# SafeMe

## Make B.M.C.C Safe Again

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# ACKNOWLEDGEMENT

I would like to express my sincere and deep gratitude to my internal project guide Mrs. Manjusha W. for her valuable guidance and suggestions.

I would also like to thank my peers for their input and valuable feedback which helped me gathered valuable insight.

**Mr Sawan Pimpalkhare**

**Ms. Esha Goundi**

# Contents

# Introduction

In today's world safety and security is need of the hour parents being able to keep their children safe ,friends being able to look after each other in places away from their home its absolutely necessary to have security tools that in time of crisis can make a difference. That's why I created SafeMe is an android app which can instantly alert the Guardians (along with user location) whenever the user is in an emergency situation. It can be triggered just by shaking the android device in which the app is installed or by using the Alert widget module or A various number of task specific features designed to keep the users safety at utmost importance.

## Features of Application-

- ACTIVITY TO VIEW ALL PEOPLE USING THE APP
- FRIEND REQUEST ACTIVTY TO CREATE CUSTOMISED FRIEND LIST
- ALERT BUTTON TO INSTANTLY SPAM ALERTS
- MOTION DETECTION FEATURE TO DETECT CHOAS AND REQUEST HELP
- CUSTOMISED HOME WIDGET
- SHAKE TO ASK FOR HELP
- REAL TIME LOCATION TRACKING
- REAL TIME LOCATION TRACKING WITH ROUTE TRACKING
- NAVIGATE TO USERS LAST KNOWN LOCATION
- FEATURE TO CALL NATIONAL DISTRESS HOTLINE
- FEATURE TO UPLOAD EVIDENCE
- FEATURE TO CUSTOMIZE EMERGENCY MESSAGE
- FEATURE TO CUSTOMIZE EMERGENCY CONTACT LIST
- INSTANT LOGIN WITH GOOGLE
- FIREBASE CUSTOMIZED NOTIFICATIONS
- ANALYTICS, CRASHLYTICS REPORT GENERATION
- REMOTE REALTIME DATABASE
- MATERIAL DESIGN FEATURES
- HELP MODULE
- SIGNUP, SIGNOUT THROUGH MAIL
- FIREBASE IN-APP MESSAGING
- FIREBASE CLOUD MESSAGING
- DYNAMIC INTERACTIVE UI

# Aims and Objectives

## The Aims & Objectives are-

- To keep help users feel safe and secure.
- To let teachers monitor buses and other students as well as on field on duty teachers.
- To connect parents directly to their students and vice versa in time of need.
- To be able to secure evidence of the situation.
- To connect friends with each other so that when in need they can help each other around campus.
- To build scalable personal security software.
- To have a very well-designed interactive application.
- Safety module which covers various emergency protocols and makes the user feel safe and request help when needed.

# Scope

This product has great future scope. Security is a never ending field in the time of digital age constant upgradation is required and if you don't feel safe you can't feel healthy. Having application which tries to ensure your privacy and safety is a must. This application can be migrated to flutter for a single cross platform safety application. It can be programmed to develop more accurate body chaotic situation using the accelerometer. In this fields noting can be too perfect but this app tried to cover all the required fields such as location tracking, internet messaging, text messaging, Emergency Calling.

- The users can have specific groups tailored to their region.
- Users can shake the device to activate emergency protocol.
- A specific database setup to upload Image evidence to secure cloud server for safe keeping.
- Instant spam able help widget on home screen.
- Up to two emergency contact can be setup.
- Navigate to user location through google maps Api.

# Scalability

The system has great scalability as it is a security application , security is constantly evolving and in this digital age new features can help this application scale to its best limits.

Some features that can be added are on body off body detection. More precise location tracking. Developing a help chatbot to navigate for disabled individuals. Adding groups for friends which can only be applicable to people surrounding you. Spam able notification feature to request for help. From being generic in terms of its shake detection algorithm it can scale to be unique to each individual device and usage of that individual. In terms of UI transition animation elements are always being updated.

# Limitations

The limitation of project are as follows-

- It doesn't have back support for earlier Android O.S.
- Even though it has a global reach the software has limited storage and can crash if the number of users exceed the defined data capacity.
- Sometime the device fails to recognize the motion as different devices are calibrated on different settings.
- Users might face challenges in Navigating as no tutorial has been provided for the usage of website.
- It cannot work offline the app doesn't open if you don't have internet.
- The current pending Intent for notification is inactivite.
- There's no color-blind mode for color blind people to take advantage of.

# Challenges

- It was difficult to implement the entire wrapping of classes in a single connected navigation layout
- The developed an algorithm to detect the force which has been applied on device .
- The disagreements on the direction of project were common which often halted the progress of the project.
- Implementing Firebase module features from database, Creating buckets to In app messaging and other features.
- Due to variation between every device and its hardware to elemental UI needed a lot of tuning.
- Creating Views from dynamic recycle views to static scrolling views.
- Implementing a button that can perform multiple task by fetching multiple resources.

# Assumptions

- We initially assumed that the project would have to have a local database with a Mass messaging Api to send text messages as well as Internet messages.
- We would require only one type of database which through we can call and pass different values.
- We had assumption that the precision of maps would not be sufficient but it came pretty close.
- In pre development stages the app design was much different on paper.
- Assuming that Internet would not be a compulsory requirement.
- Assuming that the user is in utmost danger and what the app has to do to help them.

# Technologies Used

## HARDWARE REQUIREMENTS:

- 2GB ram ,intel or Amd or Exynos or Snapdragon proccesor
- LCD Monitor @ 60Hertz
- Gps tracker.
- Internet card.
- Network chip

## SOFTWARE REQUIREMENTS:

- Android OS minSDK 23
- Google Play Services
- Google Maps Services
- Device should be UnRooted

## Front End:

- XML
- JSON

## Back End:

- JAVA
- Firebase Database

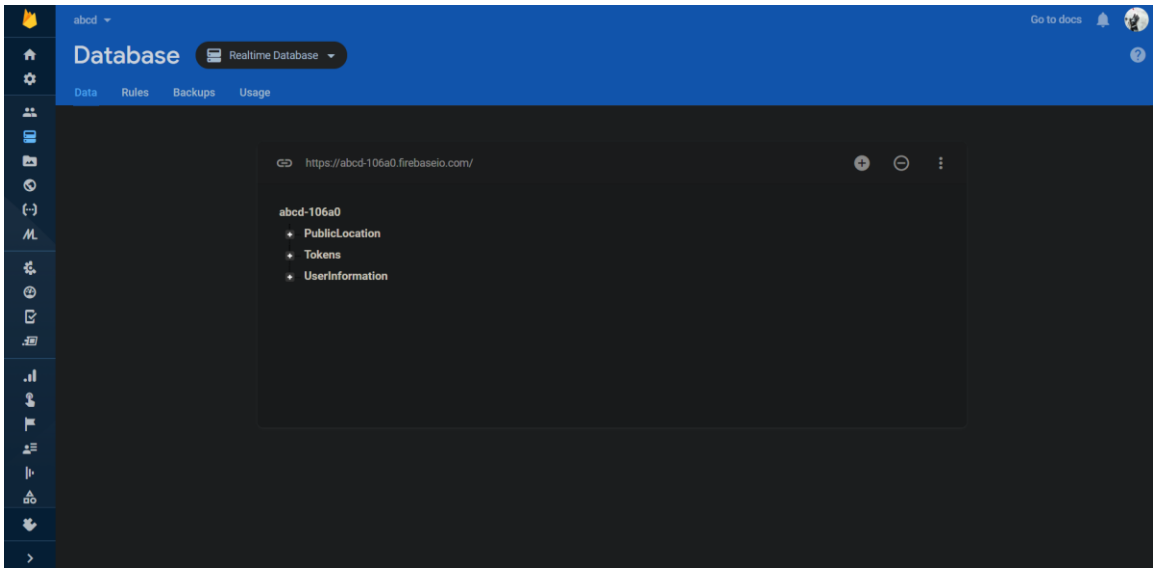
## External Libraries:

- Firebase Modules(10 libraries)
- Karumi Dexter
- Github Material SerachBar
- IO.Reactivex
- RetroFit2
- PaperDB
- Lguipeng:BubbleView
- Hani-momanii:SuperNova-Emoji
- Material Design

# Tables & Structures

## Tables used:

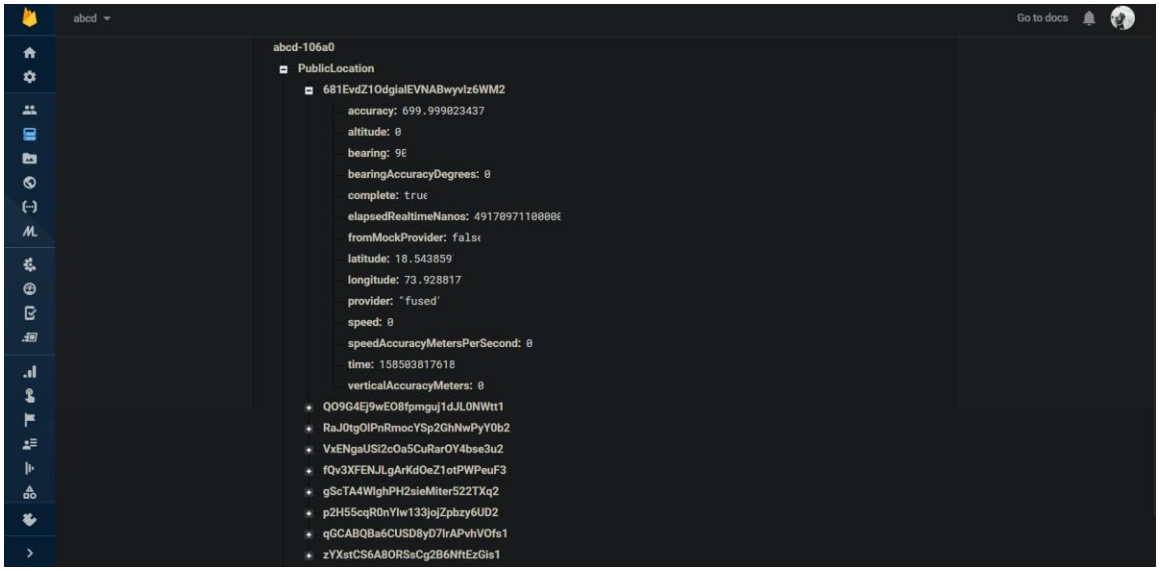
# All the tables

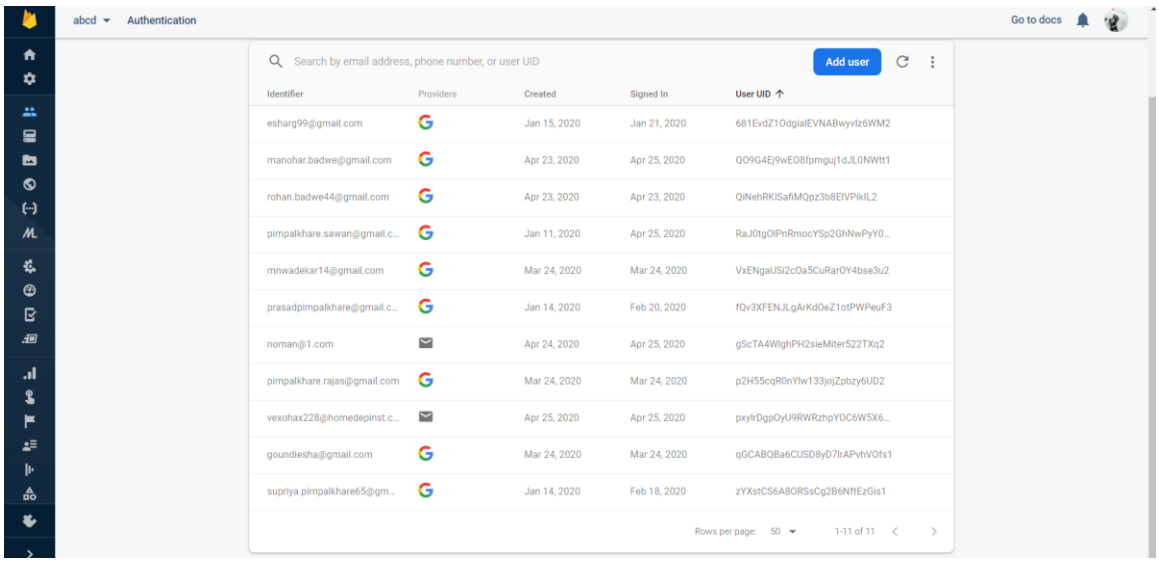


# Structures used:

*In Agent abcd-106a0*

*Database structure for Public Location is shown .As well as Authentication details below.*

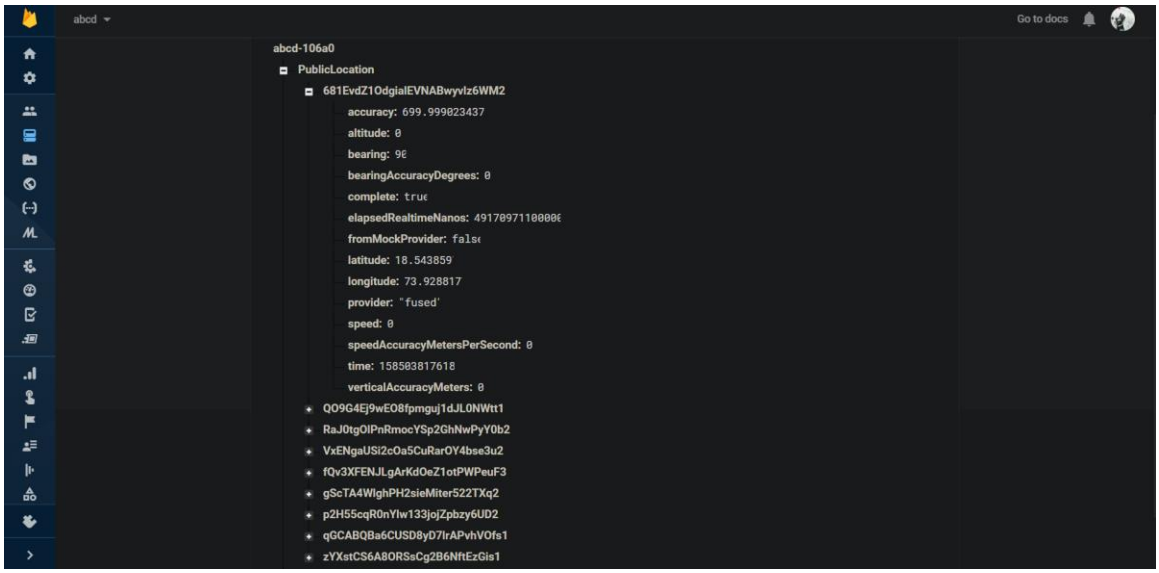


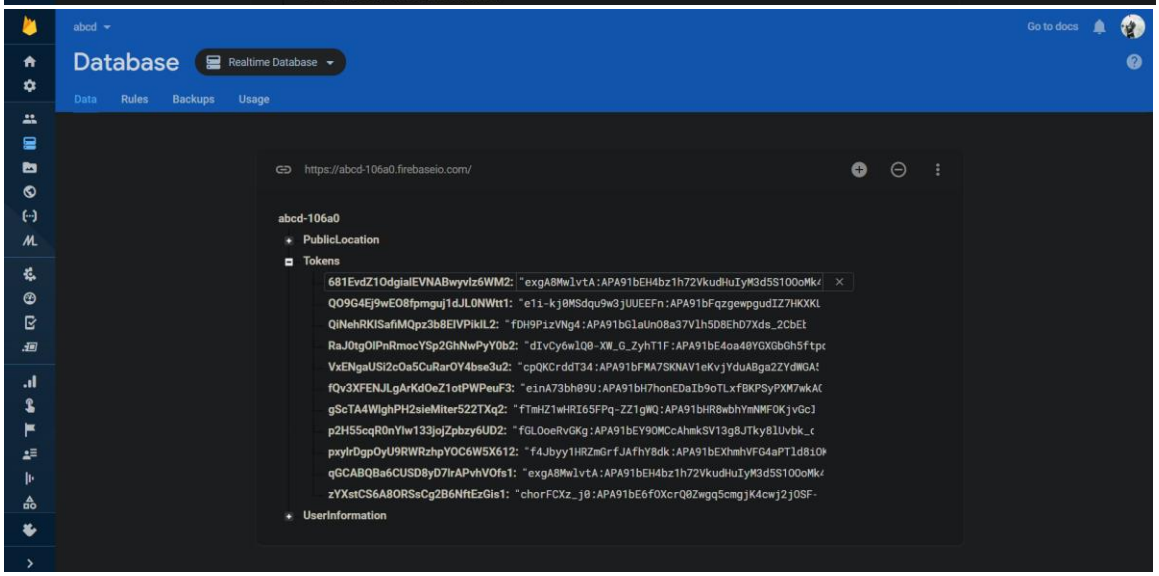



*In Agent abcd-106a0*

*Database structure for Public Location is shown.*

*Including Tokens table.*



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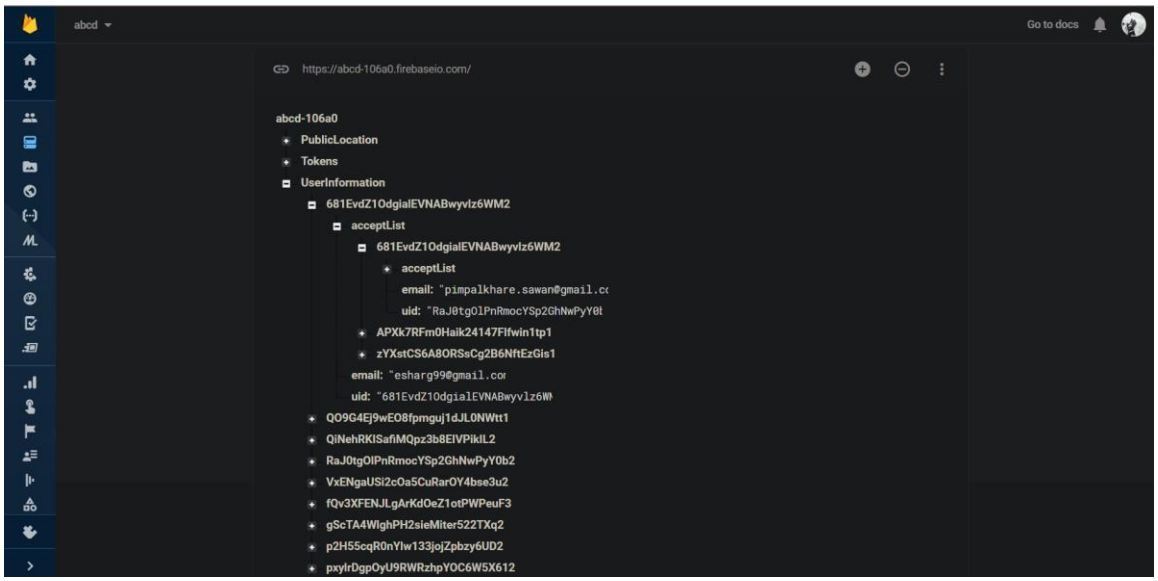
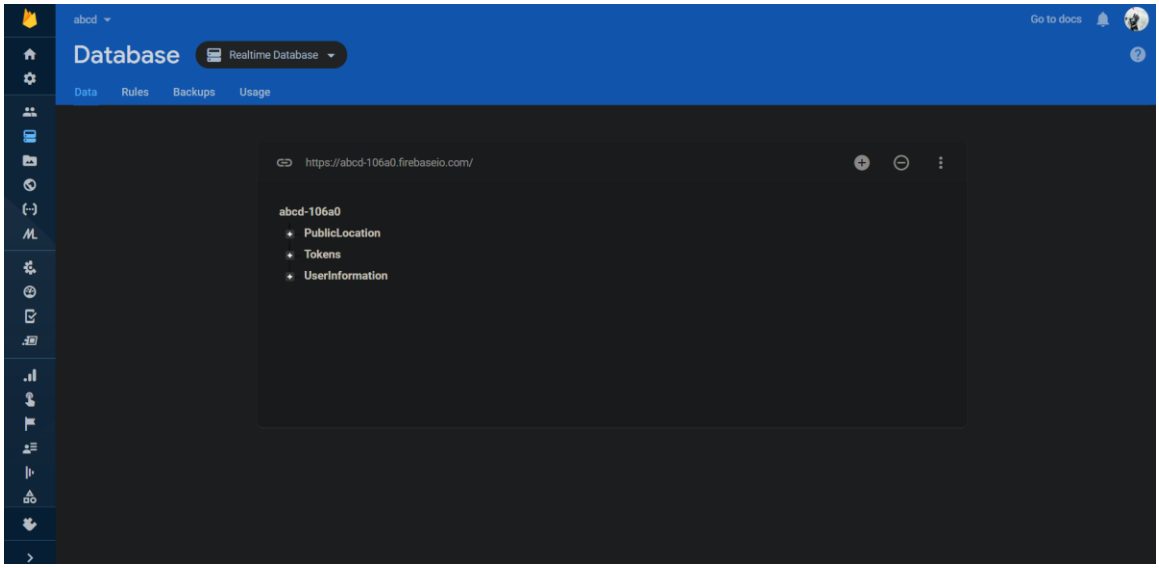
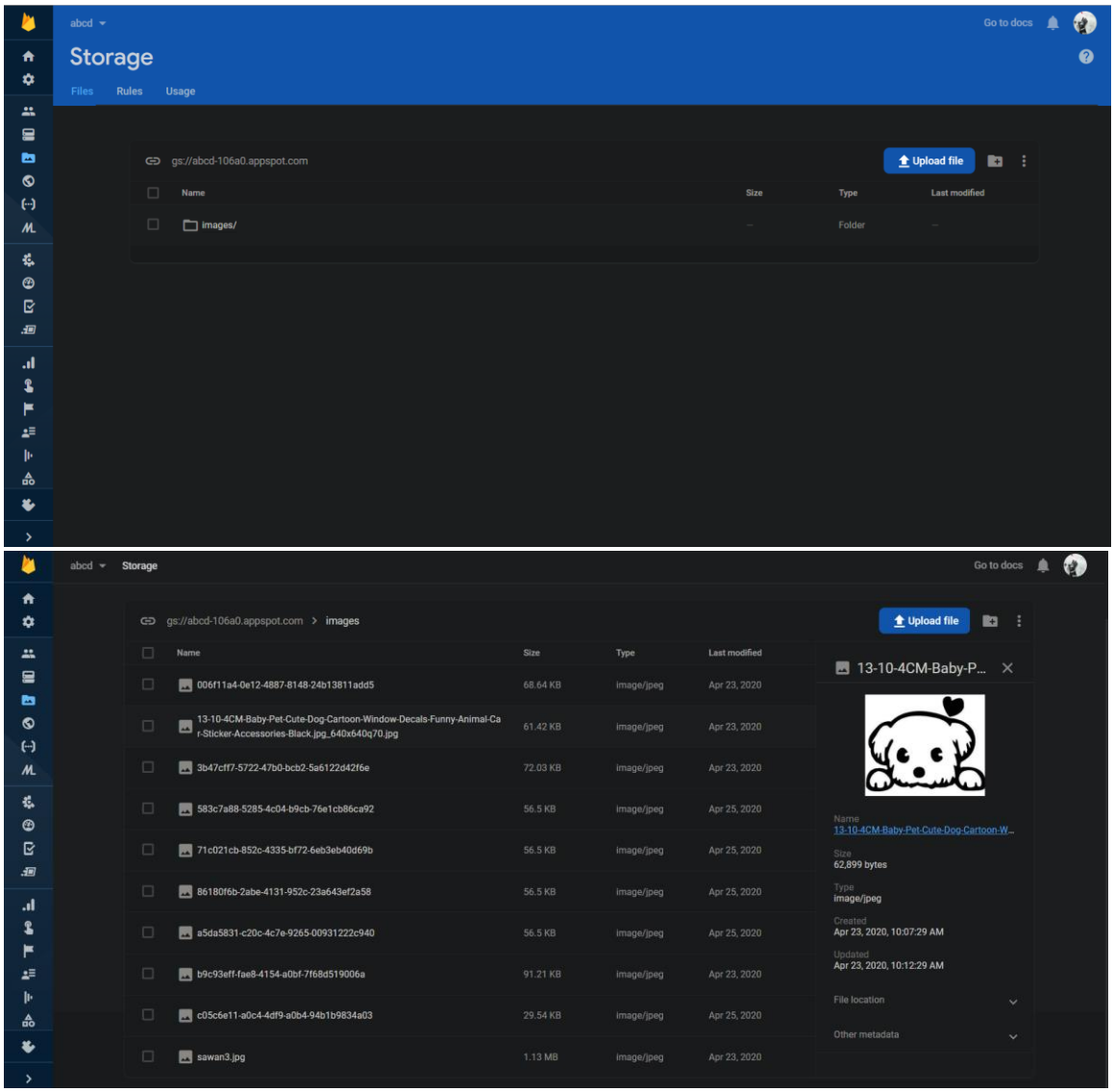
*Including Tokens table.*



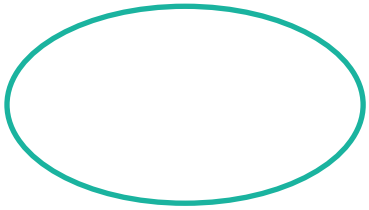



*Firebase Cloud Storage location of all the uploaded images. Stored in cloud bucket*



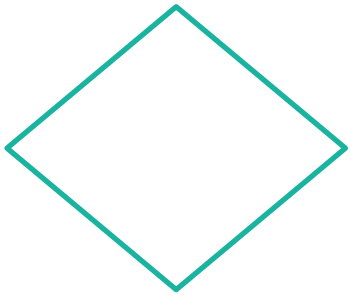
# Flowchart

## Rules of a flowchart-



This shaped is used to start the flow or represent start of a flowchart.

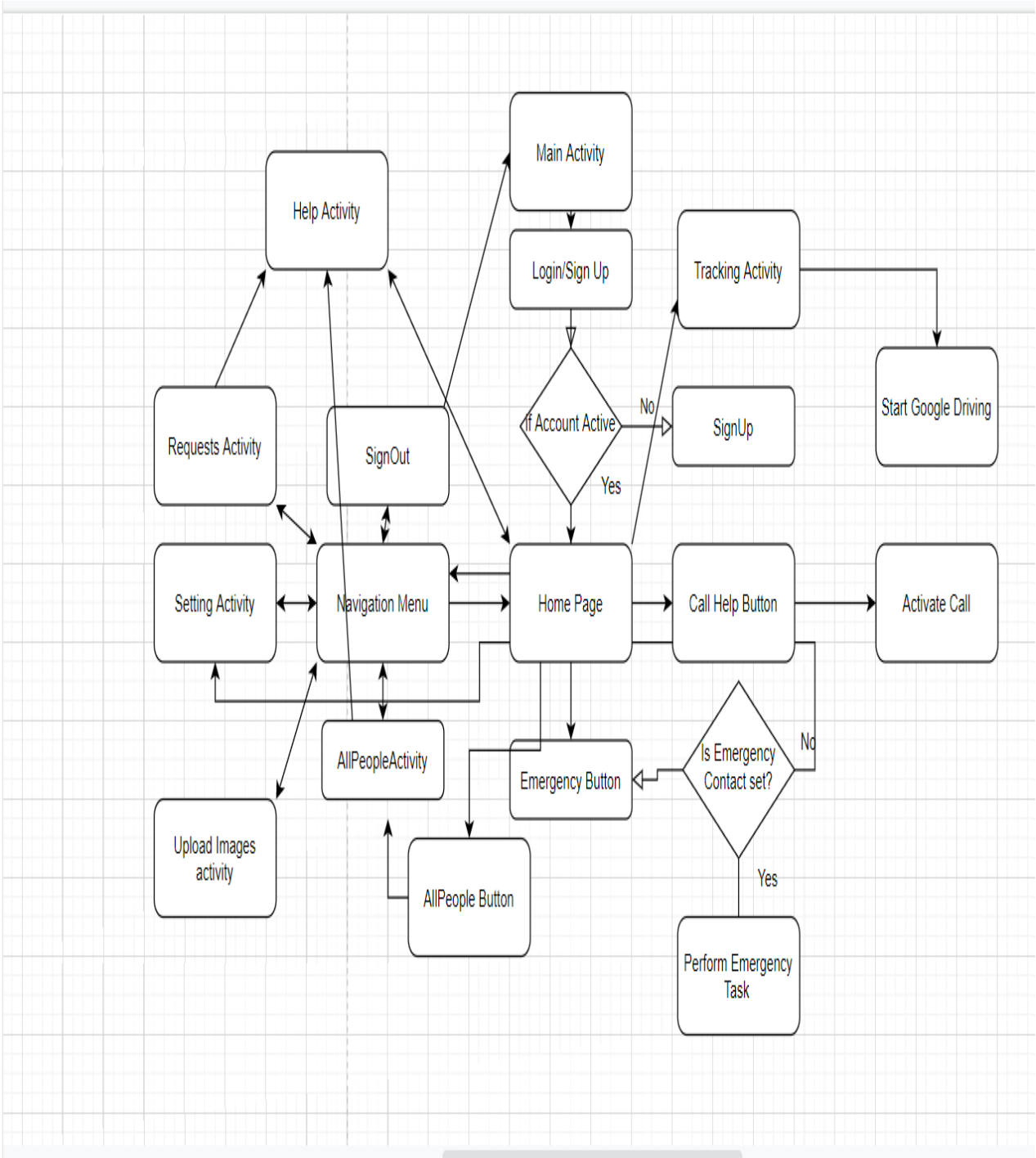
In a flowchart this shape represents a Process.



In a flow chart this shape represents a decision or a decision-making point.

In a flow chart this shape represents the end or termination point.

# Flow chart of current system-



# List of Menu Items

- Create an account
- Log In
- Shake to Activate Security Protocol
- Alert Button
- Alert Widget
- Call help
- Navigation Menu
- Help
- Home Activity
- Find People Activity
- Friend Request Activity
- Upload Image Activity
- Settings Activity

- Tracking Activity
- MainActivity

# Results of Software Testing

Testing can be done based on test cases. Test case has components that describes an input, action or event and an expected response, to determine if a feature of an Application is working correctly

For this project the application must generate the following,

- Authenticate Valid Login
- Authenticate Valid Password

The input given by the user must be checked from the database.

Login ID= {Valid login ID, Invalid login ID}

Steps formatting to carry out the test for Login Page-

- MainActivity
- Enter Email ID or Google Authenticate
- Enter Password if using Email ID
- Click Login

## Unit Testing-

In our system, Unit testing has been successfully handled. The test data was given to each and every module in all respects and got the desired output. Each module has been tested found working properly.

## Integration Testing-

Test data should be prepared carefully since the data only determines the efficiency and accuracy of the system. Artificial data are prepared solely for testing. Every program validates the input data.

## Validation Testing-

In this, all the Code Modules were tested individually one after the other. The following were tested in all the modules.

1) Loop testing
2) Boundary Value analysis.
3) Equivalence Partitioning Testing

In our case all the modules were combined and given the test data. The combined module works successfully without any side effect on other programs. Everything was found fine working.

## OUTPUT TESTING

This is the final step in testing. In this the entire system was tested as a whole with all forms, code, modules and class modules. This form of testing is popularly known as Black Box testing or system testing. Black Box testing methods focus on the functional requirement of the software. That is, Blackbox testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program. Black Box testing attempts to find errors in the following categories; incorrect or missing functions, interface errors, errors in data structures or external database access, performance errors and initialization errors and termination errors.

## Test Cases-

### USER-

| Module no | Name | Expected Behavior | Experimental Behavior | Status |
|---|---|---|---|---|
| 1 | Signup | This for the new users to give their details | New users can give inputs here, which are stored into database. | Passed |
| 2 | Login | This is verification page for | The inputs given by the users are | Passed |

| | | | | |
|---|---|---|---|---|
| | | users. Only a valid user can Login. | checked from the database. | |

# Deployment

We can release our Android applications several ways. Usually, we release applications through an application marketplace such as Google Play, but we can also release applications on our own website or by sending an application directly to a user.

Releasing through an app marketplace

If we want to distribute our apps to the broadest possible audience, releasing through an app marketplace such as Google Play is ideal.

Google Play is the premier marketplace for Android apps and is particularly useful if we want to distribute our applications to a large global audience. However, we can distribute our apps through any app marketplace we want or we can use multiple marketplaces.

Releasing our apps on Google Play

Google Play is a robust publishing platform that helps we publicize, sell, and distribute our Android applications to

users around the world. When we release our applications through Google Play we have access to a suite of developer tools that let us analyze our sales, identify market trends, and control who our applications are being distributed to. We also have access to several revenue-enhancing features such as in-app billing and application licensing. The rich array of tools and features, coupled with numerous end-user community features, makes Google Play the premier marketplace for selling and buying Android applications.

Releasing our application on Google Play is a simple process that involves three basic steps:

- Preparing promotional materials.

To fully leverage the marketing and publicity capabilities of Google Play, we need to create promotional materials for our application, such as screenshots, videos, graphics, and promotional text.

- Configuring options and uploading assets.

Google Play lets we target our application to a worldwide pool of users and devices. By configuring various Google Play settings, we can choose the countries we want to reach, the

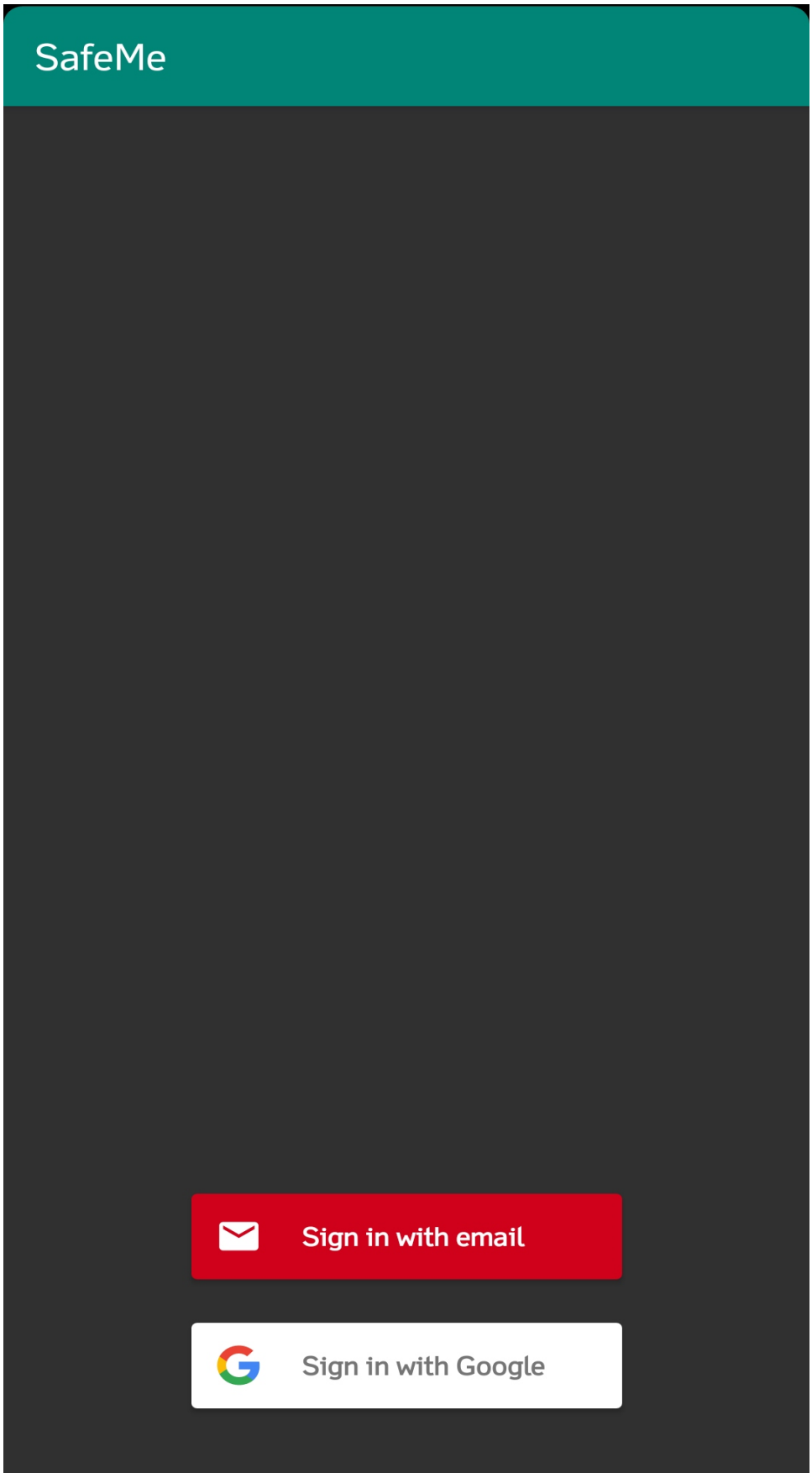
listing languages we want to use, and the price we want to charge in each country. We can also configure listing details such as the application type, category, and content rating. When we are done configuring options we can upload our promotional materials and our application as a draft (unpublished) application.

- Publishing the release version of our application.

If we are satisfied that our publishing settings are correctly configured and our uploaded application is ready to be released to the public, we can simply click **Publish** in the Play Console and within minutes our application will be live and available for download around the world.

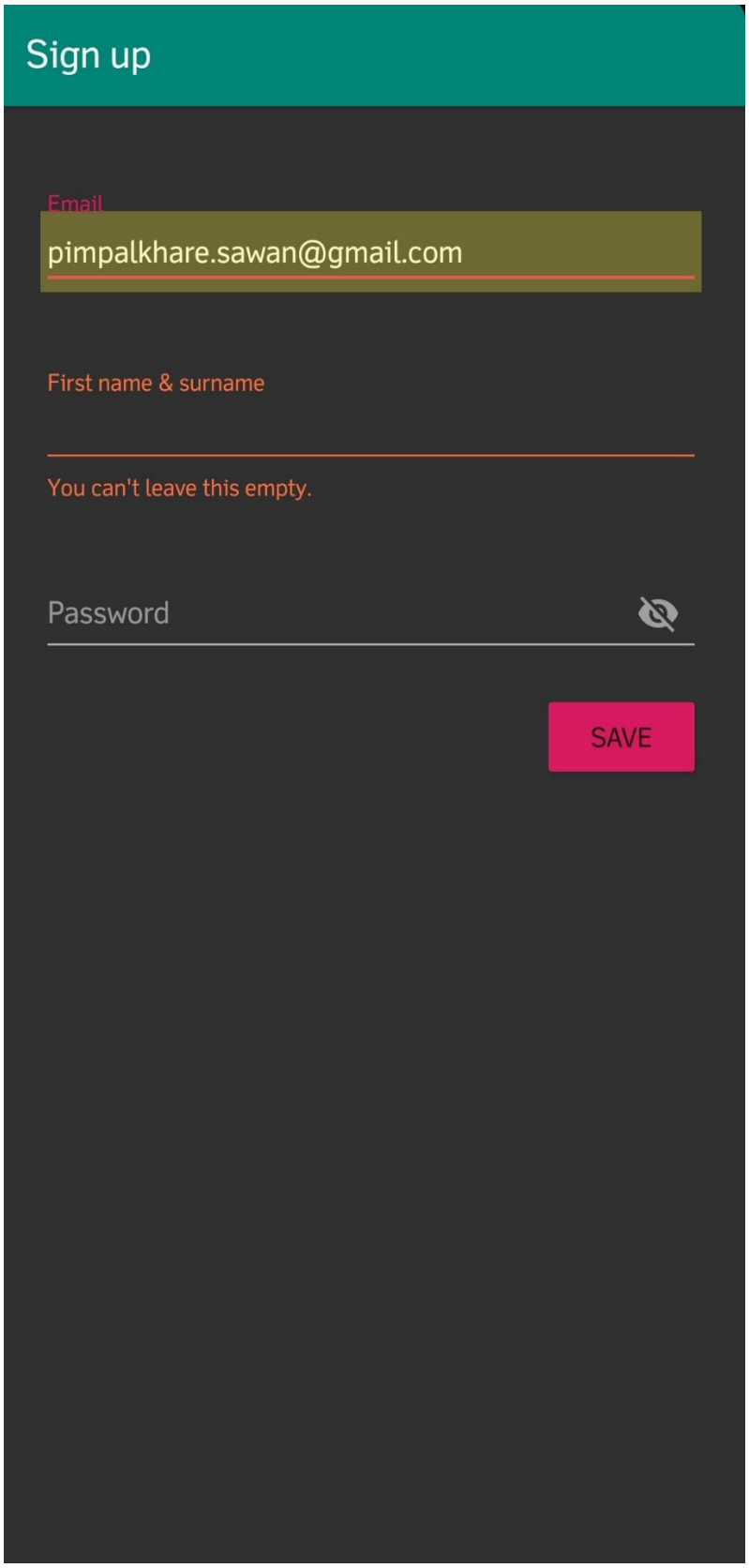
# User Manual


STEP 1 – WHEN YOU WILL FIRST OPEN THE APPLICATION YOU WILL SEE MAIN PAGE MAKE SURE YOU HAVE YOUR INTERNET CONNECTION ON TO CONTINUE.



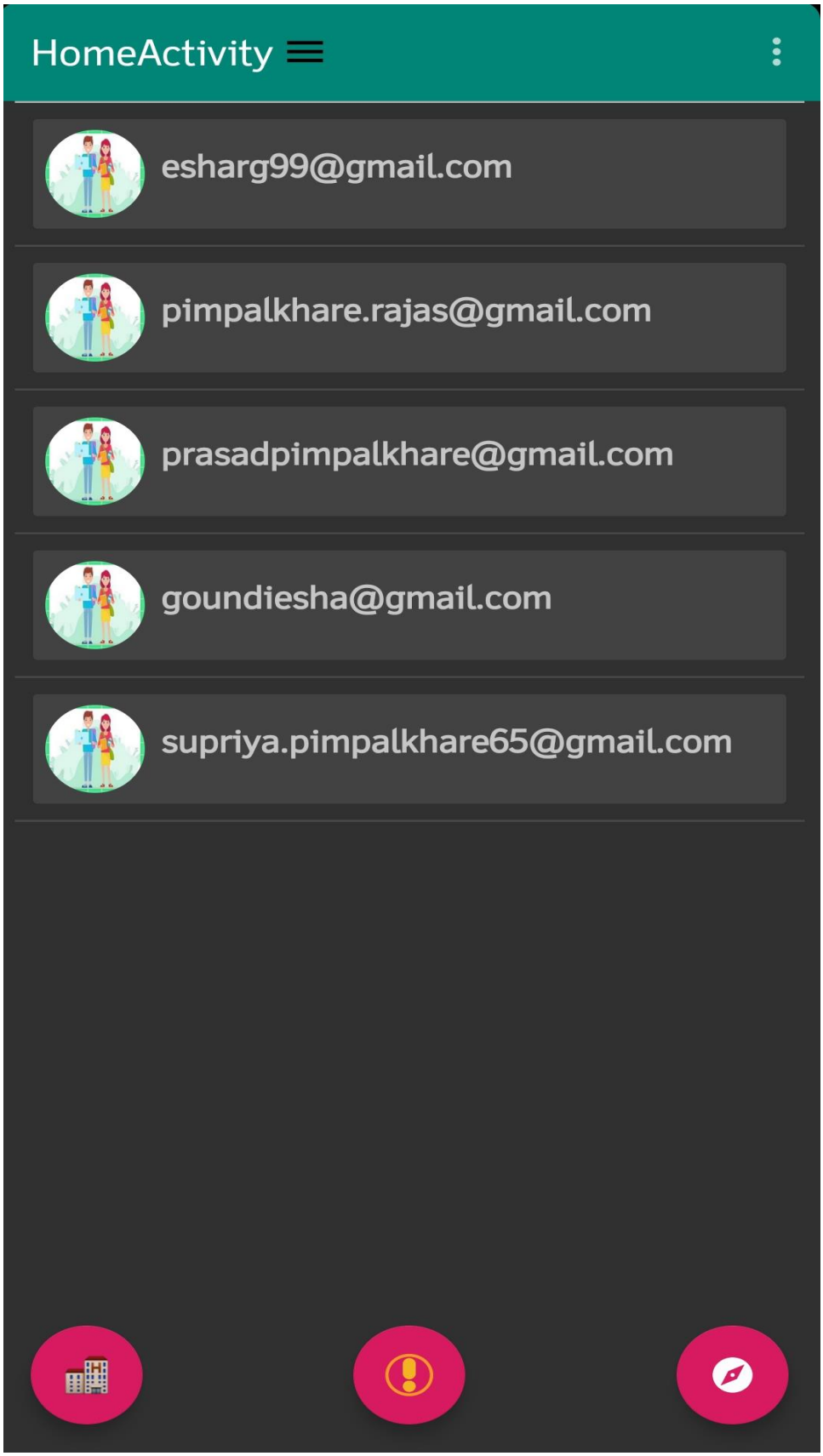

STEP 2-

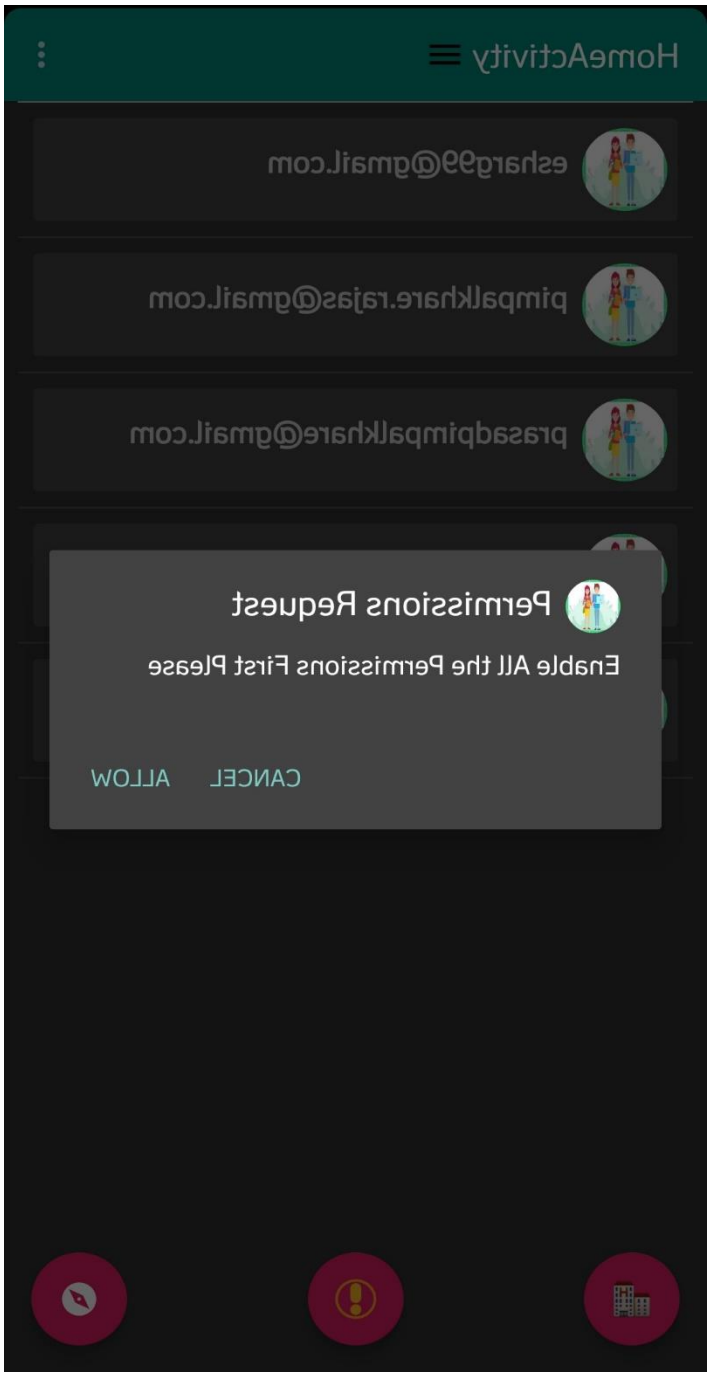
YOUR LOGIN ACTIVITY WILL BE INTIATED IF YOU ALREADY HAVE A GOOGLE ACCOUNT YOU CAN LOG RIGHT IN IF NOT YOU CAN SIGN UP WITH YOUR OWN MAIL.




STEP 3-

IF YOU CHOOSE TO REGISTER SIGN UP YOUR MAIL AND SETUP YOUR PASSWORD.

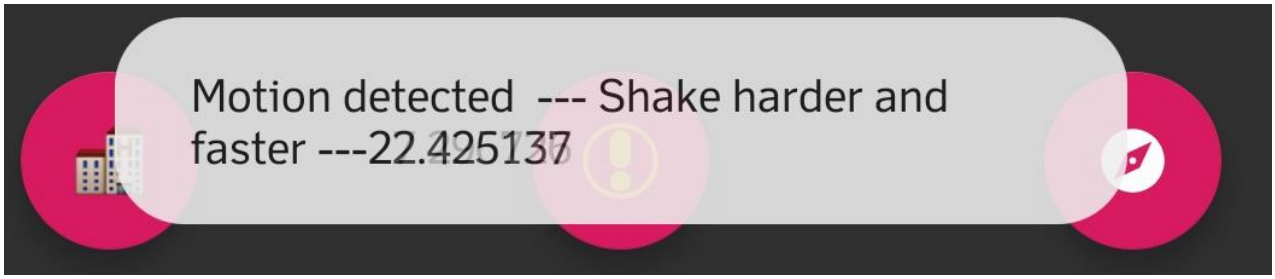

HomeActivity
esharg99@gmail.com
pimpalkhare.rajas@gmail.com
prasadpimpalkhare@gmail.com
goundiesha@gmail.com
supriya.pimpalkhare65@gmail.com

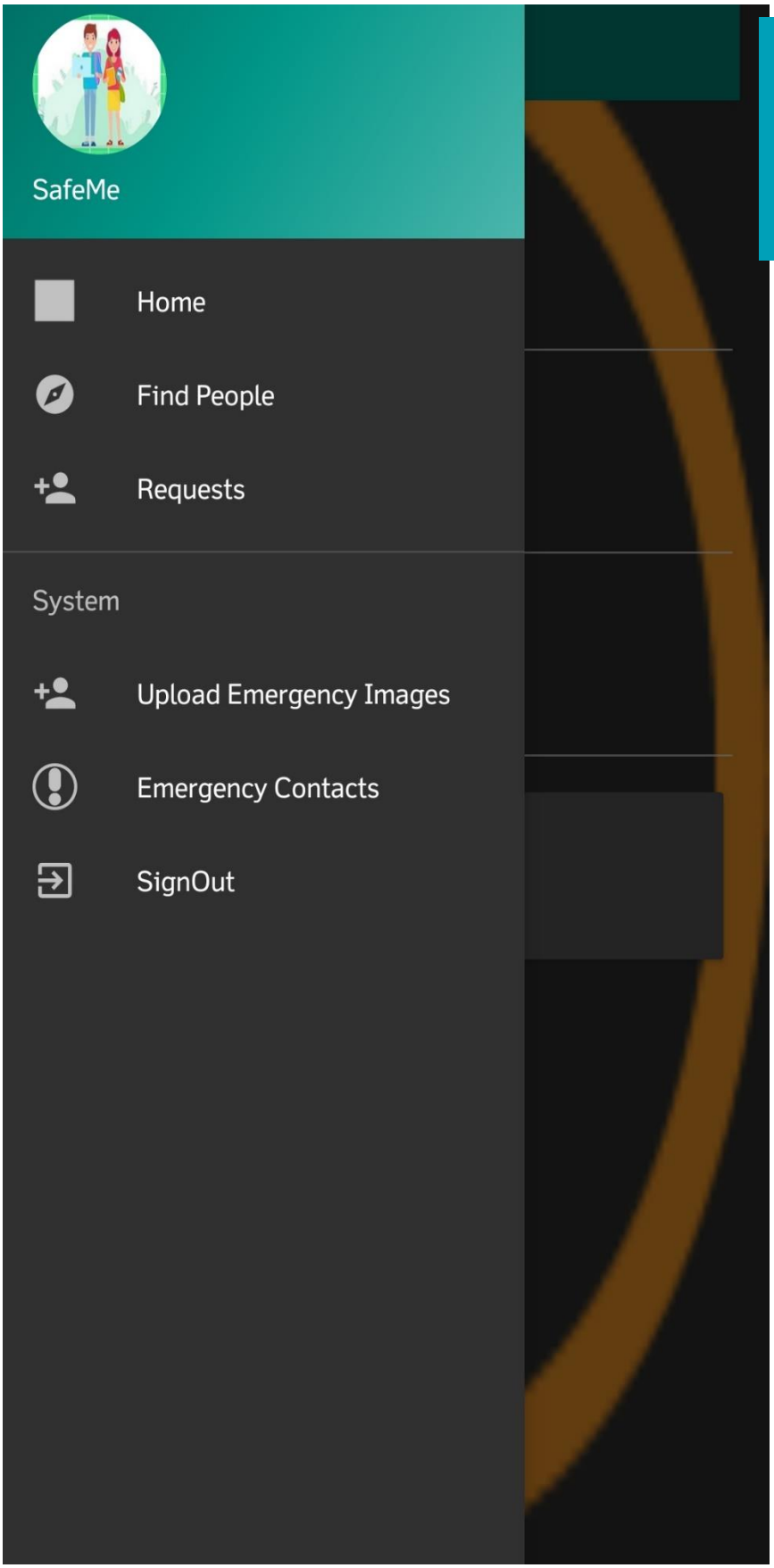



STEP 4-

CLICK ANY OF TO PROMPT THIS MESSAGE GIVE THE APP ALL PERMISSIONS IT REQUIRES FOR IT TO FUNCTION PROPERLY.

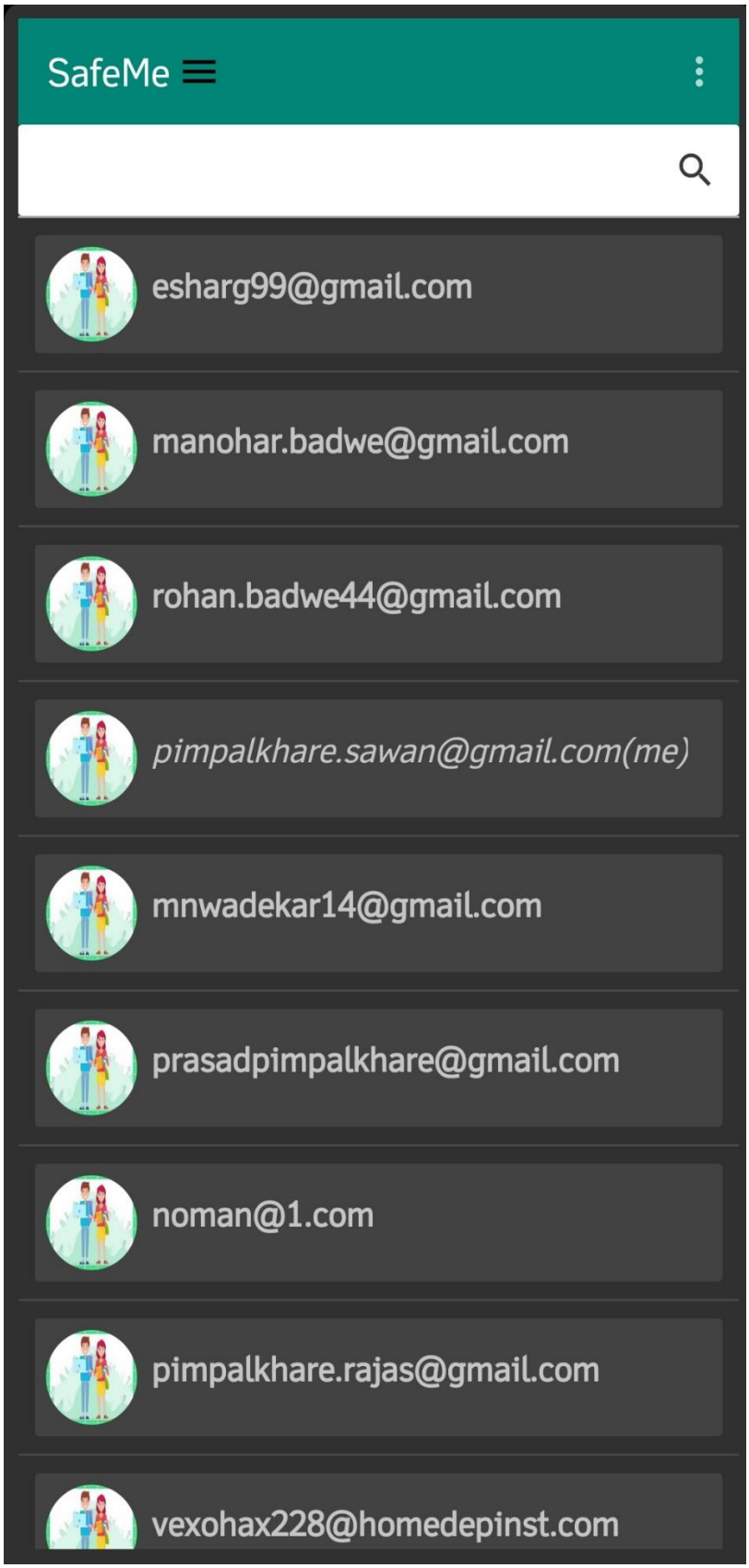
DON'T WORRY ABOUT THE MESSAGE YOU SEE THAT'S JUST THE SHAKE TO ACTIVATE FEATURE BEING TURNED ON IF YOU SHAKE HARD IT WILL SEND MESSAGES TO YOUR CONTACTS BUT YOU HAVE SET THEM UP FIRST.





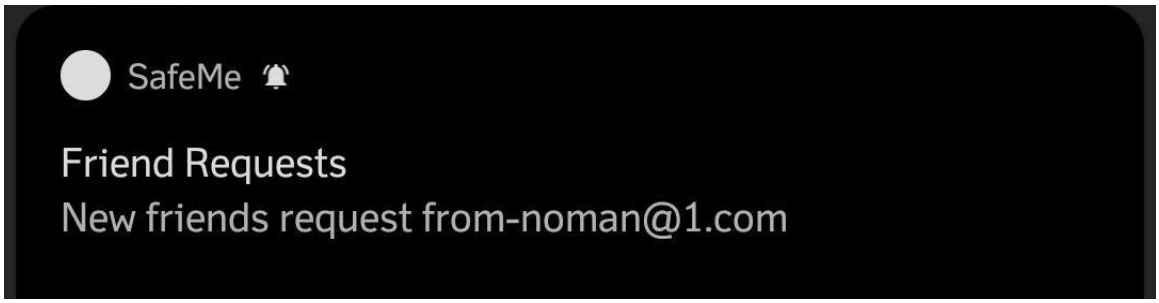

STEP 5-

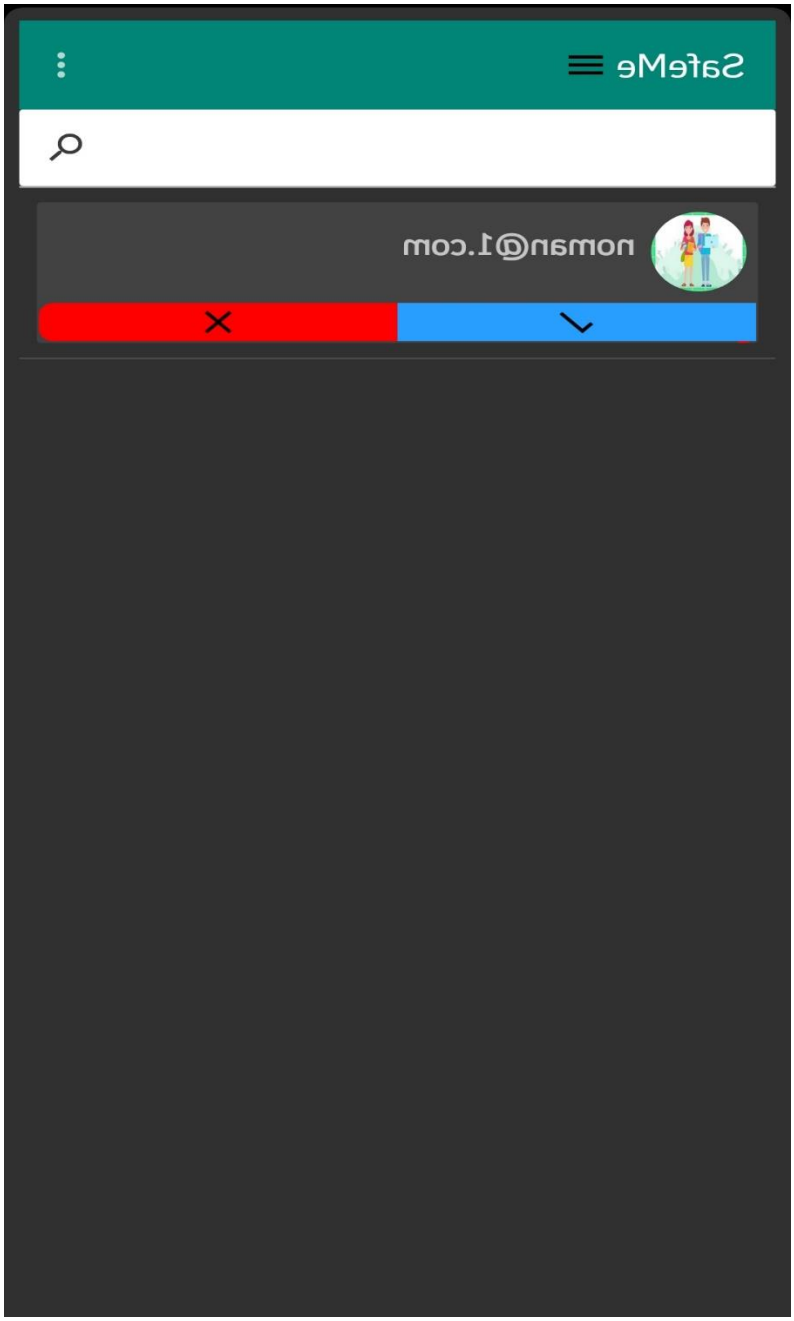
THIS IS THE NAVIGATION MENU THAT CAN TAKE YOU TO ANYWHERE IN THE APP YOU CAN OPEN IT BY SWIPING LEFT TO RIGHT OR PRESSING THE MENU BUTTON NEAR THE APP NAME.




STEP 6-

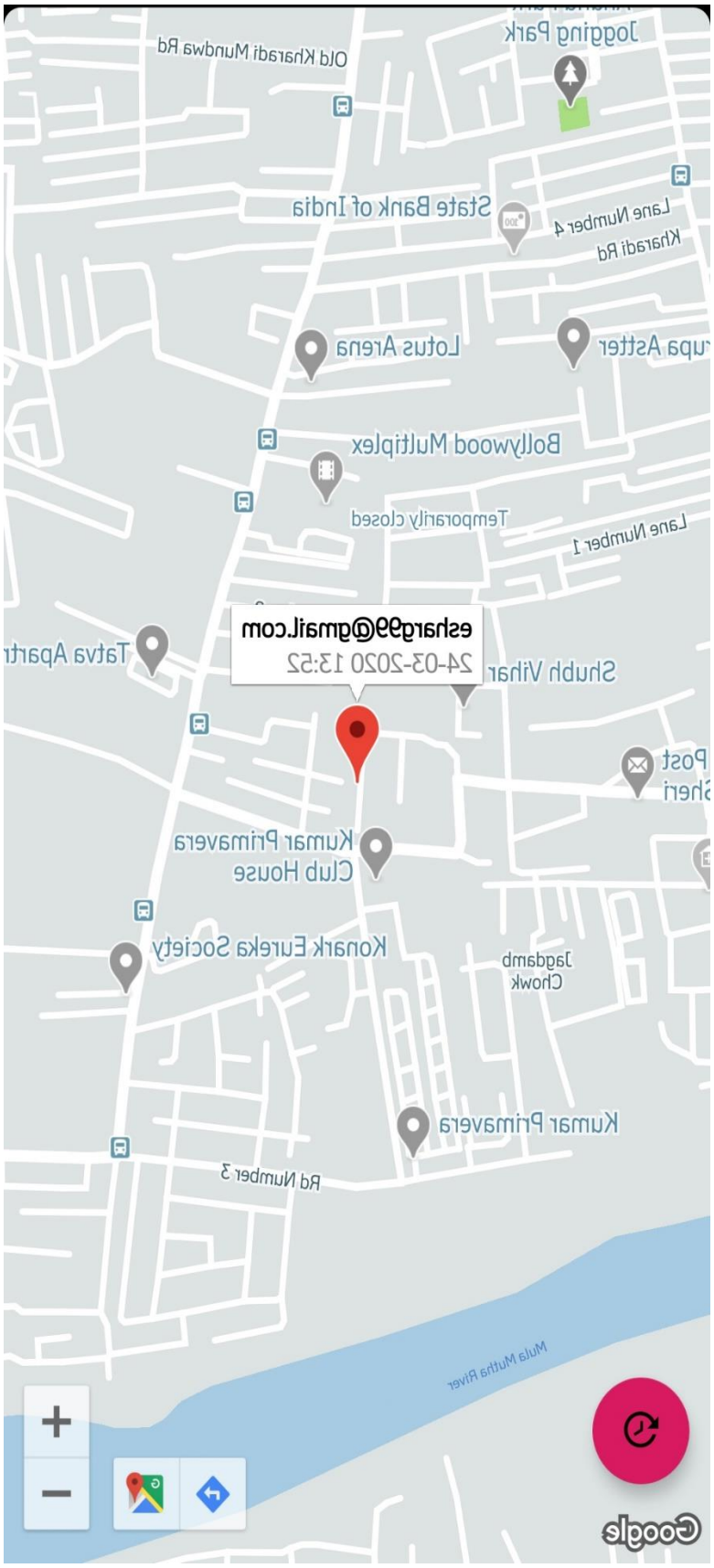
THIS IS THE NAVIGATE ALL PEOPLE ACTIVITY YOU CAN SEE ALL THE USERS AVAILABLE ON THIS APP TAP ON THEM AND SEND THEM A FRIEND REQUEST.



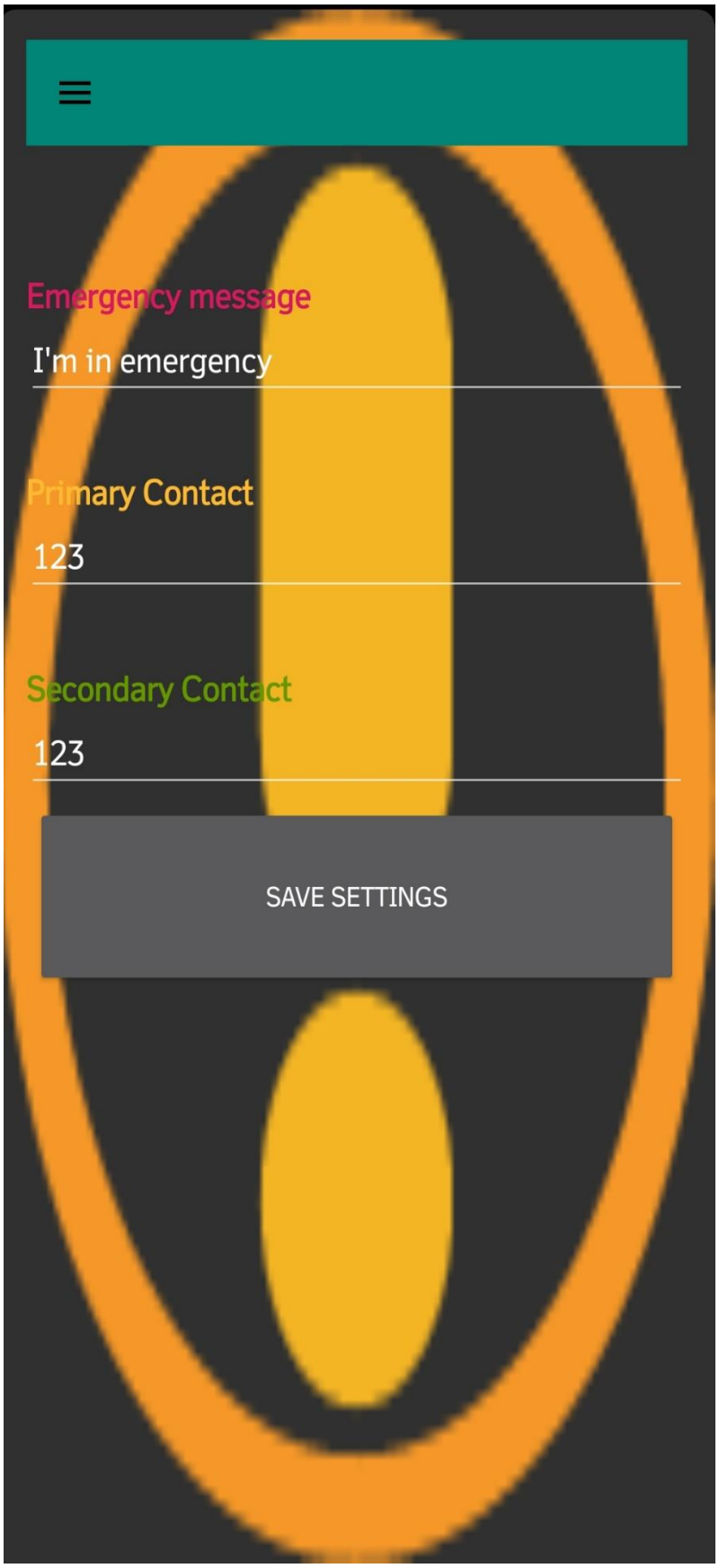
STEP 7-

THIS IS THE ALL NOTIFICATION WHEN SOMEONE SENDS YOU A REQUEST CLICK TICK TO ACCEXT X TO REJECT.



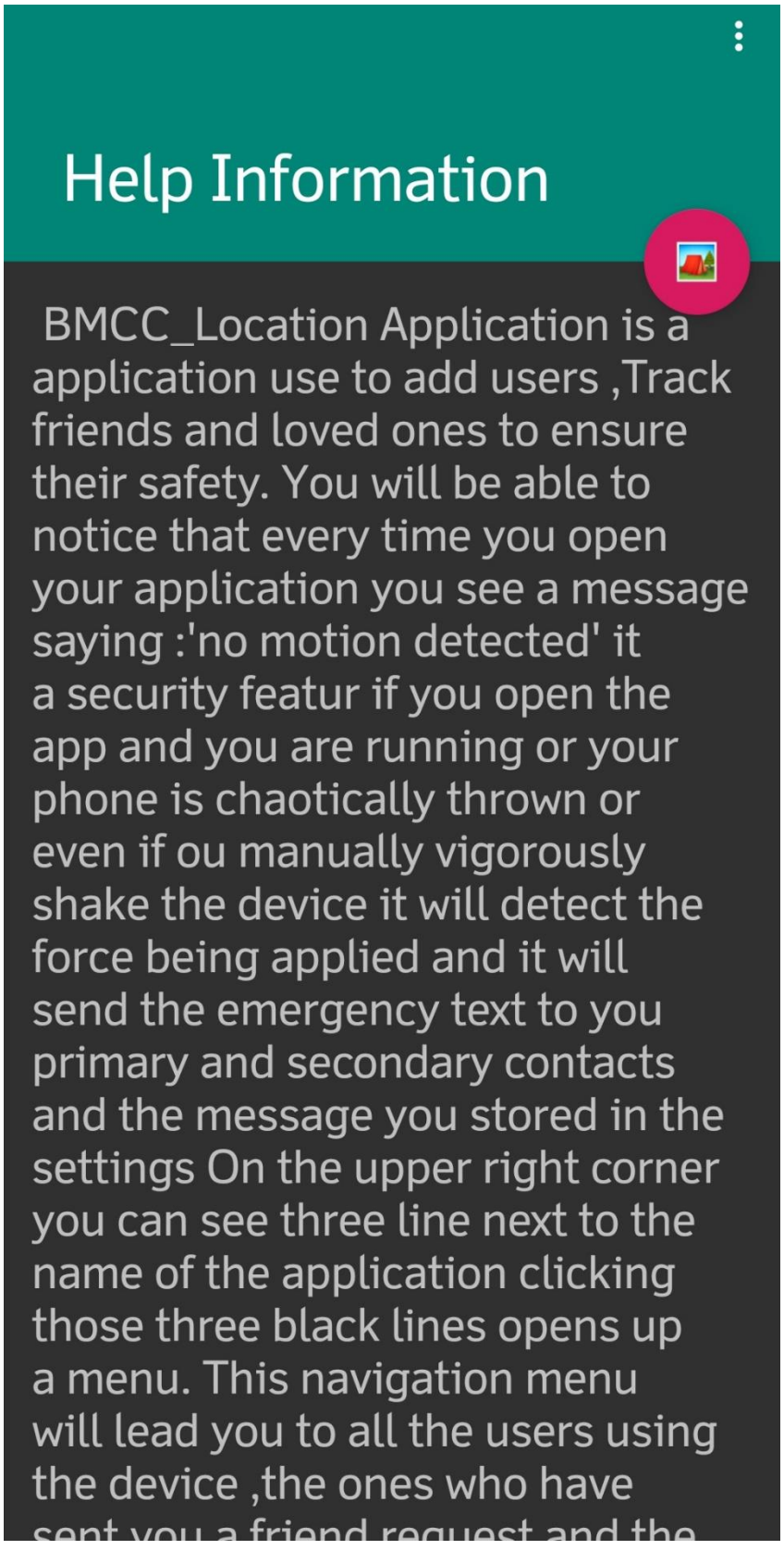

STEP 8-

ONCE YOU ADD A FRIEND YOU CAN GO TO HOME ACTIVITY AND TAP N YOUR FRIEND TO SEE HIS LOCATION



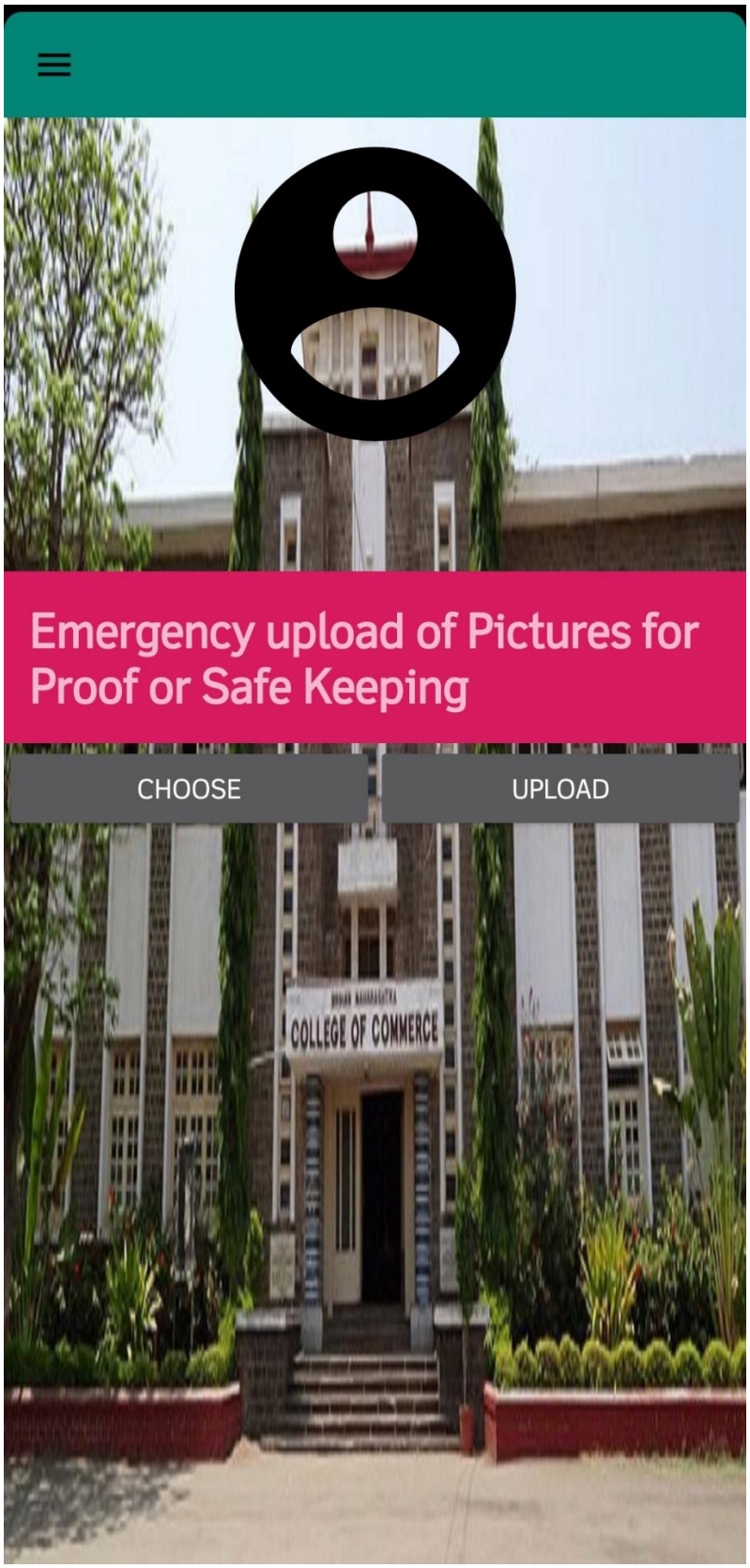

STEP 9-

DON'T FORGET TO SETUP YOUR EMERGENCY MESSAAGE AND YOUR CONTACTS SAVE THE SETTINGS AND YOUR READY ALL YOU'RE SHAKE TO ACTIVATE AND ALERT BUTTON FEATURES WILL BE ACTIVATED.




STEP 10-

ON EVERY TOOL BAR YOU CAN SEE A THREE DOT BUTTON CLICKING ON IT HELP WILL TAKE YOU TO A HELP PAGE ON WHAT THIS APP IS.




STEP 11-

THIS IS A VERY USEFUL FEATURE IF YOU WANT UPLOAD PICS ON TO CLOUD FOR SAFE KEEPING OR AS EVIDENCE YOU CAN CHOOSE BUTTON CHOOSE THE PICTURE AND UPLOAD IT DON'T WORRY YOU WILL GET TO PREVIEW YOUR PIC BEFORE UPLOADING.

STEP 12 –

DON’T FORGET TO ADD THE SUPER USEFUL HOME WIDGET TO YOUR HOME SCREEN ON CLICKING IT YOU WILL SEND AN EMERGENCY MESSAGE TO YOUR SAVED CONTACTS.