock screen. The ID will spring up with their subtleties, for example, Full name, blood classification, crisis contact, and so on.[4]

2.1.5 Life360

Life360 is another application that encourages families to keep in contact and associate and salvage the individuals who are hazardously caught. Family can make a private system to think about one another areas and security. This application is a light help for individuals who are gotten a midst a calamity and need to contact their friends and family. Life360 causes them contact their kin and disclose to them how they are. To build up quick association with your family by means of content, email or voice call and advise them about your present area, the application accompanies a frenzy ready element. Empower battery sparing mode for extended crises. You don't have the foggiest idea to what extent the power will be out after a sea tempest or to what extent it'll be before you achieve another electrical plug. Try not to blow your battery load on senseless things like synchronizing your email. Power spare modes turn that stuff off to shield your battery from depleting too rapidly. Moreover, we can't suggest outside battery packs enough. They're moderately reasonable and can give some genuinely necessary power. The majority of them fit in a knapsack or even a pocket now and again. It's not troublesome having one around consistently. Utilize your associations with the best of its bit of leeway. The telephone towers might be down, yet that doesn't mean your Wifi is (and the other way around). Utilize different devices on your telephone. Each telephone nowadays has a camera streak that is usable as a spotlight. GPS can support experts or friends and family pinpoint your position.[5]

2.2 Limitation and Drawback

The problem of Making a call to relatives in an emergency is not always easy and suitable and they also have an issue that they don't get nearby hospitals and police stations if they are new to that place and peoples who need blood can face difficulties that donors are not available. So an alternative is needed Affects Effect of this problem is that people may be unable to inform rescue and relative on time and don't get blood donation from someone. the impact of which is Due to this problem, many of the people may have to sacrifice their life. a successful solution would be Emeryg Links will be the best solution to these problems and effects.

Table 2.1: Limitation and Drawback

Product	Author Name	Present Situation	Proposed Solution
Disaster Alerts	Kelliher Samets Volk	User have to open the app and then trigger for help.	User can send emergency message and location without unlocking the phone.
In Case of Emergency	Sylvain Lagache	ICE provide emergency button on locked screen which may be untouchable when user having blood on his hands.	Our app provides volume-up button to avoid this situation.
First Aid by American Red Cross	Global Disaster Preparedness Center (GDPC)	FAARC doesn't provide background service and location of victim.	Our app provides pinpoint location of the victim.
Medical ID	Laurent Pellegrino	Medical ID doesn't provide the location of nearest hospitals, police station, ATM's etc	Our application gives the user nearest location of hospitals, police station, ATM's etc
Family Locator GPS Tracker	Life360	FLGT doesn't give back end services and area of injured individual.	Our application gives pinpoint area of the person in question.

2.3 Proposed Solution

As above mention we are working on emergency or rescue domain in which people can feel secure with the Android device. This app is very helpful in daily life emergencies, people feel ease to inform their family members when they are in some critical situations. At present we are creating an Emergency app name as EMERGENCY-LINK, which easily inform your family and rescue when you are in danger. Simply pressing Volume Up buttons of your Android device and your current location and a default message will be transmitted to your loved ones and to rescue to you on time, and the location of nearby hospitals and police stations is displayed. Now remain secure all the time.

Chapter 3

Requirement Specification

3.1 Proposed System

We are working on emergency or rescue domain in which people can feel secure with the Android device. This app is very helpful in daily life emergencies, people feel ease to inform their family members when they are in some critical situations. At present we are creating an Emergency app name as EMERGE-LINK, which easily inform your family and rescue when you are in danger. Simply pressing Volume Up buttons of your Android device and your current location and a default message will be transmitted to your loved ones and to rescue to you on time, and the location of nearby hospitals and police stations is displayed. Now remain secure all the time.

3.2 Existing System

Likewise you read the last chapter, when people are in some sort of emergency they got into the panic situation and don't know how to deal with this situation and they got certain damages. And if someone informs their family members to help him, they don't know his/her pinpoint location, and also a big issue that the people don't know where the nearby hospitals or police stations to get instant help, And getting blood in emergency is critical. In previous apps like RESQ (made by Wi-tribe) have not certain features like the pinpoint location of the individual who is in an emergency is not exposed and don't indicate the nearby placement of any hospitals or police station.

3.3 System Requirement Specifications:

- The application will start.
- The user must add the phone numbers of any specific person to whom the default message will be sent at the time of trouble
- There is need to use the volume up button to send the location and the default message to the given numbers.
- The inflicted person must hold an active GSM.
- Our app requires 4.0.2 or above Android version.
- The operating system must have more than 512 MB's of RAM.

3.3.1 Functional Requirements:

- Registration: Registration module is for storing full name, Email, password, phone-number so that in case of an emergency at one click user of the application will be able to inform chosen contacts, this will also serve as a login for the user.
- Location: Location tracking is the basic and must require functionality, App should automatically get location GPS location or location provided by the service provider will be used. And for sure in order to get GPS location internet is also required.
- Messaging: The application will also have a messaging module in order to user send a distress message to the given submitted numbers. By requesting for the blood in the app, our app will ask about the category of the required blood as well as the number of blood bags that are required and in which particular hospital are being required.
- Blood Request: From this application, the user can request for blood donation any time. Just fill the basic detail form and send the request to blood donation center, after that donation center contacts you for help or providing their services to you.
- Confirmation: The user will get the verification code after signing up for our application.

3.3.2 Non-Functional Requirements:

1. **Performance:**

System should perform accordingly to the use cases and other flow diagrams, as the system will send message when volume-up button pressed

2. **Operability:**

The system should be easy, feasible. And the user could use it without any difficulty

3. **Reliability:**

If in some state a failure occur the system should handle it without the user getting to know about it.

4. **Response Time:**

The response of all the operation should be at least good.

5. **Error Handling:**

Response to user errors and undesired situations should be taken care of to ensure that the system operates without halting.

6. **Safety and Robustness:**

The system must be able to avoid or tackle disastrous action. In other words, it should be foolproof.

7. **User-friendly:**

The system should be easy to learn and understand. A native user can also use the system effectively, without any difficulties.

8. **Safety Requirements:**

The system must be able to resist any crashes that can occur or any virus attacks.

9. **Maintainability:**

The system must have the capability to enhance or improve the system.

10. **Security Requirements:**

As this system is totally related to a communication system, so user's privacy and his personal details must be kept secret and secure. All communication record should be kept secret.

3.4 Use Case:

A use case is a list of actions or events which define the interaction between the actors and system to achieve a goal. The main use case diagram of our system is shown in 3.1 The actors in this use-cases are the persons who will be using the system.

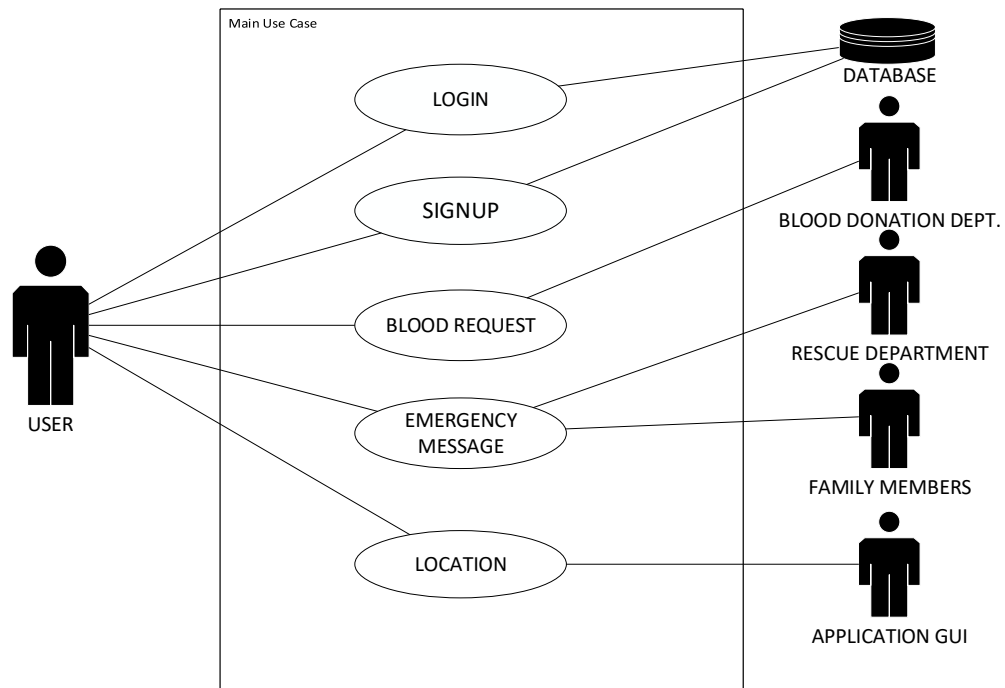


Figure 3.1: Main Use Case

The individual use cases are presented below, starting from figure 3.2 to figure 3.6 with their respective specification table

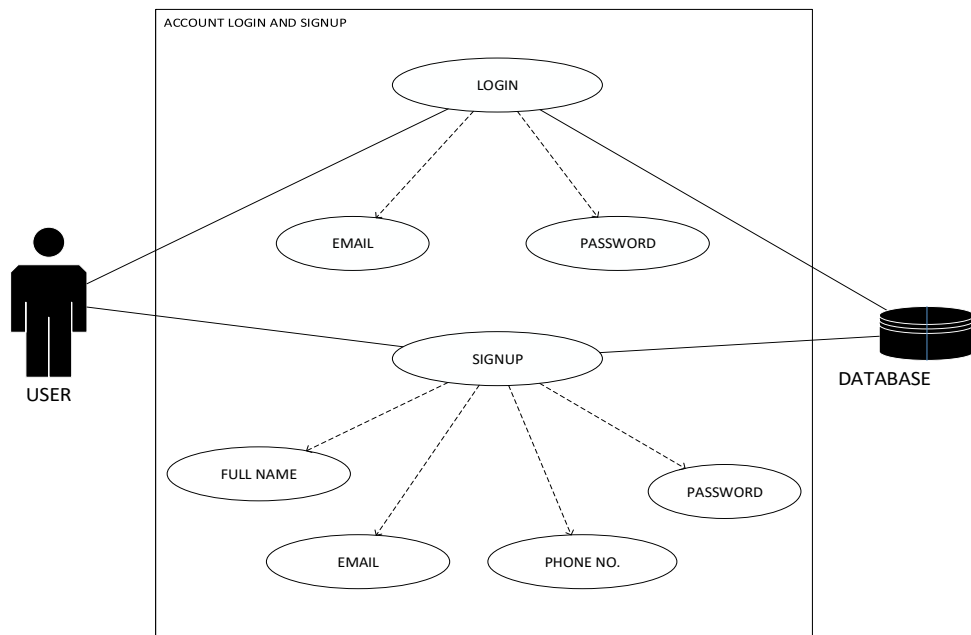


Figure 3.2: Account login and signup

Table 3.1: Starts Application

Use Case Field	Description
Use-Case Name	Account
Use-Case ID	UC-01
Actors	User and Database
Use-case Description	The user will register.
Preconditions	User Must have an Internet
Input Summary	User opens the application.
Output Summary	The application will be started and user can interact with application.

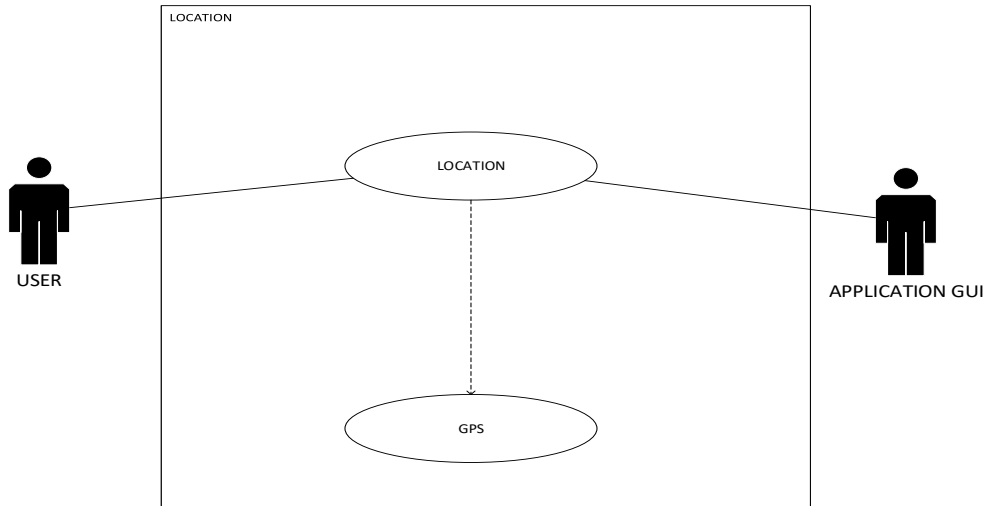


Figure 3.3: Location Use Case

Table 3.2: Location Use Case

Use Case Field	Description
Use-Case Name	Location Tracking
Use-Case ID	UC-02
Actors	User, Application GPS
Use-case Description	The user will long press the volume-up button. The system will pick GPS Location.
Preconditions	The user should have an android based phone which should be connected to the internet, GPS enabled.
Input Summary	User press hard volume button.
Output Summary	The application will be trace user location

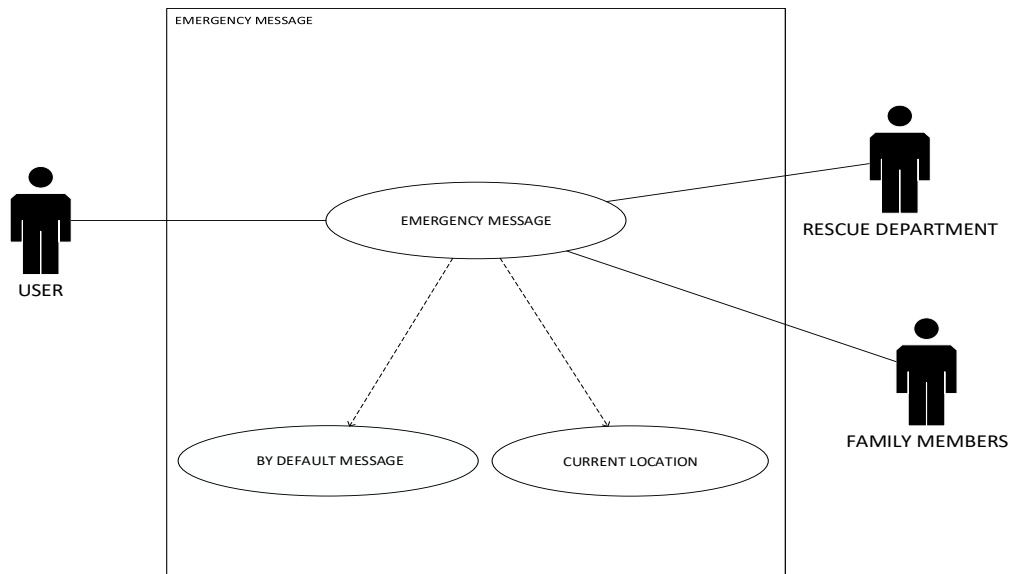


Figure 3.4: Emergency Use Case

Table 3.3: Emergency Help

Use Case Field	Description
Use-Case Name	Emergency help message
Use-Case ID	UC-03
Actors	User, Application, Rescue, family members
Use-case Description	The user will press button for family members and rescue. The system sends an alert message and location to family and rescue.
Preconditions	User have balance for SMS
Input Summary	The user will long press the volume up button.
Output Summary	Emergency Message is sent to family and rescue departments.

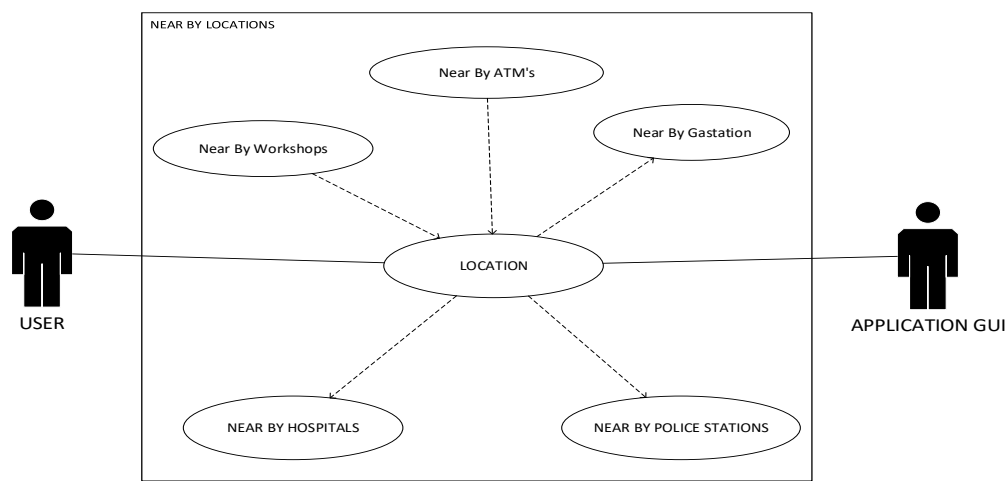


Figure 3.5: Module Selection

Table 3.4: View Map Use Case

Use Case Field	Description
Use-Case Name	View Location
Use-Case ID	UC-04
Actors	User, Google(API), family, rescue department
Use-case Description	View the exact location of victim.
Preconditions	The user should have an android based phone which should be GPS and internet enabled
Input Summary	User hold the volume button up.
Output Summary	Location on Google map will be shown

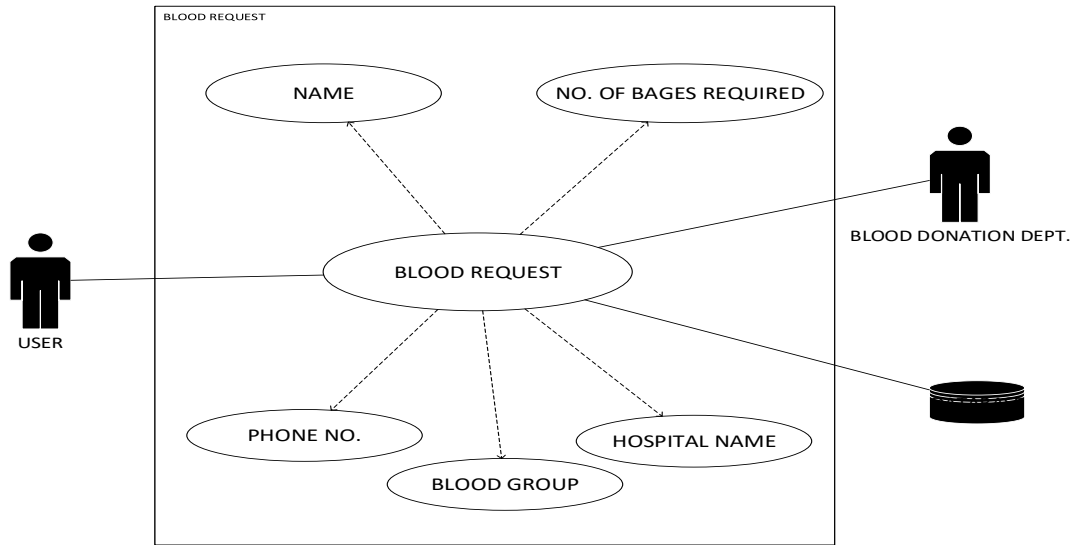


Figure 3.6: Blood Request Use Case

Table 3.5: Blood Request

Use Case Field	Description
Use-Case Name	Suggestion Selection
Use-Case ID	UC-05
Actors	User, Database, Blood Donation Center
Use-case Description	To inform blood donation center that this user needs blood.
Preconditions	User Must have an Internet and balance for Sms
Input Summary	Fill the form.
Output Summary	Blood request is sent to blood donation center by the user.

Chapter 4

Design

4.1 System Architecture

Figure 4.1 shows the system architecture of our application. When a victim person long Press the Volume-up Button, then it sends a message and coordinates of the current location to family members and to Rescue Departments to inform about the emergency situation, so that, in time help can be provided to the victim. Other features of our system are: It also shows the shortest route to the nearby hospitals and police stations, workshops and ATM's, and a person also makes a Blood Request to Blood donation Centers.

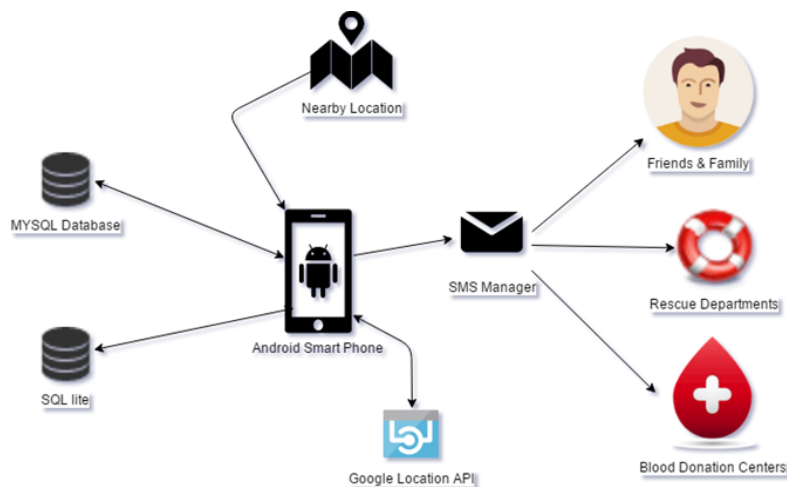


Figure 4.1: Architectural diagram

4.2 Methodology

Figure 4.2 shows the system architecture of our application. When a victim person long Press the Volume-up Button, then it sends a message and coordinates of the current location to family members and to Rescue Departments to inform about the emergency situation, so that, in time help can be provided to the victim. Other features of our system are: It also shows the shortest route to the nearby hospitals and police stations, workshops and ATM's, and a person also makes a Blood Request to Blood donation Centers.

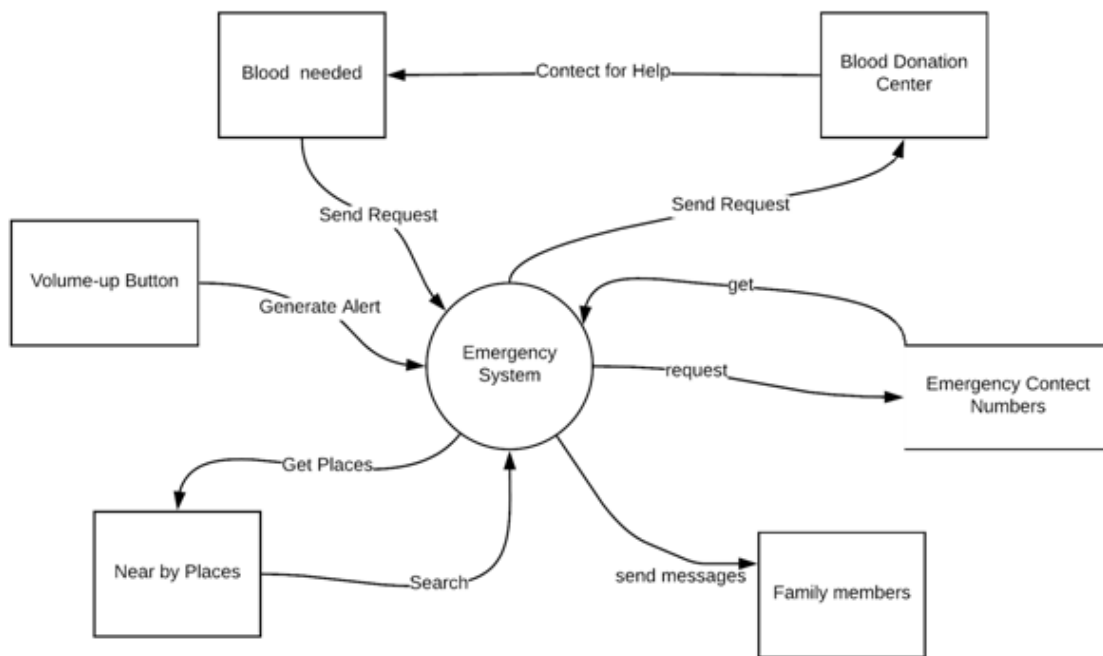


Figure 4.2: Design methodology

4.3 High Level Design

This section describes in further detail elements discussed in the Architecture. Figure 4.1 is about high level context diagram which shows the interaction of user and application according.

4.4 Process Model

Activity diagram is basically a flow chart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. It represents the steps about our project working.

- User login process model

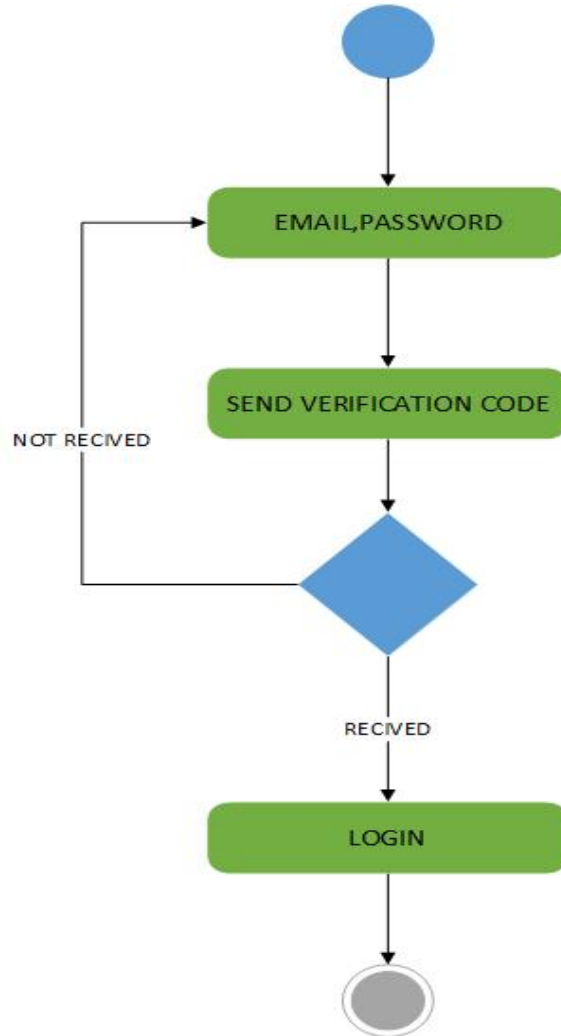


Figure 4.3: login and signup model

- User registration process model

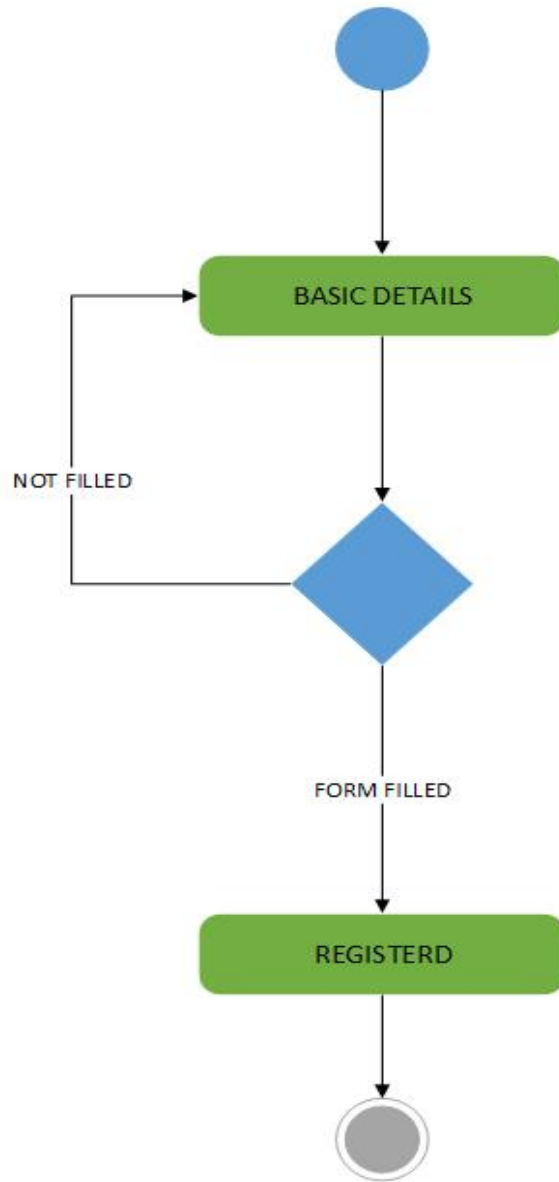


Figure 4.4: Activity Diagram of Signup

- Blood request process model

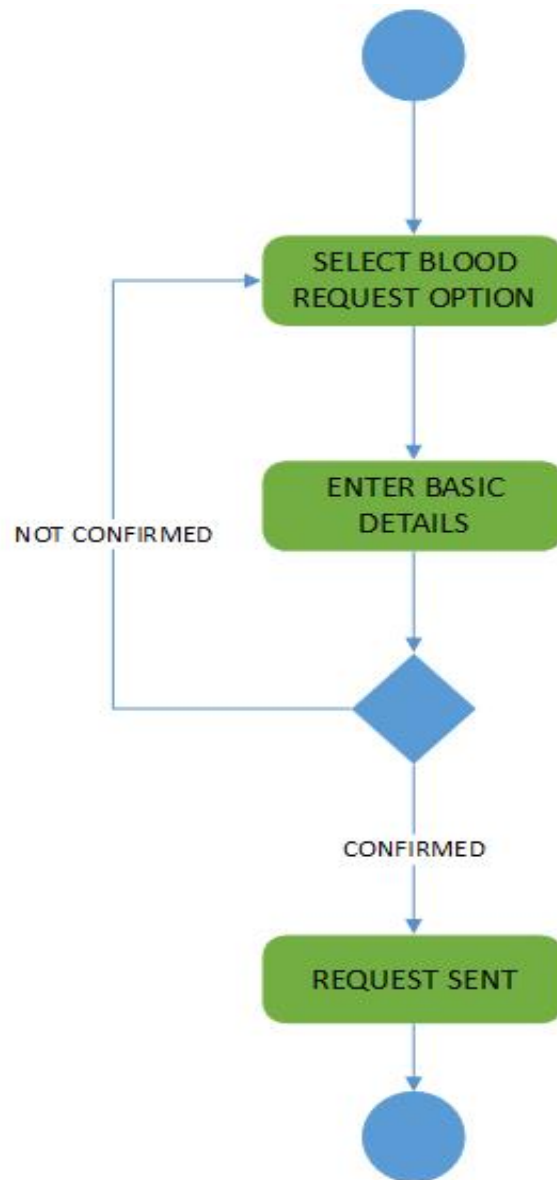


Figure 4.5: Activity Diagram of Blood Request

- Sending alert message process model

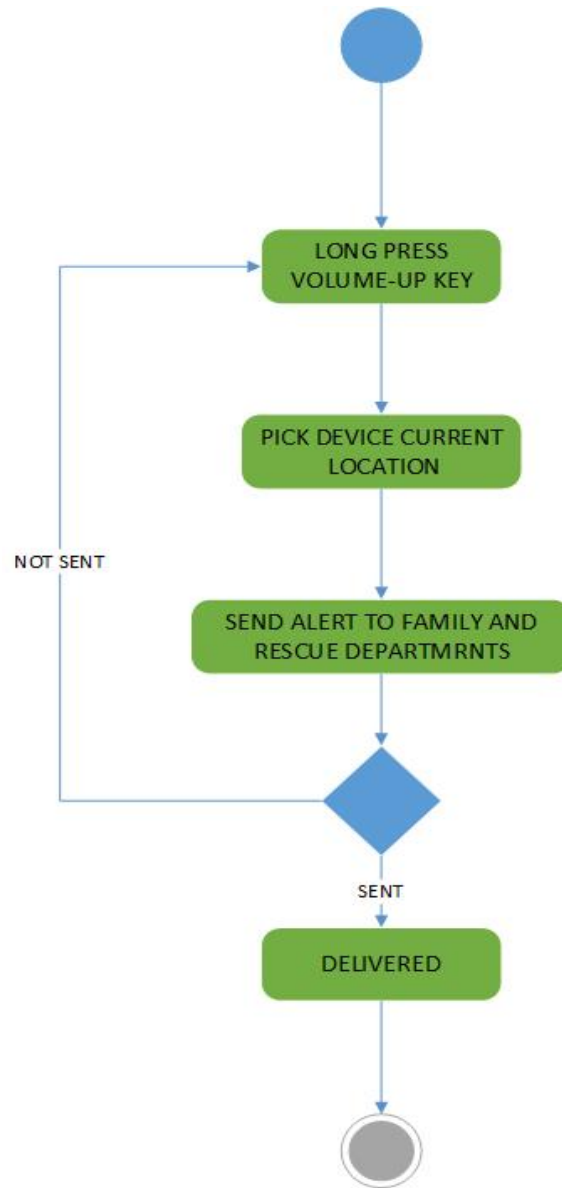


Figure 4.6: Activity Diagram of Sending Alert message

- Navigation process model

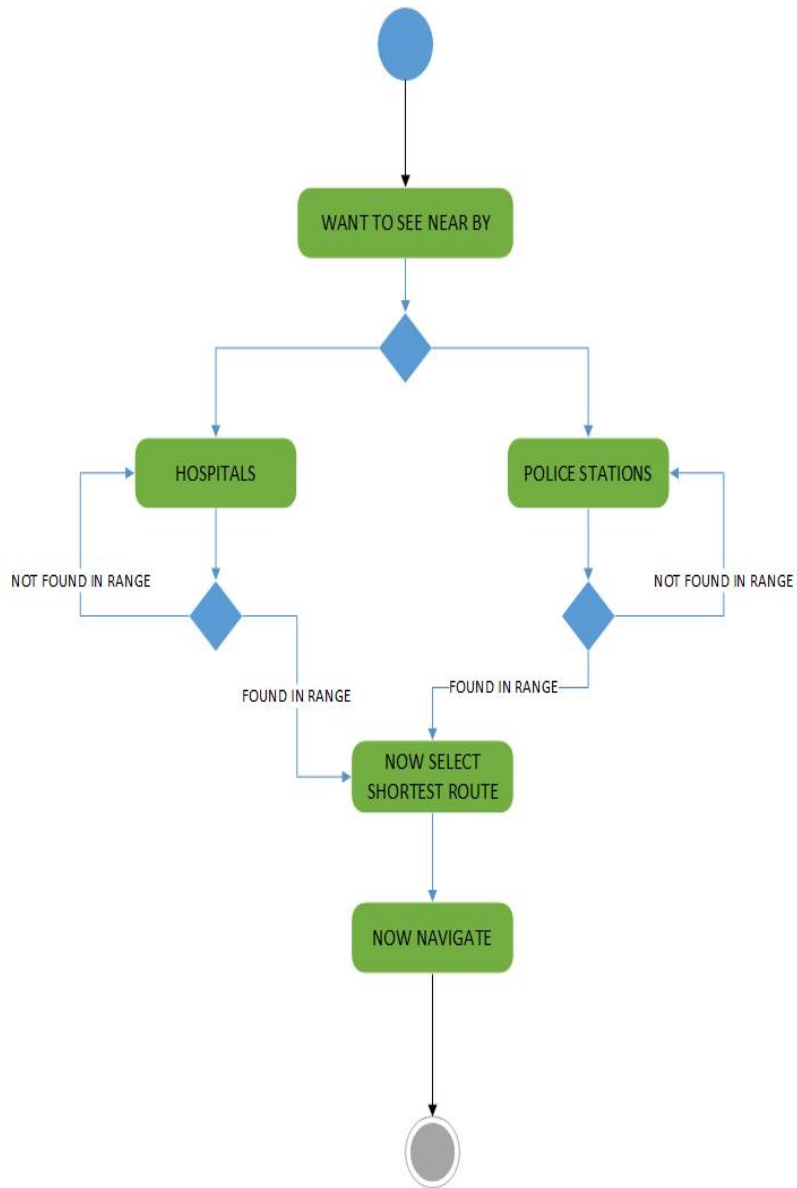


Figure 4.7: Activity Diagram of Sending Open Navigation

4.5 Entity Relation Diagram

The Entity Relation Diagram is.



Figure 4.8: ERD

4.6 Class Diagram

The Class Diagram is.

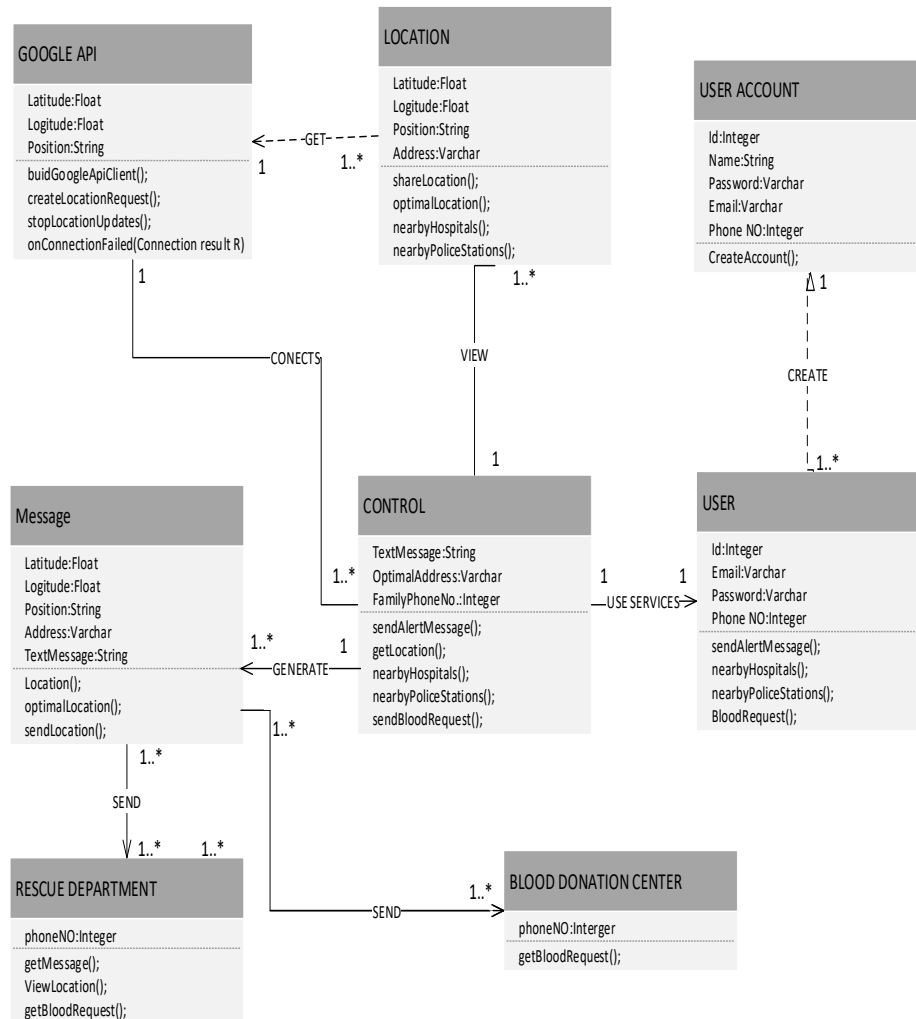


Figure 4.9: Class Diagram

4.7 Low Level Design

This section provides low-level design descriptions that directly support construction of modules.

4.8 Sequence Diagrams

This diagram depicts the objects and classes involved in the project and the sequence of messages exchanged between the objects needed to carry out the functionality of the project.

- Login Activity Diagram

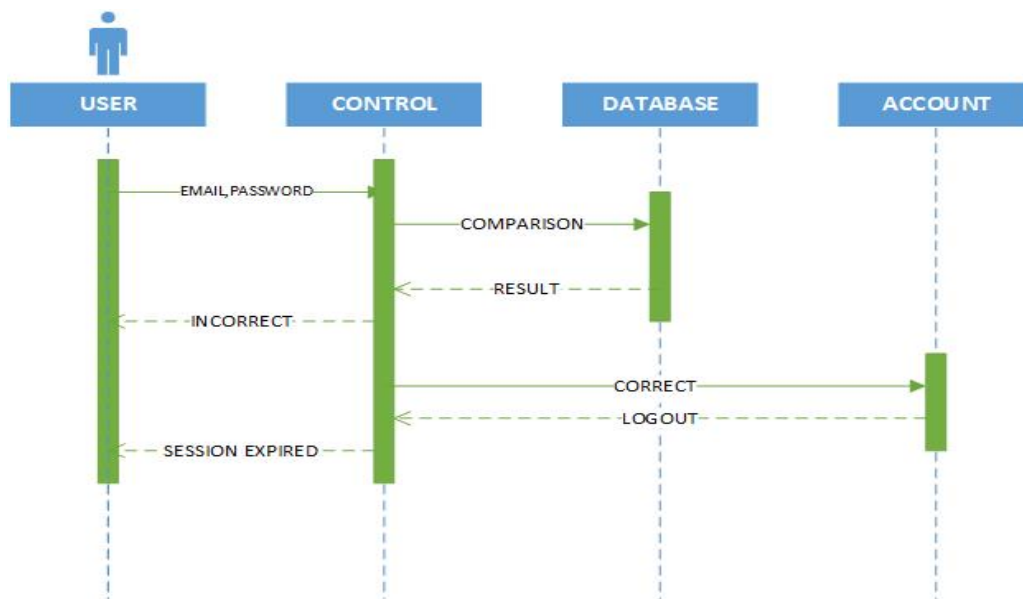


Figure 4.10: Login Sequence Diagram

- Sending Sms Alert Sequence Diagram

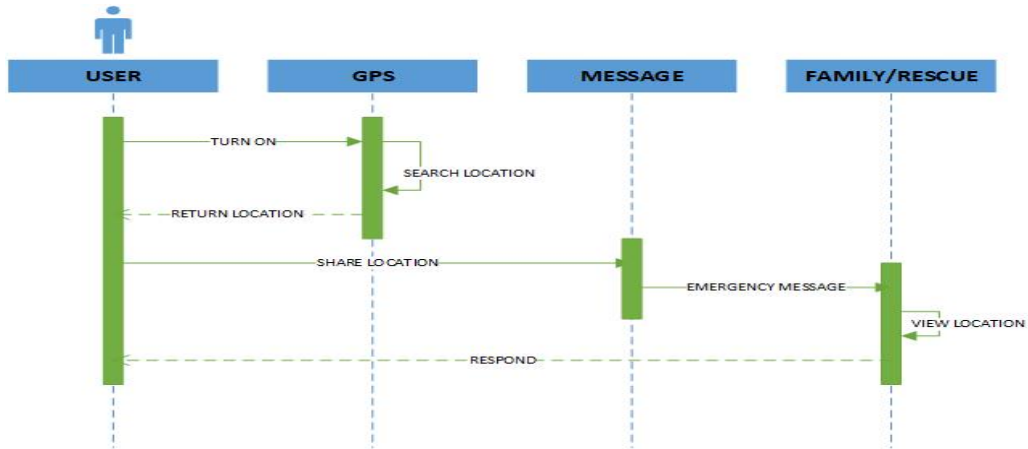


Figure 4.11: Sending Sms Alert

- Nearby Location Sequence Diagram

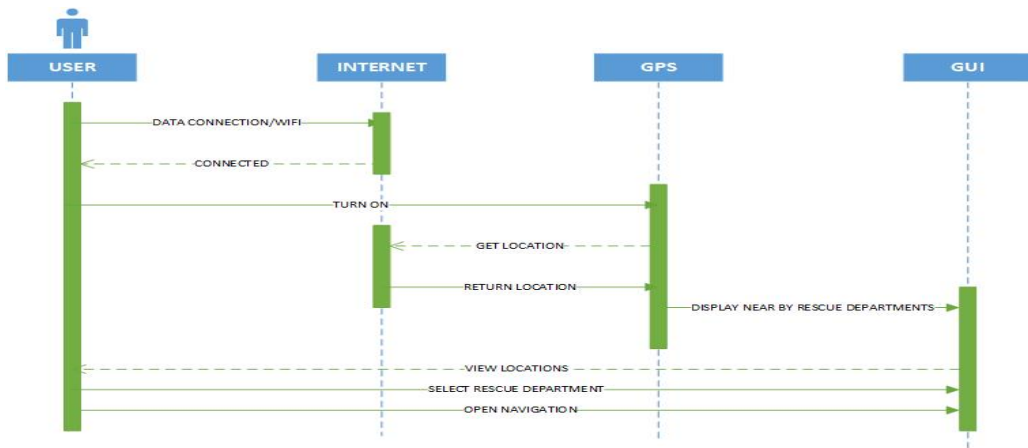


Figure 4.12: Nearby Location

- **Blood Request Sequence Diagram**

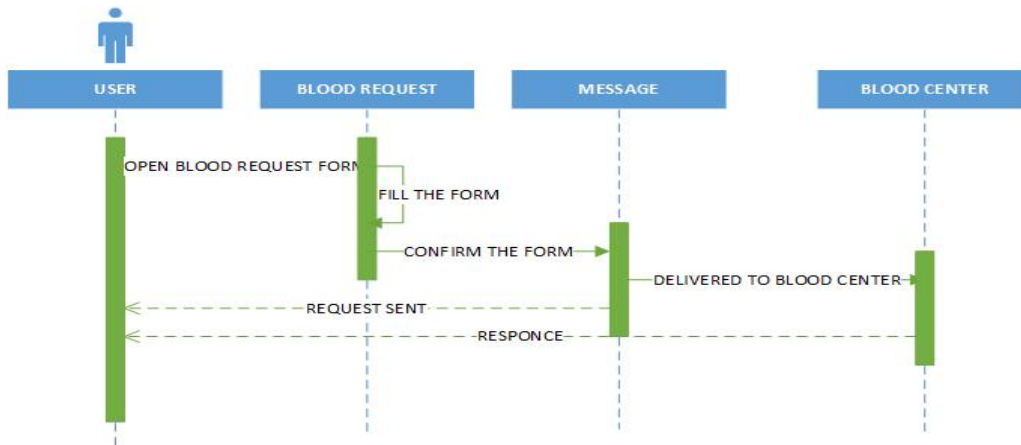


Figure 4.13: Sequence Diagram of Sending Blood Request

4.9 GUI Design

Graphical UIs (GUIs) are structures control boards and faces voice-controlled interfaces include oral-sound-related connection, while signal based interfaces witness clients drawing in with 3D configuration spaces by means of real movements. UI configuration is a specialty that includes building a basic piece of the client experience clients are quick to pass judgment on structures on ease of use and agree-ability. Fashioners center around structure interfaces clients will discover profoundly usable and proficient. Consequently, a careful comprehension of the settings clients will wind up in when making those decisions is significant. You ought to make the hallucination that clients aren't collaborating with a gadget to such an extent as they're endeavoring to accomplish objectives straightforwardly and as easily as would be prudent. This is in accordance with the immaterial idea of programming rather than saving symbols on a screen, you should expect to make the interface successfully imperceptible, offering clients gateways through which they can collaborate legitimately with the truth of their undertakings. Concentrate on continuing this "enchantment" by giving clients a chance to discover their way about the interface naturally the less they see they should utilize controls, the more they'll drench themselves.

- **Login Form**

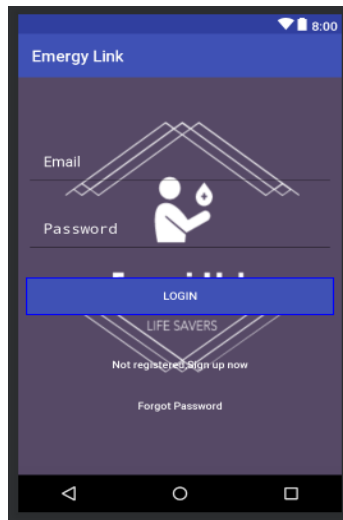


Figure 4.14: GUI-Login Form

- **Registration Form**

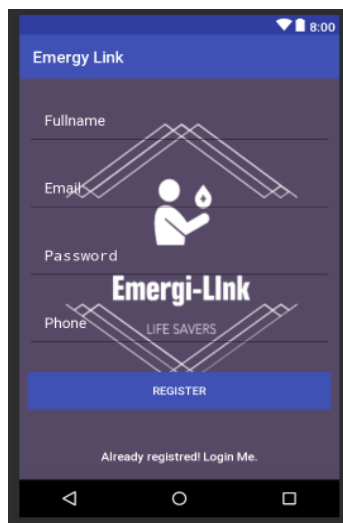


Figure 4.15: GUI-Registration Form

- **Sms Verification**

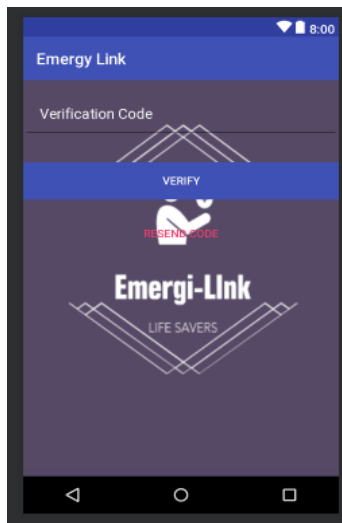


Figure 4.16: GUI-Sms Verification

- **Blood Request**

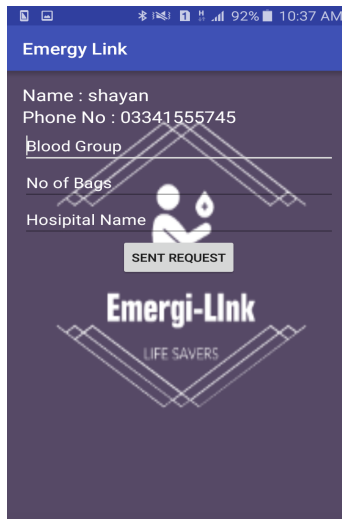


Figure 4.17: GUI-Blood Request

Chapter 5

Implementation

Implementation is the carrying out, execution, or practice of a plan. Implementation is a way, or any design, concept, specification, and standard or policy for doing something. Purpose of this Chapter is to describe the implementation of final year project Emergy Link. In this chapter focuses on the phase of implementation. Design document and SRS provides the basic information of this phase. This chapter will explain the implementation, by explaining tools, languages, and coding.

5.1 Implementation Description

5.1.1 Implementation Environment

For developing this application the following Software will be required:

- I. Database : SQLite, MySQL
- II. Tools : Android studio 3.1
- III. Technologies used : Java, XML
- IV. Debugger : Android IntelliJ.platform (3.0.1 version)

In the analysis model, Entity Relationship Diagram is used to understand the system under consideration with respect to entities involved and their relationships. Each entity is documented by extracted its attributes, cardinality, and modality. Entity Relationship Diagram, otherwise called ERD, ER Diagram or ER model, is a sort of basic outline for use in database structure. An ERD contains various images and connectors that envision two significant data: The real substances inside the framework scope, and the between connections among these elements.

5.2 Development Tool

5.2.1 Android Studio

Android Studio is the official Integrated Development Environment (IDE) for Android app development. On top of IntelliJ's powerful code editor and developer tools, Android Studio offers even more features that enhance your productivity when building Android apps, such as:[6]

- A flexible Gradle-based build system
- A fast and feature-rich emulator
- A unified environment where you can develop for all Android devices
- Instant Run to push changes to your running app without building a new APK
- Extensive testing tools and frameworks
- Lint tools to catch a performance, usability, version compatibility, and other problems

5.3 Code Development

5.3.1 Location Manager

We used location provider as this class provides access to the system location services. These services allow applications to obtain periodic updates of the device's geographical location, or to fire an application-specified Intent when the device enters the proximity of a given geographical location. You do not instantiate this class directly; instead, retrieves it through permissions. If your application only has the course permission then it will not have access to the GPS or passive location providers. Other providers will still return location results, but the update rate will be throttled and the exact location will be obfuscated to a coarse level of accuracy. This provider is used for services that work with the user's location but doesn't want to waste battery life as you pointed out. For example, Google Latitude sends your current location to a web service to let your friends know where you are. If this service would request a GPS fix every 5 minutes the device battery will be empty

very fast. If the service requests a passive location provider a location is sent every time Google maps is started and a fix acquired or some other apps initiates a location provider update and the service can act on location data without spending additional power on the location updates. If you need correct location data at an exact moment using this provider won't help. For most things that are not running in a background service, this location provider is useless because it will only send updates if other apps trigger an update of the user location.[7]

5.4 Google API

5.4.1 FusedLocationProviderApi

Public interface FusedLocationProviderApi. The main entry point for interacting with the fused location provider. The methods must be used in conjunction with a GoogleApiClient. If the app can continuously track location, it can deliver more relevant information to the user. For example, if your app helps the user find their way while walking or driving, or if your app tracks the location of assets, it needs to get the location of the device at regular intervals. As well as the geographical location (latitude and longitude), you may want to give the user further information such as the bearing (horizontal direction of travel), altitude, or velocity of the device. This information, and more is available in the location object that your app can retrieve from the fused location provider. [7]

5.4.2 Request Location Updates

Before requesting location updates, the app must connect to location services and make a location request. The lesson on Changing Location Settings shows you how to do this. Once a location request is in place we can start the regular updates by calling requestLocationUpdates().[7]

5.4.3 Firebase

Firebase is Formerly known as Google Cloud Messaging (GCM). Firebase Cloud Messaging (FCM) is a cross-platform Android, iOS, and Web solution that lets you safely send and receive messages and notification at zero cost.[8]

- Using Firebase we can send unlimited upstream/downstream messages
- Using Firebase we can send messages to individual devices or a user segment

- Using Firebase we can Handle all aspects of queuing and delivery
- Using Firebase we can Optimize for battery efficiency.

5.4.4 SMS Manager

We used SmsManager for sending background messages. Manages SMS operations such as sending data, text, and PDU SMS messages. Get this object by calling the static method getDefault(). For information about how to behave as the default SMS app on Android 4.4 (API level 19) and higher, see Telephony.[9]

5.5 Summary of Functional Requirements

These were the requirements for implementation of application

5.5.1 Registration

Registration module is for storing Name, email, phone number and password so that in case of an emergency at one click user of the application will be able, Relatives and. This will also serve as a login for the user.

5.5.2 Location

Location tracking is the basic and must require functionality, App should automatically get the location. Common places like user?s optimal location, Otherwise GPS location or location provided by the service provider will be used. And for sure in order to get GPS location internet is also required.

5.5.3 Messaging

Long press the volume up button and system get your current GPS location and default alert SMS that is sent to rescue and relatives.

Chapter 6

Testing

6.1 Scope of Testing

The scope of this test plan is to make sure that all the requirements are met and developed. We also need to make sure that all the existing App services are kept during the development of the requirements and they still work as required. Both scheduled and unscheduled test plan changes will be done and changes will be documents in this document by changing the version numbers of the document. All the documents and sources referenced in the Test Plan are below:

- Project Proposal document
- Software requirement specification document
- Software design specification document

6.2 Graphical User Interface

Graphical user interface testing is a process to evaluate how easily a user can interact with the application using the interface. The graphical user interface should be user friendly so that the user with no knowledge of android OS can easily understand how to use the application by simply reading the text or images on buttons. The text on the buttons and the header should visible, so that users can easily read the text. As shown in ?g 6.1. The buttons are clearly visible to users, as buttons includes both the pictures and text so they will provide ease to users in understanding the purpose of buttons. We used picture as a button in interface so that the user can

easily understand what to do. The Buttons size is big so no problem for users for tapping.

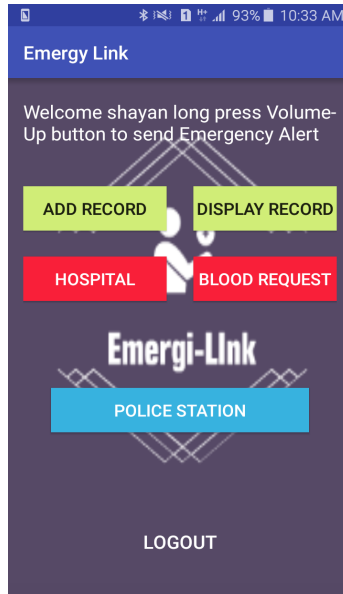


Figure 6.1: GUI-Home Screen

6.3 Compatibility testing

Compatibility testing is a non-functional testing. Compatibility testing deals with the platform on which the application can be loaded. Android is used as the operating system of this application.

6.4 Security testing

This testing technique is used to determine if application has some security measures. Our application does not hold any private data of the user so our application does not require any security measures.

6.5 Unit testing

Unit testing means testing in which each function independently verify correct processing in a standalone environment. Unit Test consists of testing individual programs or subroutines as they are written instead of testing the entire system after it has been written. The testing of the smaller building blocks is done first and then these blocks are combined and tested. Unit testing will be conducted to verify the implementation of each necessary requirement changes. The requirements will be tested and verified by members only. After any new requirement is added, unit testing will be done for these features.

6.6 Installation testing

Installation testing is a process of running applications on different platforms. The application will be stored in google play store in future. For now on an APK of our application is required. Once the APK is copied to the smart phone it will ask for the installation. After the installation, application is ready to useThe goal of System Testing is to ensure that the system performs as per the functional requirements specified by the client. A system test covers the testing of functions within the system. System testing is performed once integration testing has been completed.

6.7 Test Plan Strategy

These test plans should be able to show all the Emergy Link App functionality and features defined in the requirements document. For each level of testing, Then Feedback of those users is taken to identify the issues related to the usability, so that these issues could be resolved. The main purpose of testing is to examine whether the developed software meets the required quality standards or not a separate test plan is prepared with the following set of deliverable:

- Test Case Number
- Features to be tested
- Items to be tested
- Pass / Fail criteria
- Input

- Output
- Result

6.8 Test cases

6.8.1 Test Case for Running the Application

Table 6.1: Test Case 01

Test Case id	01
Test Case description	Running the application
Initial State	
Input	Select the application from the android launcher on the device.
Expected output	The application should be launched without errors.
Output	The application is launched without any errors.
Status	Success

6.8.2 Test Case for Sign up

Table 6.2: Test Case 02

Test Case id	02
Test Case description	Testing of proper input method of Sign up.
Initial State	
Input	Name, Age, phone no. , blood group and contacts in textbox.
Expected output	Correct user information
Output	Unknown Expectation occur
Status	Failed

6.8.3 Test Case for log in

Table 6.3: Test Case 03

Test Case id	03
Test Case description	Testing of proper method of login.
Initial State	Running application
Input	user email and password.
Expected output	Correct user information
Output	log in to application
Status	Success

6.8.4 Test Case for Module Selection

Table 6.4: Test Case 04

Test Case id	04
Test Case description	Testing Module selection
Initial State	
Input	Selection of any emergency type.
Expected output	After the selection, User interface of the selected emergency should be opened.
Output	User interface of selected module don't open
Status	Failed

6.8.5 Test Case for Add Contact

Table 6.5: Test Case 05

Test Case id	05
Test Case description	Testing Module Add Contact
Initial State	Home Screen
Input	Name and Contact number.
Expected output	After pressing save button, Contact should be stored in database.
Output	Contact stored successfully.
Status	Success

6.8.6 Test Case for Checking Interface

Table 6.6: Test Case 06

Test Case id	06
Test Case description	All the button should be clickable and perform some activity.
Initial State	Application should be running.
Input	Click the buttons.
Expected output	All buttons should be clickable and perform respectable activity.
Output	All buttons are clickable and performing their respective activity.
Status	Success

6.8.7 Test Case for Sending Alert Message

Table 6.7: Test Case 07

Test Case id	07
Test Case description	Testing of Sending alert message.
Initial State	User should be in select option module.
Input	Pressing the button.
Expected output	After pressing volume up button, Location of user and alert message should be sent.
Output	Alert message sent.
Status	Success

6.8.8 Test Case for Nearest Hospitals

Table 6.8: Test Case 08

Test Case id	08
Test Case description	Testing of displaying location of hospitals.
Initial State	User should be in select option module.
Input	Pressing the button.
Expected output	Location of nearest hospitals should be accurate.
Output	Location of nearest hospitals.
Status	Success

6.8.9 Test Case for Nearest Police Stations

Table 6.9: Test Case 09

Test Case id	09
Test Case description	Testing of displaying location of police station.
Initial State	User should be in select option module.
Input	Pressing the button.
Expected output	Location of nearest police stations should be accurate.
Output	Unexpected error occur.
Status	Failed

6.8.10 Test Case for Blood Request

Table 6.10: Test Case 010

Test Case id	10
Test Case description	Testing of blood request.
Initial State	User should be in suggestion module.
Input	Pressing the button.
Expected output	Blood request should be sent.
Output	Request sent.
Status	Success

Chapter 7

Conclusion

7.1 Conclusion

Android Application is an interesting, exciting field to work on. The main motive behind the project is to serve humanity which made us more motivated for developing Emergency Link. The purpose of the project was to develop an android based application for rescue needy person. Making people secure while staying home or moving somewhere was the main objective of our application. It was a new experience of developing an application for help needy people. The project also comes up with its own set of difficulties as we are new to the android based application, and lot of research was done to understand the work of android studio. Furthermore to understand the concepts of android. By the end of our project we were able to transfer our academic and research knowledge to make an interactive android based application. After developing the project, we are able to understand what basically android application is and how it works with the phone.

Future Work The project that we have made is very valuable in the market. It can be more valuable and accurate by doing some modifications in it like, we detected the phone were drop or fall and if user don't response after certain time then trigger generated and send message and location to specific contacts and rescue department for help.

Also we will work on shaking sensor for sending message because pressing or holding buttons would be difficult in some situation like accidental, injured etc.

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