Project: SAFETY APP
Team No.: Team 5
Class: CSE 5324; FALL 2022 Module: System Requirements Analysis (SRA) Deliverable: SRA Document

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Honor Code

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Revision History

Version number	*Date*	*Originator*	*Reason for change*	*High-level description of changes*
1.0	09/13/2022	Sumanth, Azhar	Initial draft	Application Overview, Business Objectives
1.1	10/13/2022	Jaswanth, Abdul Haseeb	Revision	Architectural Design, System Requirements, Delivery Schedule
1.2	11/11/2022	Azharuddin Irfani Shaik Mohammed	Test Cases	60% of test cases are completed
1.3	11/28/2022	Azhar, Abdul Haseeb,Sumanth	Test Cases	Integrated Registration, Login, Location Tracking and SOS Features
1.4	12/1/2022	Azhar, Abdul Haseeb, Sumanth, Jashwanth	SRA Documentation	Integrated Add Guardian Feature with rest of the functionalities and SRA Documentation

TABLE OF CONTENTS

1. INTRODUCTION AND PROJECT OVERVIEW

In today’s world, it is not safe for a person to travel alone, especially at night. An effective way to reduce the chances of becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to identify and call on resources to help them out of unsafe situations. Whether they are in trouble or got separated from friends, having this app on your phone can diminish the risk and bring assistance when required.

2. OBJECTIVES

2.1 BUSINESS OBJECTIVES

- An app that lets friends and guardians know where a person is while traveling.
- Allow a user to register himself to use the app.
- Allow users to register guardians/emergency contacts.
- The app should support location tracking.
- Notify the user's location to register emergency contacts.

2.2 SYSTEM OBJECTIVES

The following is a list of system objectives

- System will be an Android application
- Location functionality will utilize Android’s location services
- Google Cloud is used to deploy the app as it can be scaled on demand and is accessible from any location
- Twilio is used for notifying emergency contacts.

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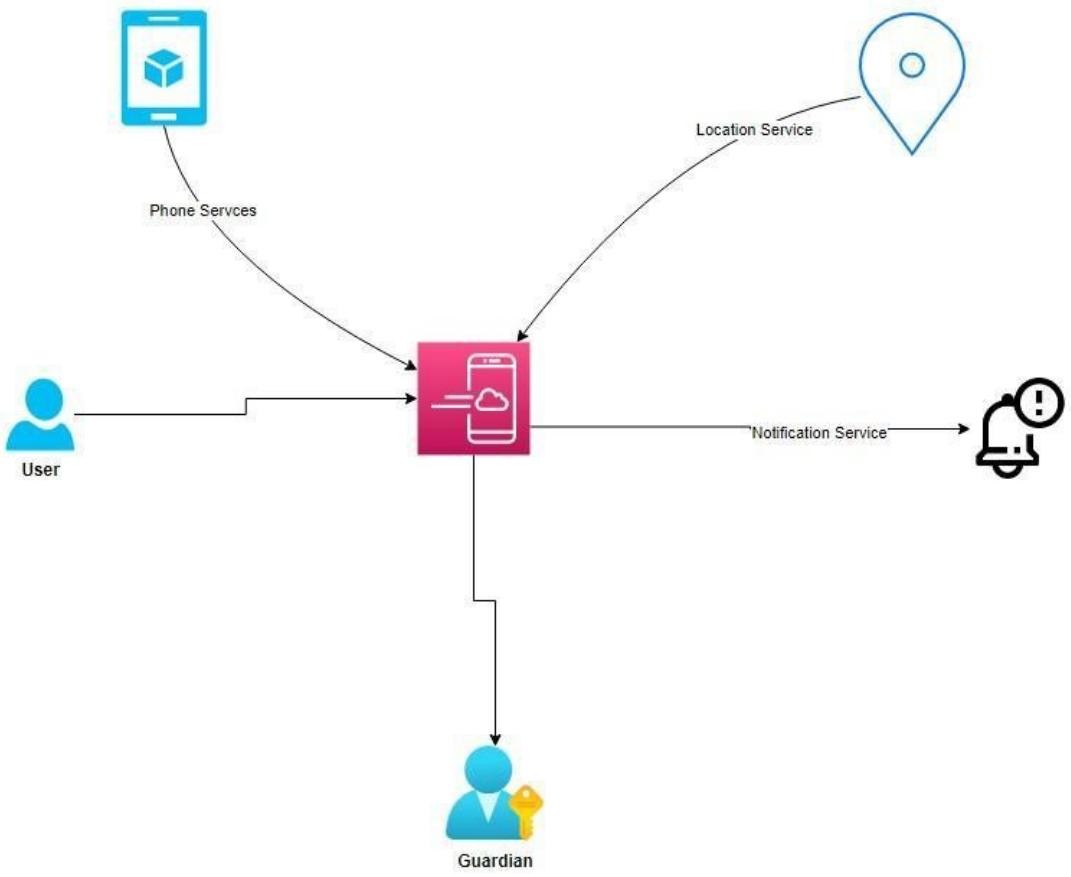
3. PROJECT CONTEXT DIAGRAM



4. REQUIREMENTS

4.1 FUNCTIONAL REQUIREMENTS

4.1.1 HOME SCREEN

When the user opens the app, the logo and the name of the application will be displayed.

4.1.2 LOGIN

Users should be logged in to use the app. A one-time login is required, which is persisted and subsequently used for all operations thereon.

Login is the entry point into the application.

The login Screen should have 2 text boxes and a Login button as described below:

User email, a text box to enter your username

Password, a text box accepting user passwords of at least eight characters and no longer than twelve characters

Validations

- User email is mandatory
- Password is mandatory

It should display an error message if validation fails.

4.1.3 SIGN UP

Users should be registered to use the application. Each user should provide

1. Full name, text boxes for the user to enter his/her name 2.
Contact Info:
    a. mobile number, valid mobile number
    b. email address.
3. Password: a text box to enter the password which is at least 6 characters

4.1.4 EMERGENCY CONTACTS

All the Users must add at least one emergency contact. These are the contacts to which the SOS messages are sent in case of emergency or location updates for tracking.

Each user should provide

1. First & Last name, text boxes for the user to enter guardian name 2.
Contact Info:
    a. mobile number, valid mobile number

4.1.5 LOCATION TRACKING

The user needs to enable his location access services once he opens the app to enable the broadcast of the location to an emergency.

4.1.6 NOTIFICATION SERVICES

Once the security feature is enabled, the location of the user is notified of an emergency contact using the Notification service.

4.2 NON-FUNCTIONAL REQUIREMENTS

- System is responsive
- Messages are persisted

4.3 SYSTEM REQUIREMENTS

A mobile with

- latest version of android
- connected to internet
- should have the feature to detect location

5. SOFTWARE PROCESSES AND INFRASTRUCTURE

5.1 HARDWARE AND INFRASTRUCTURE

Below list of the places each component is deployed/hosted.

5.1.1 MOBILE APP

- Deployed on Android mobile.

5.1.2 BACKEND SERVICE

- Deployed on Firebase as Cloud Functions.

5.1.3 DATABASE

- Firestore, deployed on the cloud, is used as a database.

5.1.4 NOTIFICATION SERVICE

- Twilio is used for SMS.

5.2 DEVELOPMENT TOOLS

Below are the tools and languages used for developing the app.

5.2.1 MOBILE APP

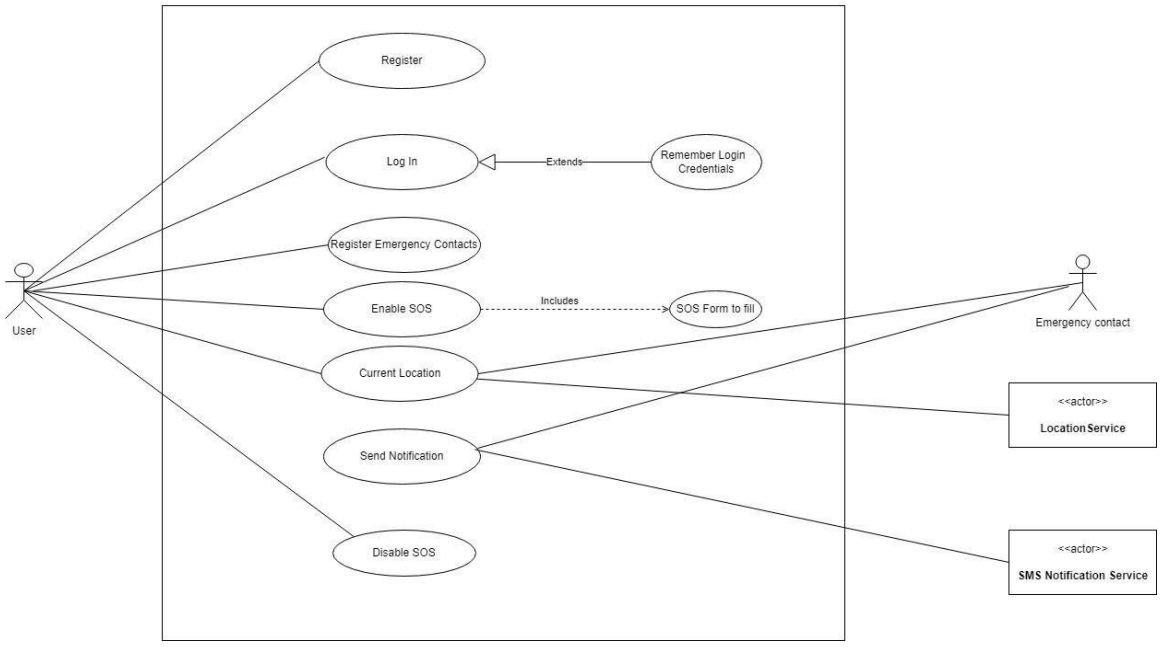
- IDE: Android studio. ●
Language: Java.

5.2.2 BACKEND SERVICE AND DATABASE

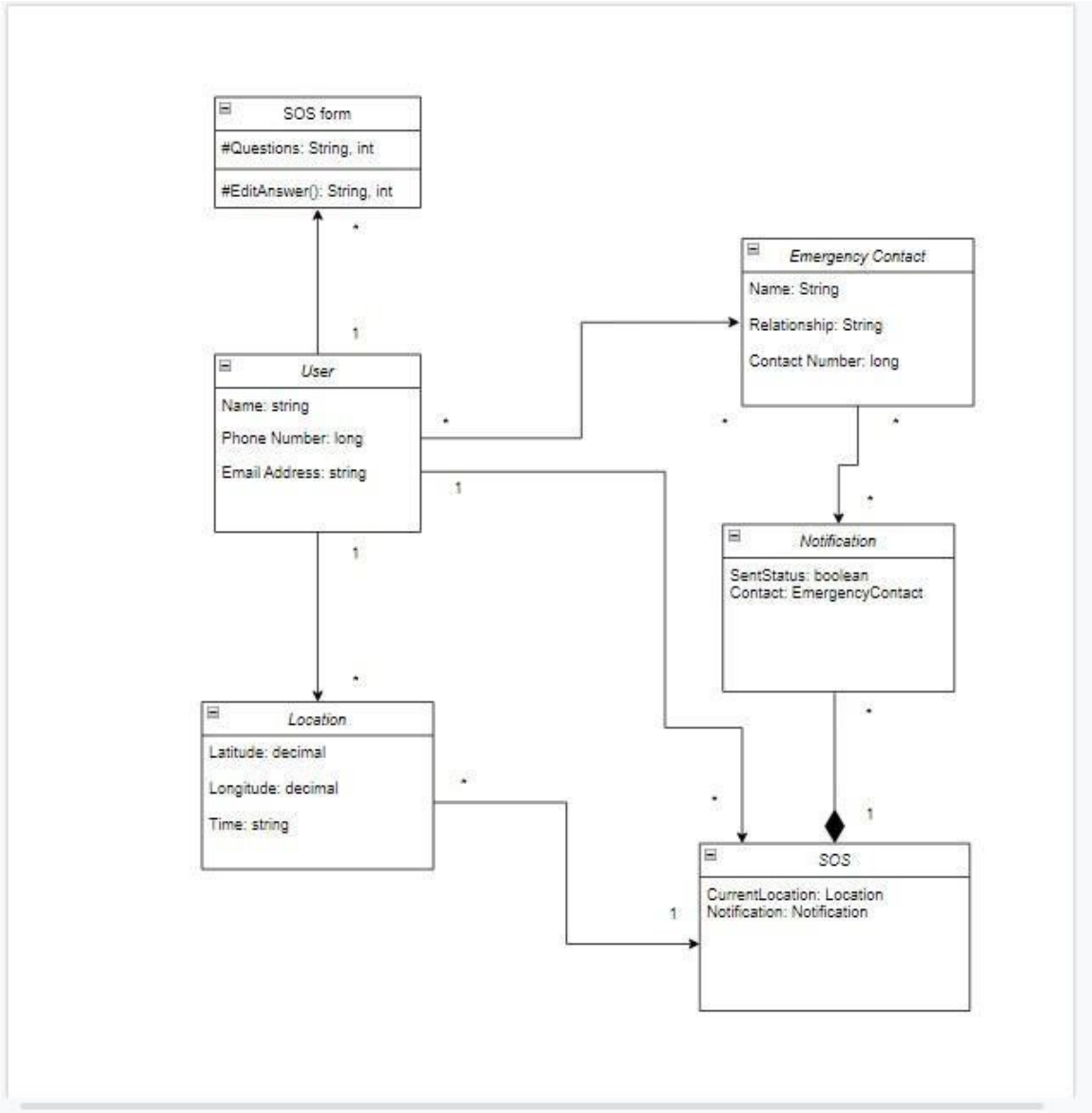
- IDE: Visual studio Code. ●
Language: Typescript.

5.3 UML DIAGRAMS

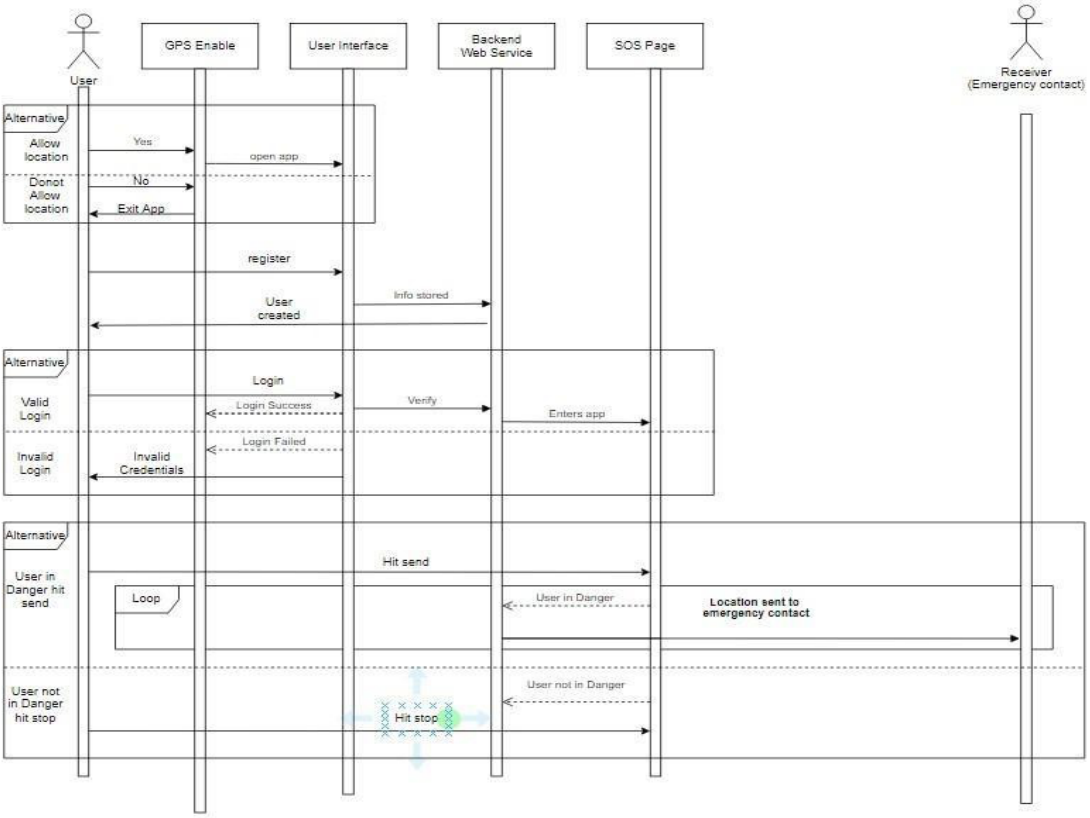
5.3.1 USE CASE DIAGRAM



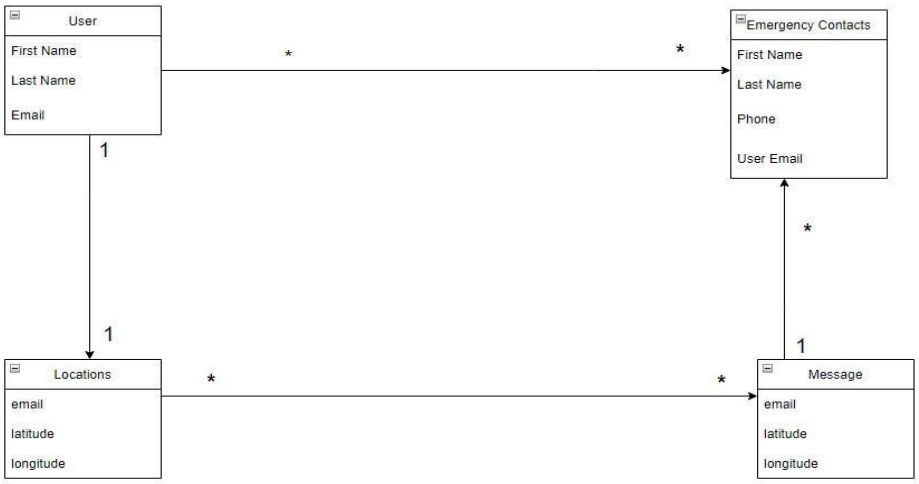
5.3.2 CLASS DIAGRAM



5.3.3 SEQUENCE DIAGRAM

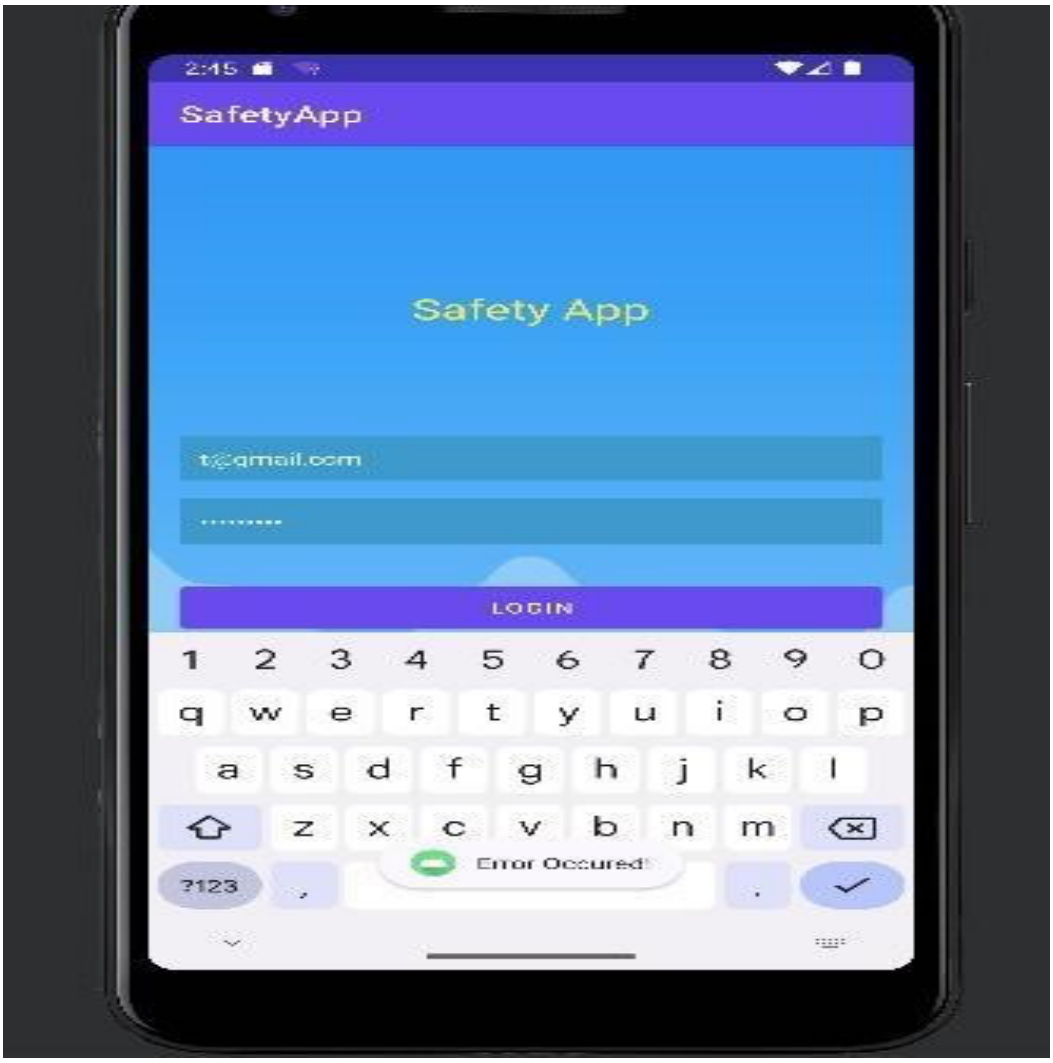


5.4 CONCEPTUAL DATA MODEL

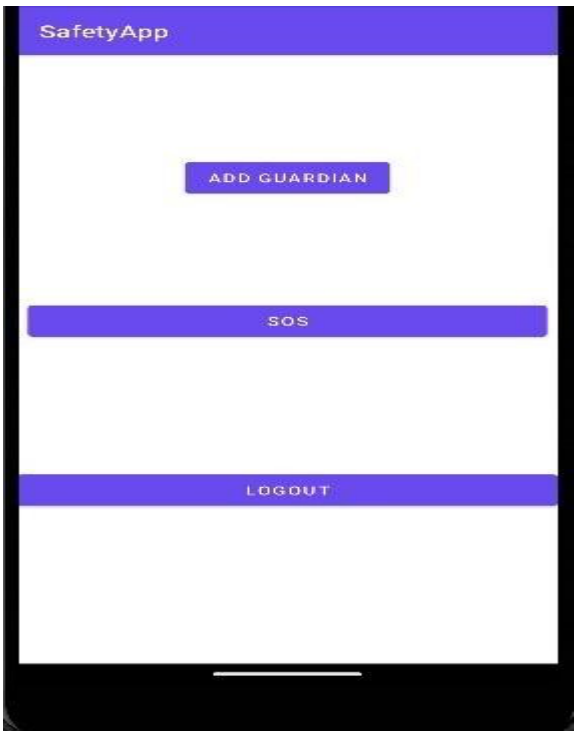


5.5 SCREENSHOTS

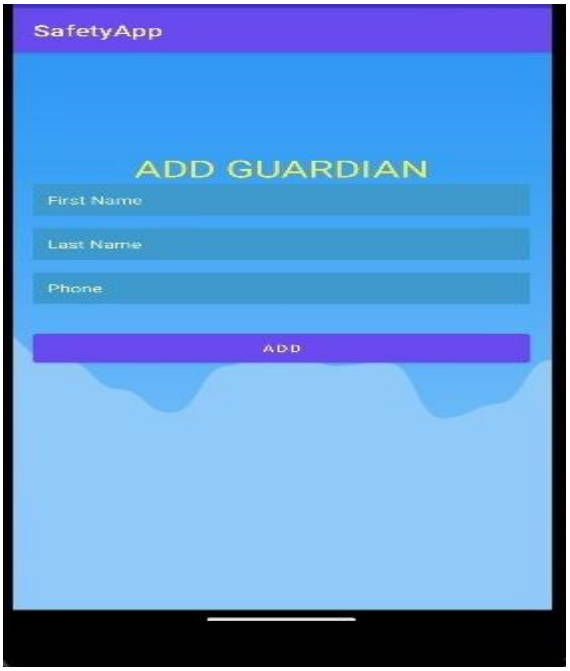
Login Page with Form Validations:



SOS Functionality:

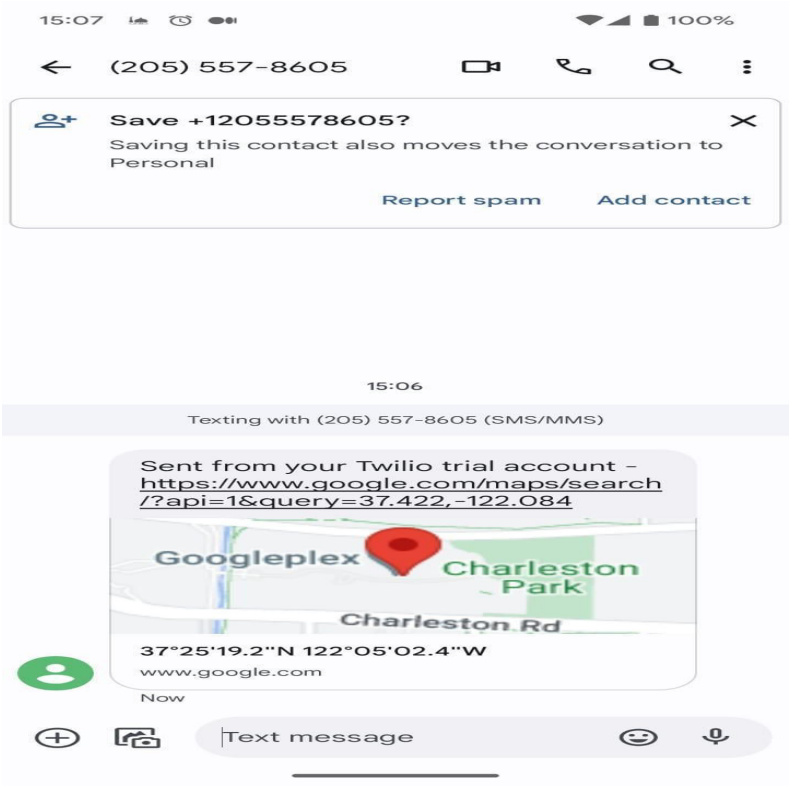


Add Guardian Login page:



When you hit SOS Button:

Live Location of the person who hit SOS button is being sent to Emergency contacts:



6 TEST PLAN

6.1 TEST CASES: “SIGN UP”

Project Name: Safety App **Test Case Name:** Sign up
Test Case Id: CSE5324/Fall 2022/Team5/ Signup

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	User provides First & Last name, valid email address . valid mobile number and a password	User Profile is created	Pass
TC2	User misses any of the mandatory fields	System should warn of missing mandatory fields	Pass

6.2 TEST CASES: “LOGIN”

Project Name: Safety App **Test Case Name:** Login
Test Case Id: CSE5324/Fall 2022/Team5/ Login

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	User provides an existing profiles email address and valid password	Application allows the user in and launches the application home screen	Pass
TC2	User provides a non-existing email address and password	Applications prompts with message of invalid user	Pass

6.3 TEST CASES: “HOME SCREEN”

Project Name: Safety App
Test Case Name: Home Screen
Test Case Id: CSE5324/Fall 2022/Team5/ Homescreen

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	User logins in using the valid credentials	Application launches home screen with options to “Add guardian contacts”, “enable/diable security feature”,“sign out”	Pass

6.4 TEST CASES: “ADD GUARDIAN”

Project Name: Safety App
Test Case Name: Add Guardian
Test Case Id: CSE5324/Fall 2022/Team5/ AddGuardian

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	User selects the feature to add guardian	A form with fields to accept first name, last name and mobile number of guardians is launched	Pass
TC2	User provides details of guardian and clicks the save button	The guardian is saved against the user in the database	Pass

6.5 TEST CASES: “ENABLE/DISABLE SECURITY FEATURE”

Project Name: Safety App
Test Case Name: Enable/disable security feature
Test Case Id: CSE5324/Fall 2022/Team5/ Security Feature

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	User selects enable security feature	The security feature is enabled and option to disable the feature is available	Pass
TC2	User selects disables the security feature	The security feature is disabled and an option to enable the feature is avaialble	Pass

6.6 TEST CASES: “NOTIFY USERS LOCATION”

Project Name: Safety App
Test Case Name: Notify Users Location
Test Case Id: CSE5324/Fall 2022/Team5/NotifyUsersLocation

Test Case No.	Test Case Description	Expected results	Outcome Pass, Fail, Other (comments)
TC1	The user's security feature is enabled	The application tracks users current location and send an message to all of it's registered guardians for change in location	Pass
TC2	The user's security feature is disabled	The applications stop sharing the location to guardians	Pass

7. ASSUMPTIONS AND CONSTRAINTS

7.1 ASSUMPTIONS

The following are lists of assumptions

- The location will always be tracked.
- we assume that the user has a valid email address.
- we assume that the user has entered a valid guardian contact.
- we assume that the user responds with valid answers.
- we assume that the user has an android phone with version 10 and above.

7.2 CONSTRAINTS

The following is a list of constraints

- We can only bring this app to android for now.
- This app is only for emergencies.
- Our app doesn't work for Android versions 9 and below.

7.3 OUT OF SCOPE

The below are out of current phase scope

- App for the IOS devices

7 SCHEDULE ESTIMATES

Task/Milestone Description	Anticipated Start Date	Anticipated End Date	Status
Gather requirements	9/8/2022	9/12/2022	Done
Analysis and Design	9/13/2022	9/18/2022	Done
Software Design Document	9/19/2022	9/21/2022	Done
Sign Up	9/22/2022	9/29/2022	Done
Login	9/30/2022	10/5/2022	Done
Message Notification	10/22/2022	10/31/2022	Done
Location Tracking	11/1/2022	11/7/2022	Done

Test case design and testing	11/12/2022	11/20/2022	Done
Add Guardian	11/22/2022	11/28/2022	Done

8 STAKEHOLDER APPROVAL FORM

Stakeholder Name	Stakeholder Role	Stakeholder Comments	Stakeholder Approval Signature and Date
Nadra Guizani	Development Mgr.		
Azharuddin Irfani Shaik Mohammed	Developer		
Jaswanth Vemulapalli	Developer		
Abdul Haseeb Mohammed	Developer		
Sumanth Reddy Medarametla	Developer		