An app creation project from the students of

Bachelor in Computer Science and Engineering

From

ANNAMALAI UNIVERSITY

Faculty of Engineering and Technology (FEAT)

Department of Computer Science and Engineering

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Submitted to

Dr. K. T. Meena Abarna

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PROJECT REPORT ON WSAFTY APP

Advanced Women Safety App: WSAFETY App

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ABSTRACT

"Harassment Free Nation" is our ultimate aim. We all joined together to create an application on safety for women who lives in this sexually harassed society. Nowadays all're using smartphones but we're using it only for the entertainment we're not aware about the facilities which is provided by the mobile phones. A smart phone can be used efficiently for personal safety or various other protection purposes especially for women. So here we're suggest you an application regarding the safety of women (Note: This app can also be used for any other emergency purposes like Kidnap, Medical Emergency, etc). This is a simple app for all the people who need any help in any kind of emergencies.

Keywords: Harassment, Safety, Women, Android, GPS, URL, Emergency, Contacts, Smartphones.

INTRODUCTION

In today's world, it is not safe for a person to travel alone at night especially for women; it will be high time to travel alone because a woman is not highly strong as men to protect herself from them. The good way to reduce chances in becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to identify and call on resources to help you out of unsafe situations. Here we present Security Alert an application for smart phones working over android platform. Here not only the women get trouble from men for multiple reasons but also some of the men also get many troubles from many women as well, and so it will be a great help for both men and women in this society to get help from their trusted person at anytime and anywhere.

PROJECT PURPOSE

The main purpose of this project is to provide highly reliable security for the safety of women (men too). This proposed system is based upon advanced sensors and GPS. The basic aim of the system is to develop a low-cost solution for GPS based women safety tracking system (WSAFETY App). The main objective of the system is to track the current location of the person which has an android enabled mobile by extracting the longitude and latitude of the targeted person. We provide this application were women and other users can use this application to contact the parents and friends in the time of need or in the case of any emergency.

EXISTING SYSTEM

There are certain Women Safety Apps which are quite similar to our app.

Drawbacks of the Existing System

- Requires good network connectivity
- Requires good Android platform
- Requires location access

Allowance of the Existing System

- Sends alert message
- Sends with your current location

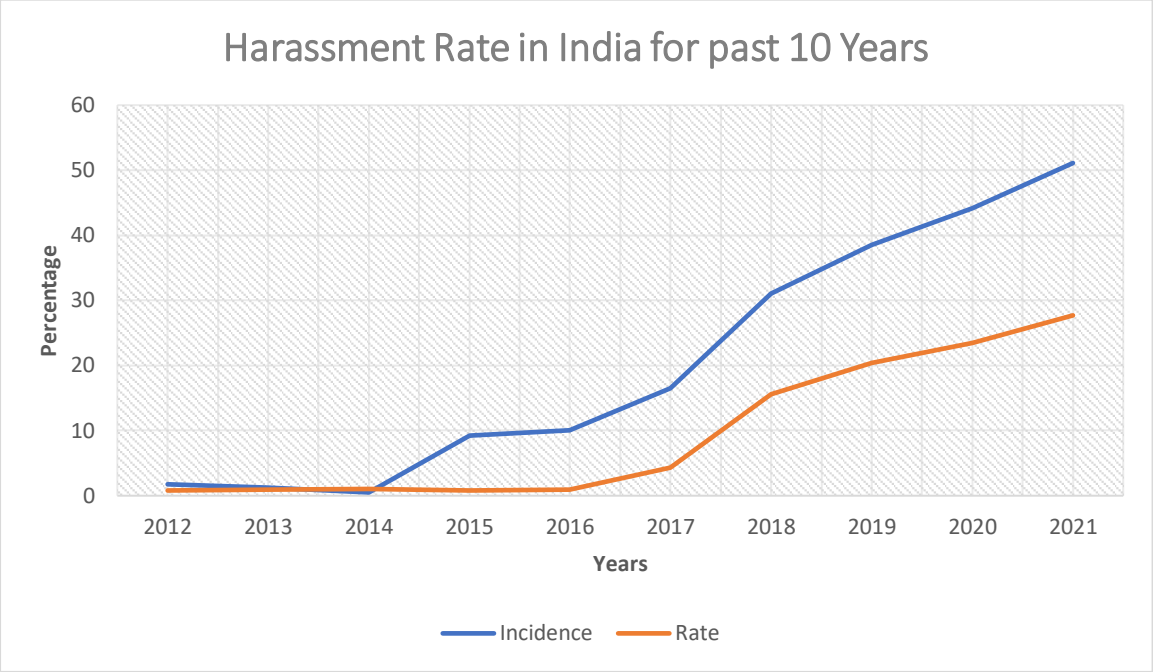


Chart: Women Harassment happened for past 10 years

PROPOSED SYSTEM

This proposed system is form women safety and overcome these disadvantages of the existing system it is a GPS based "Women Safety App" it consists of GPS device that is any Android phone.

- This app is based on advanced sensors
- If the user shakes his/her phone
- A distress signal will be generated automatically
- Then an alert message will be sent to the emergency contact
- This app's interface and process has been created with .xml file and .java file. There are two languages used in this app is Xml and Java

GENERAL FUNCTINALITY

- User-friendly interface
- Time saving
- Easy to integrate and access
- Interactive interface
- SMS alert notification will be sent in case of emergency

PROJECT ANALYSIS

Product Definition

WASFETY App provides a user-friendly interface to their users. This application works in both online and offline mode. Users and other members who have installed this android app can get the help immediately by shacking up their smartphone.

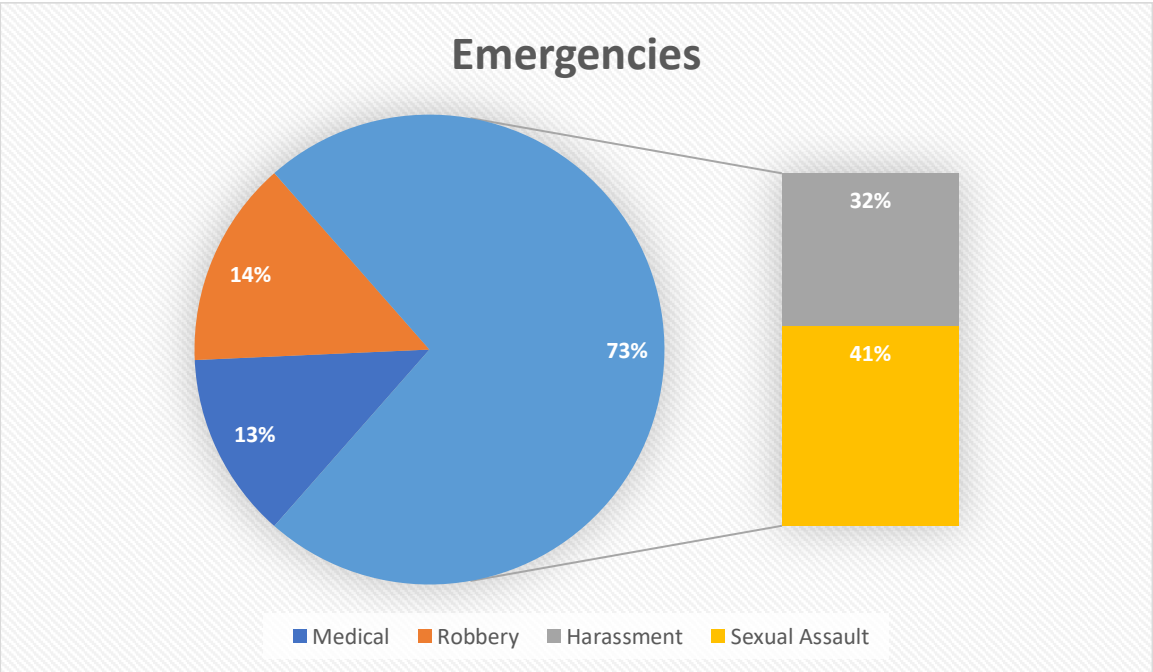


Chart: Rate of emergency situations caused

Feasibility Analysis

- Controlling the amounts of input
- Avoiding inordinate delay
- Controlling real-time errors

Technical Feasibility

A study of resource availability that may affect the ability to achieve an acceptable system it's the most difficult area to ensure at initial stage since the objectives, functions, performance cannot be predicted to its fullest.

Operation Feasibility

It deals with the consideration about working of the system after installation. The proposed system would be beneficial to its users as their needs are fully satisfied.

- Ability to handle large amount of a data
- Fast and accurate information is possible
- Security features based on user roles
- Easy report generation

Thus, considering the above facts management felts that the project is feasible.

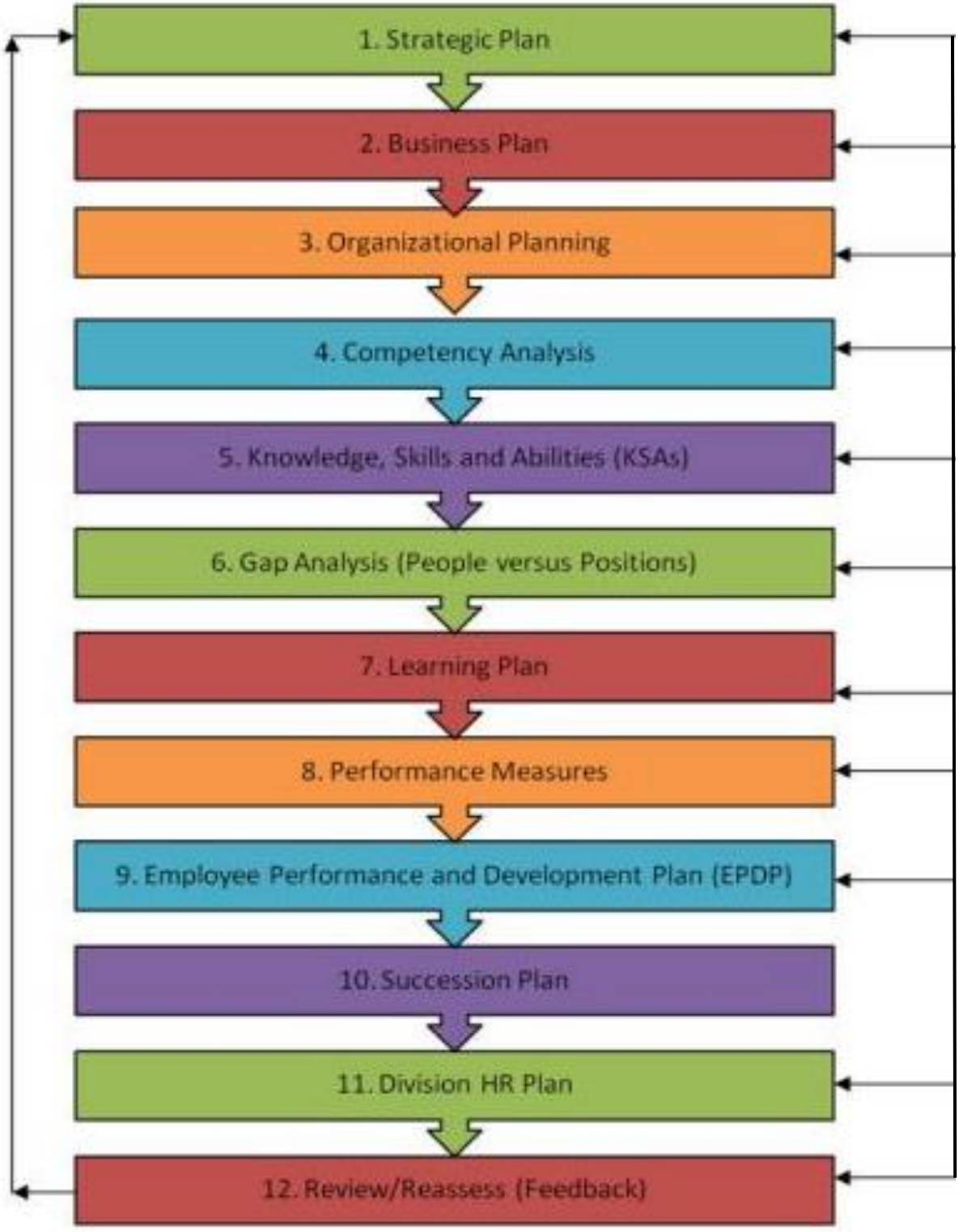
Economic Feasibility

- Application is free of cost
- Employees costs based on salaries and overhead
- Installed in any hardware/software that you purchase
- Additional cost (For Licensing)

PROJECT PLAN

The plan for this project is described as how the activities will be accomplished and it is defined as major task, estimating the time and resources required and provide a framework for management review and control.

PLAN OF THE PROJECT



SOFTWARE REQUIREMENT ANALYSIS

PRODUCT FUNCTIONS

Safety Alert

It's a safety app for all type of users (men or women) whoever needs help in any emergency situation. It works in the process of sending an alert message through the SMS with a text message of "I'm in Trouble!" and with your current location (in the form of link) followed by the message "Sending My Location" – this message will be sent to the emergency contact number which we have registered when you shake your mobile which have been logged in. And after the message sent, the receiver can get to know the location of the help seeker by clicking the link.

EXTERNAL INTERFACE REQUIREMENTS

Hardware Requirements

- Processor: Snapdragon, Dual Core, Quad and Octa
- Memory Space: 10.05 MB
- RAM: 512 MB
- Device: GPS enabled Android Smart Phone

Software Requirements

- Operating System: Android OS
- API Level: 14 or High
- Disk Usage: 20-50 MB

Graphical User Interface

The system shall provide use of icons and toolbars, GUI has been made interactive so that user can feel good while using application and we've provided the proper image of buttons so that user can understand properly.

PERFORMANCE

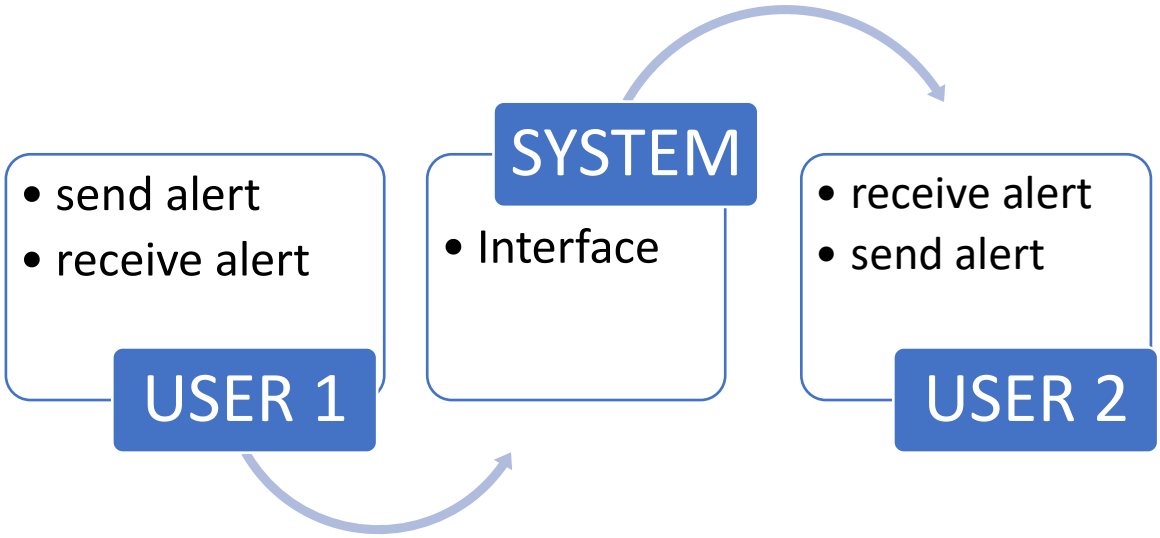
- The product is based on android and can be run on any android version
- The product shall take initial loading time depending on internet connection strength which is need for the user to login
- The performance shall depend upon the hardware and software components of the client

PROJECT DESIGN

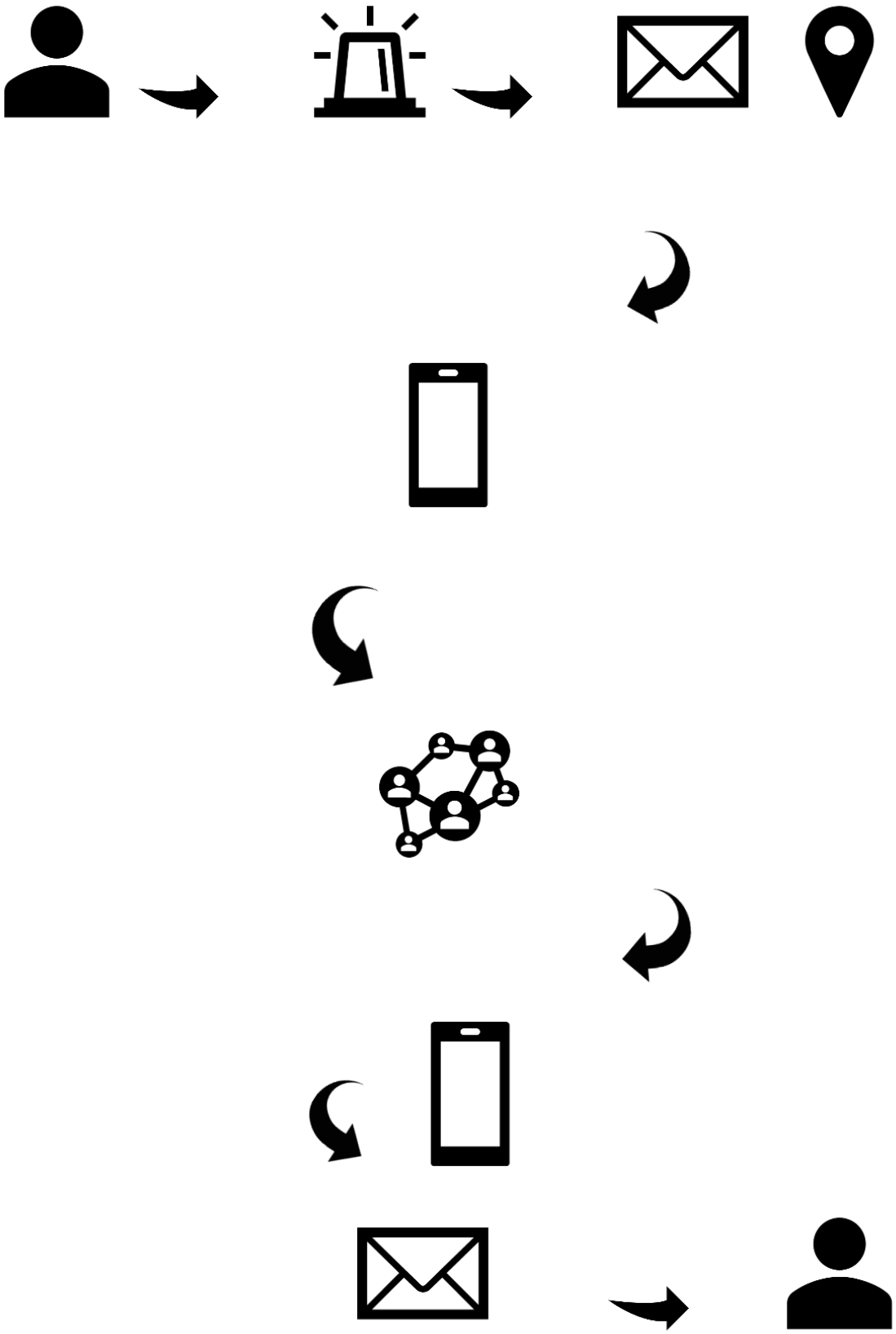
In System design the design functions and operations are described in detail, including screen layouts, business rules, process diagrams and documentations. The output of this stage will describe the new system as a collection of modules or subsystems. The design stage takes as its initial input the requirements identified in the approved documents.

DESIGN NOTATIONS

DATA FLOW DIAGRAM – LEVEL 1



DATA FLOW DIAGRAM – LEVEL 2



STEPS INVOLVED

Step 1: USER 1 will register the contact number of the USER 2 for whom the message needs to be sent

Step 2: Then to hit the START button

Now the number of the receiver has been registered in the mobile

Step 3: If there is an emergency for the USER 1, he/she'll shake his/her phone then the App will wake and send a message to the USER 2

Here the App will send an emergency message "I'm in Trouble" with the current location of the mobile phone in the form of link and the USER 2 can identify the location by clicking the link

TESTING

During testing the program to be tested are executed with set of test cases and the output of program for the test cases is evaluated to determine if the program is performing as expected.

- **Unit Testing:** Typically done by the programmer or not by testers, as it requires detailed knowledge of the internal program design and code
- **Integration Testing:** Modules are typically code modules, individual applications, client and server applications on a network
- **System Testing:** Software testing should ensure that the program as well as working as expected does not also destroy or partially corrupt its operating environment or cause other process within that environment to become inoperative
- **Acceptance Testing:** Normally this type of testing is done to verify if system meets the user specified requirements. User or customer do this testing to determine whether to accept application

IDENTIFICATION OF FUCTIONS

- Register
- Start
- Distress Signal
- Location Access
- Emergency Alert Message

IMPLEMENTATIONS

- Implementation of android system to replace a manual system
- Implementation of new android system to replace an existing system
- Implementation of a modified application to replace an existing one, using the same system

PROJECT LEGACY

CURRENT STATUS OF THE PROJECT

The user could generate a distress signal (SOS) through his/her mobile phone and a push notification will be sent to the emergency contacts of the user with the exact location and respective SMS will also be sent at the user end.

TECHNICAL AND MANAGERIAL LESSON LEARNT

Technical Lesson Learnt

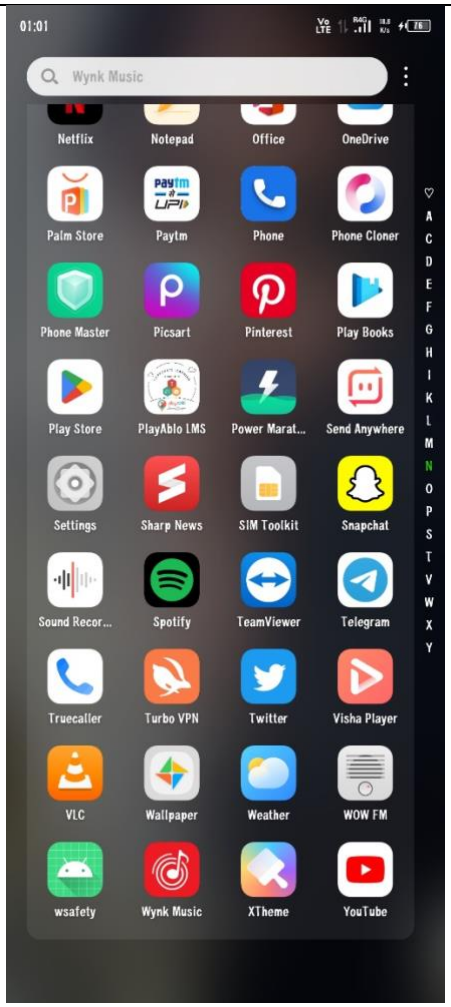
- Installation and knowledge of Android Studio
- Android API levels and their corresponding changes
- Designing of the system
- Working with sensors in order to generate Distress Signals (SOS)
- Designing custom interface using xml files.

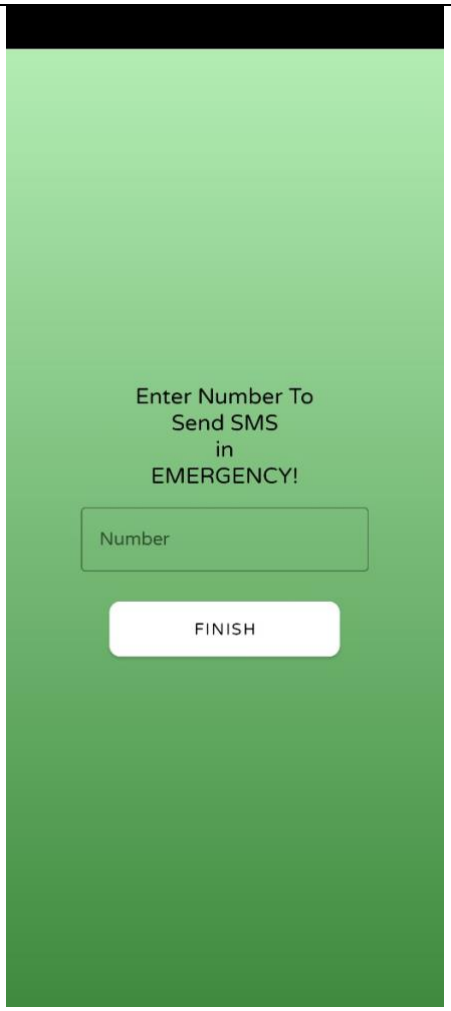
Managerial Lessons Learnt

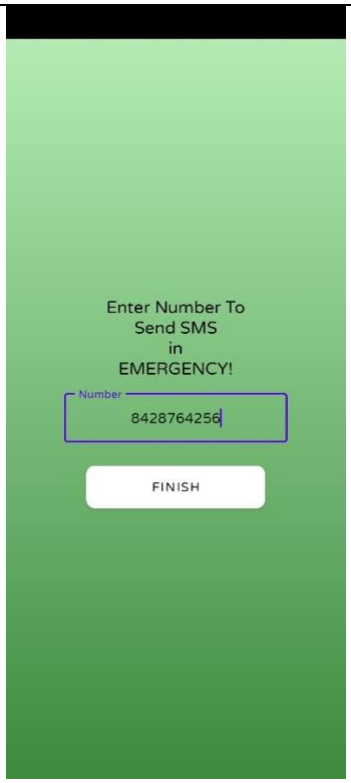
- Ensuring quality and integrity of data
- Planning of duration and schedule of the project
- Strategic planning to avoid miscommunication
- Participative Leadership
- Coordination
- Risk Analysis and Prevention
- Integrating individual work to make it collaborative work

USER MANUAL

USER 1'S ANDROID DEVICE

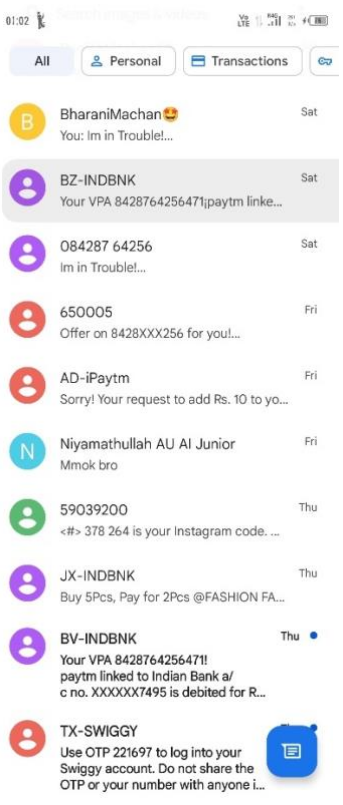





Enter Number To
Send SMS
in
EMERGENCY!
Number
8428764256
FINISH

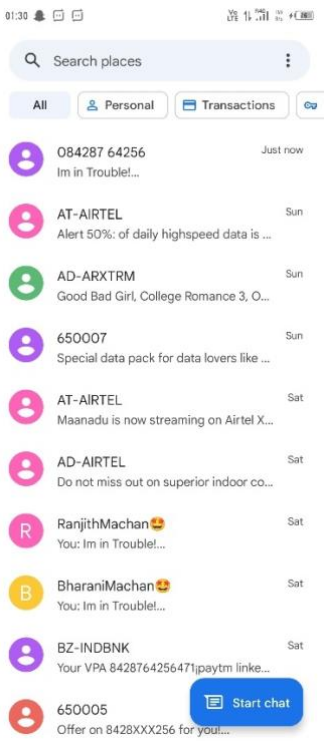

SOS Will Be Sent To
8428764256
START
STOP

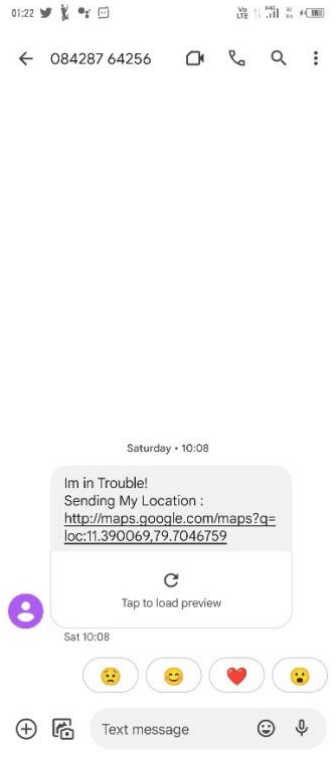

SOS Will Be Sent To
8428764256
START
STOP
Service Started!

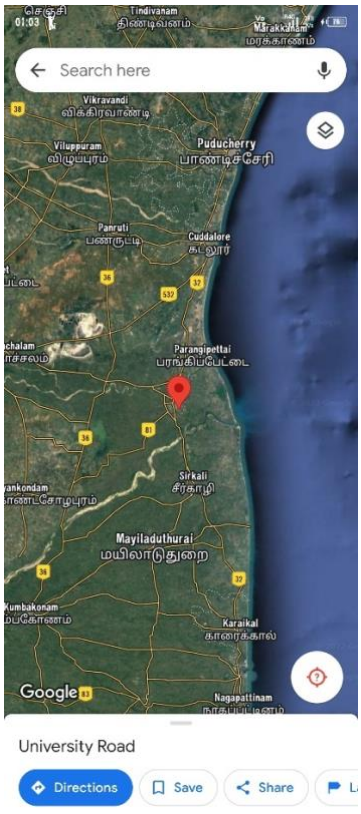

All
Personal
Transactions
BharaniMachan
You: Im in Trouble!...
Sat
BZ-INDBNK
Your VPA 8428764256471@paytm linke...
Sat
084287 64256
Im in Trouble!...
Sat
650005
Offer on 8428XXX256 for you!...
Fri
AD-iPaytm
Sorry! Your request to add Rs. 10 to yo...
Fri
Niyamathullah AU Al Junior
Mmok bro
Fri
59039200
<#> 378 264 is your Instagram code. ...
Thu
JX-INDBNK
Buy 5Pcs, Pay for 2Pcs @FASHION FA...
Thu
BV-INDBNK
Your VPA 8428764256471!
paytm linked to Indian Bank a/
c no. XXXXXX7495 is debited for R...
Thu
TX-SWIGGY
Use OTP 221697 to log into your
Swiggy account. Do not share the
OTP or your number with anyone i...

IN AN EMERGENCY USER 1'S PHONE HAS BEEN SHACKED AND AN EMERGENCY MESSAGE WITH CURRENT LOCATION HAS BEEN SENT TO THE USER 2'S ANDROID DEVICE

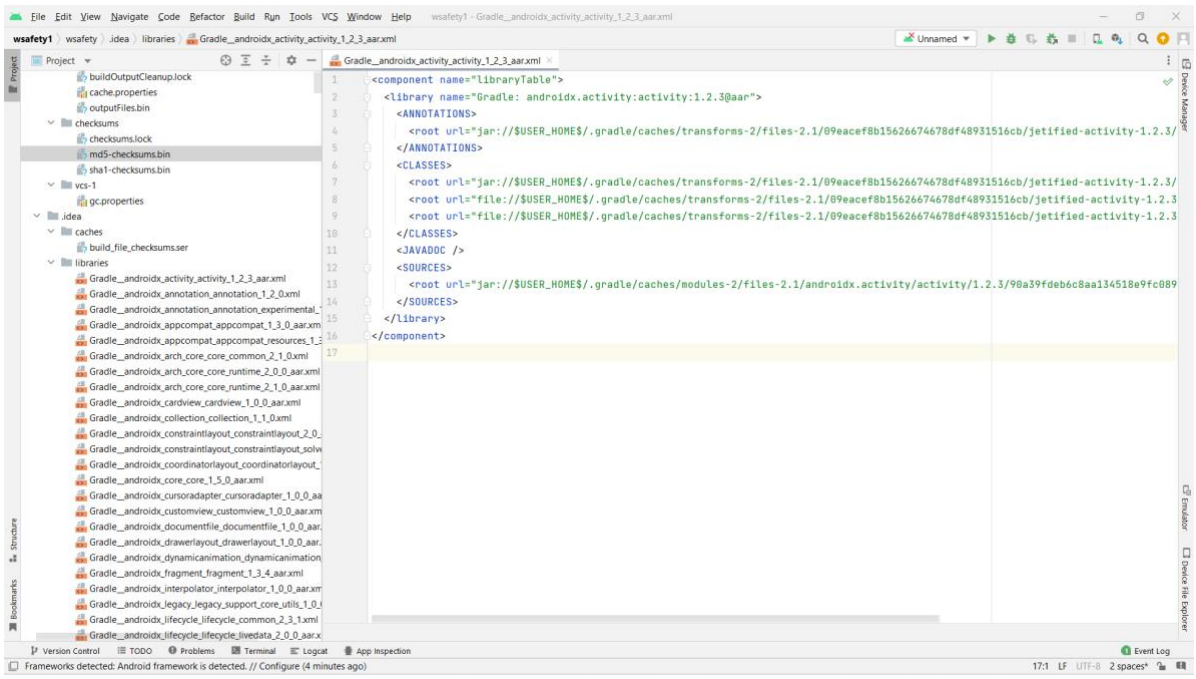
USER 2'S ANDROID DEVICE

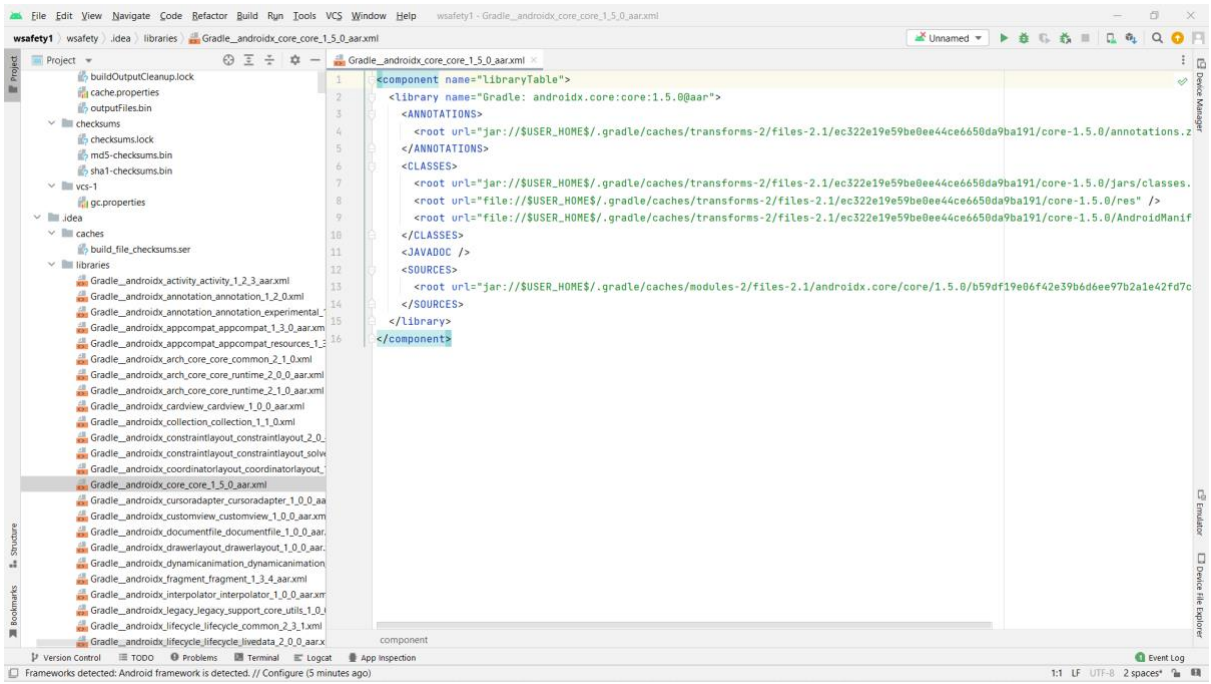


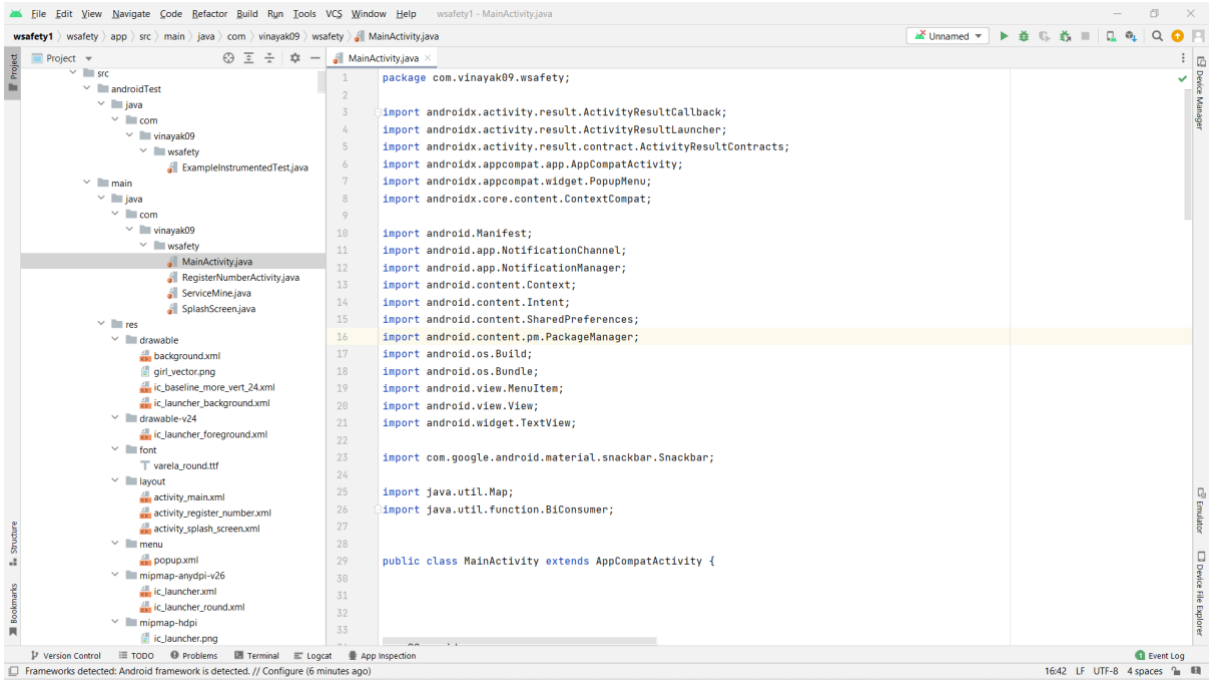




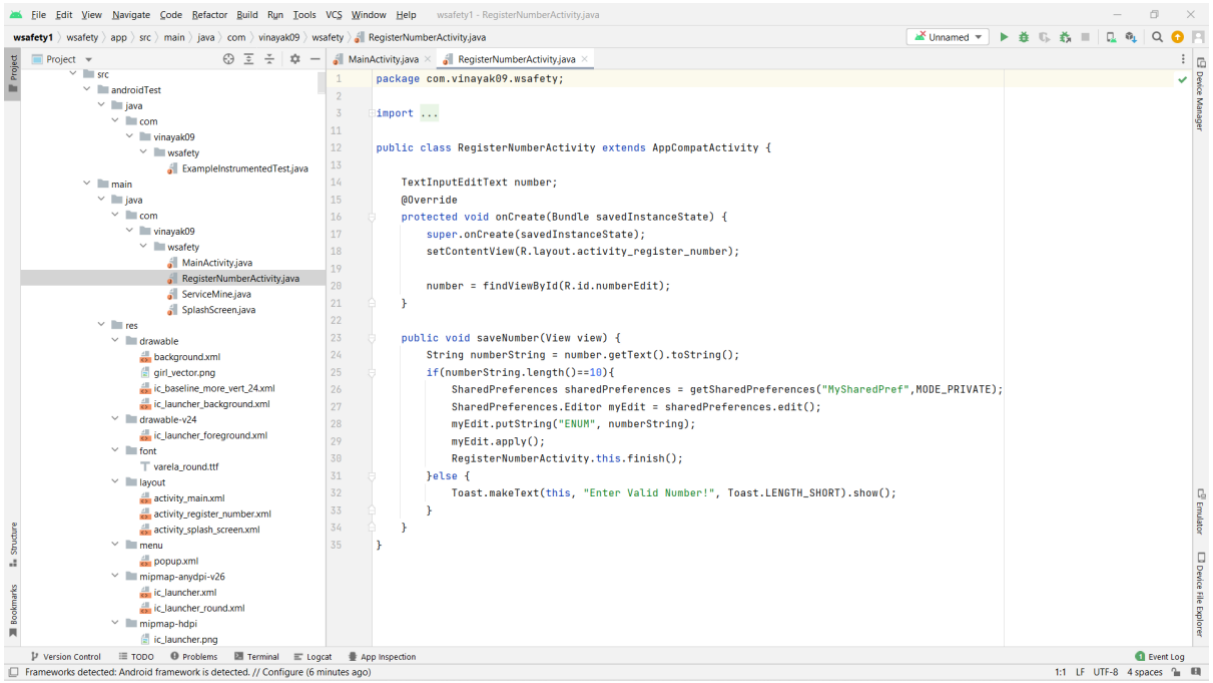
SNAPSHOTS OF THE SOURCE CODE



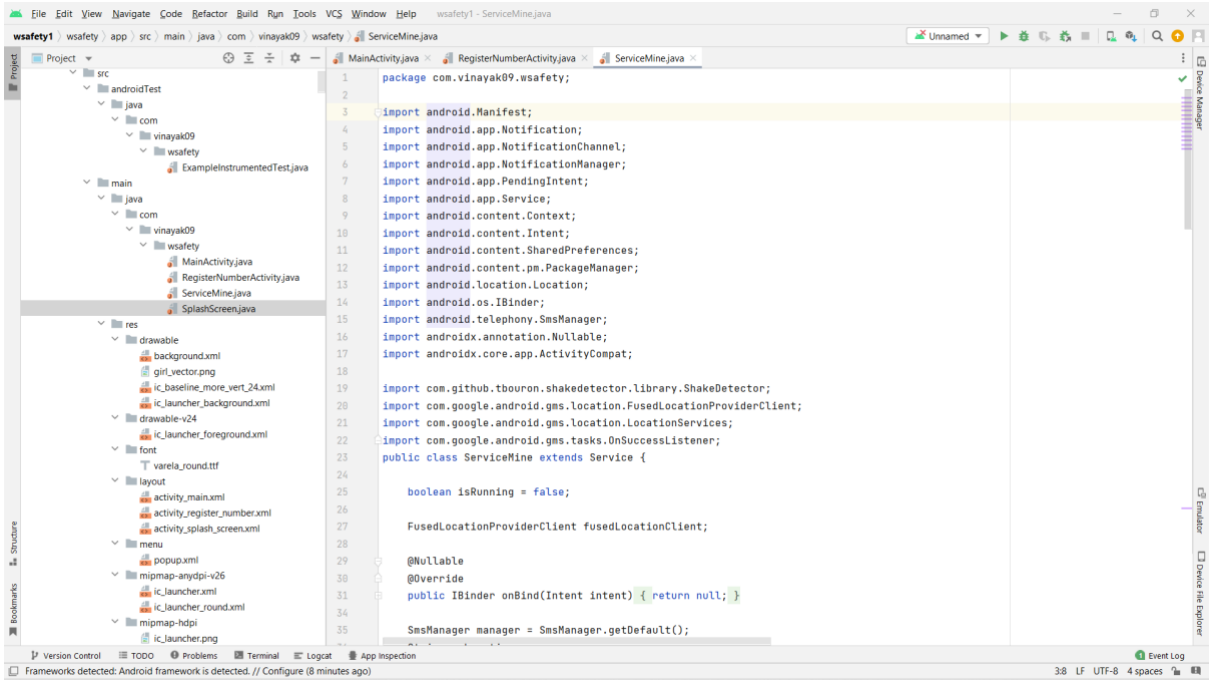




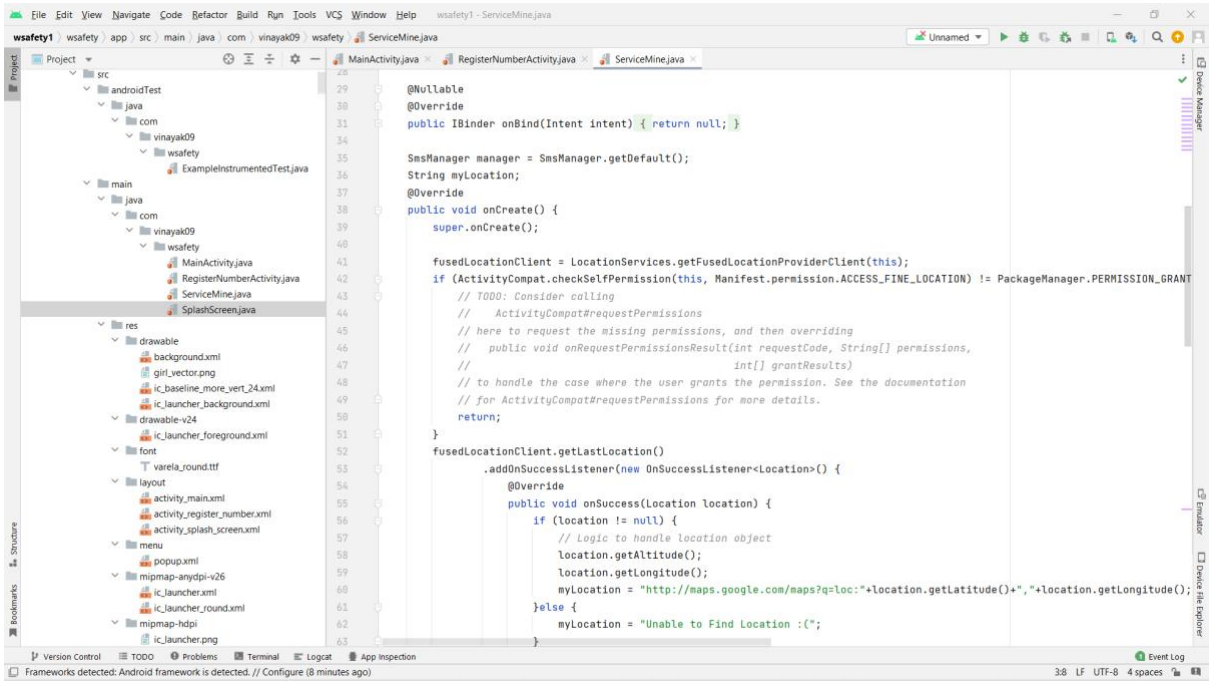
```
package com.vinayak09.wsafety;

import androidx.activity.result.ActivityResultCallback;
import androidx.activity.result.ActivityResultLauncher;
import androidx.activity.result.contract.ActivityResultContracts;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.PopupMenu;
import androidx.core.content.ContextCompat;

import android.Manifest;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.content.pm.PackageManager;
import android.os.Build;
import android.os.Bundle;
import android.view.MenuItem;
import android.view.View;
import android.widget.TextView;

import com.google.android.material.snackbar.Snackbar;

import java.util.Map;
import java.util.function.BiConsumer;


public class MainActivity extends AppCompatActivity {
```



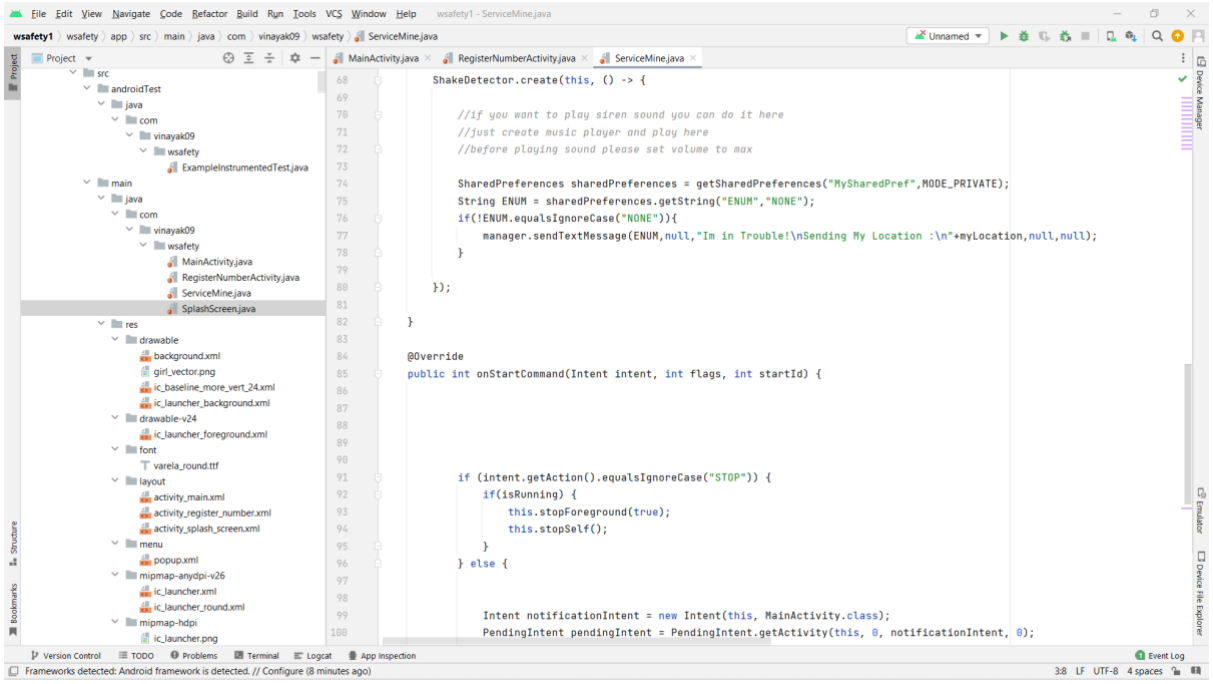
```
package com.vinayak09.wsafety;

import ...

public class RegisterNumberActivity extends AppCompatActivity {

    TextInputEditText number;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_register_number);

        number = findViewById(R.id.numberEdit);
    }

    public void saveNumber(View view) {
        String numberString = number.getText().toString();
        if(numberString.length()==10){
            SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",MODE_PRIVATE);
            SharedPreferences.Editor myEdit = sharedPreferences.edit();
            myEdit.putString("ENUM", numberString);
            myEdit.apply();
            RegisterNumberActivity.this.finish();
        }else {
            Toast.makeText(this, "Enter Valid Number!", Toast.LENGTH_SHORT).show();
        }
    }
}
```



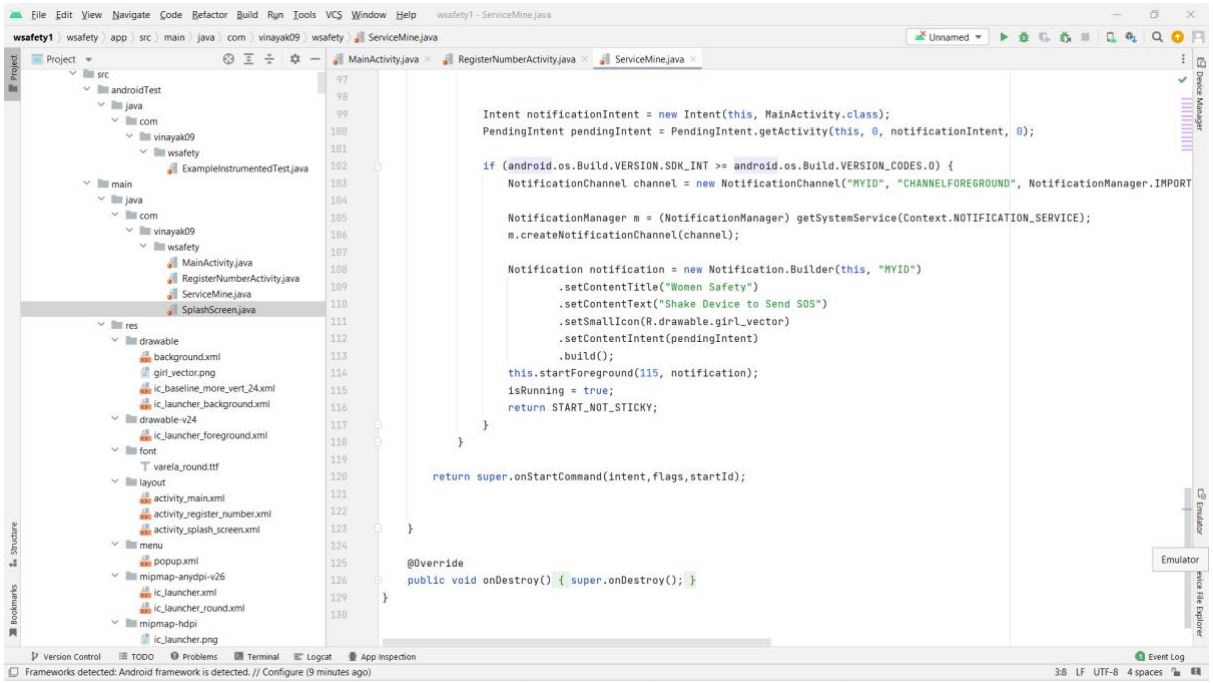
```
package com.vinayak09.wsafety;

import android.Manifest;
import android.app.Notification;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.app.Service;
import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.content.pm.PackageManager;
import android.location.Location;
import android.os.IBinder;
import android.telephony.SmsManager;
import androidx.annotation.Nullable;
import androidx.core.app.ActivityCompat;

import com.github.tbouron.shakedetector.library.ShakeDetector;
import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.tasks.OnSuccessListener;
public class ServiceMine extends Service {

    boolean isRunning = false;

    FusedLocationProviderClient fusedLocationClient;

    @Nullable
    @Override
    public IBinder onBind(Intent intent) { return null; }

    SmsManager manager = SmsManager.getDefault();
```



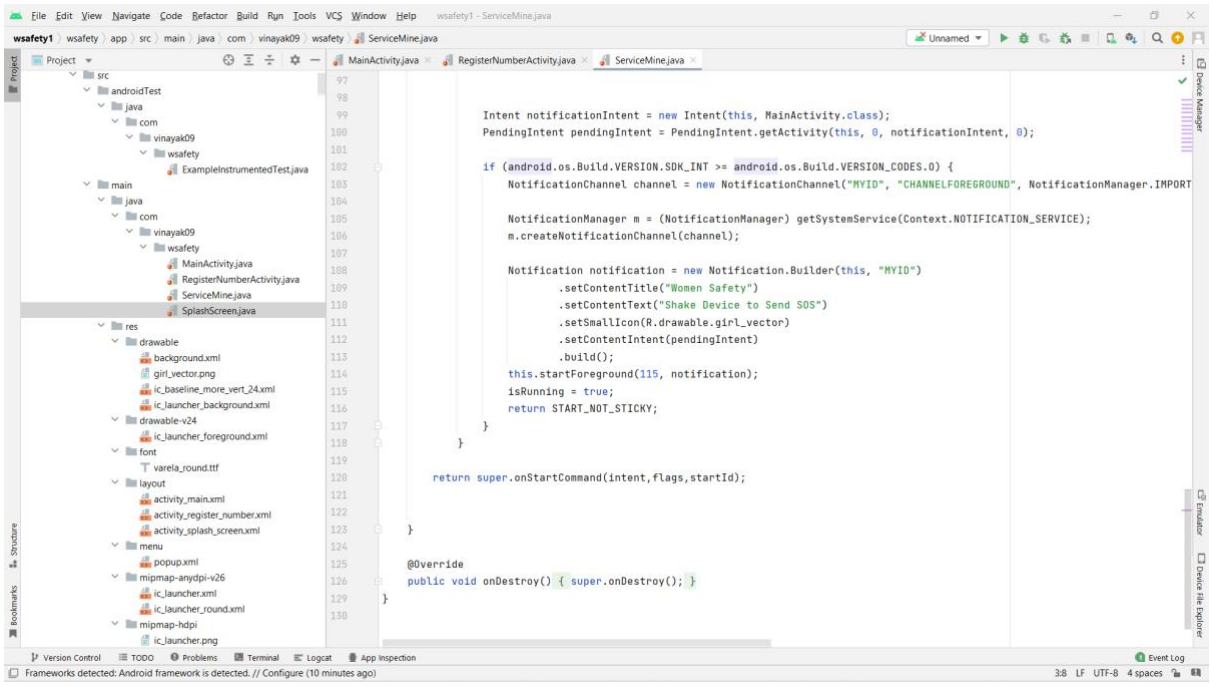
```
    @Nullable
    @Override
    public IBinder onBind(Intent intent) { return null; }

    SmsManager manager = SmsManager.getDefault();
    String myLocation;
    @Override
    public void onCreate() {
        super.onCreate();

        fusedLocationClient = LocationServices.getFusedLocationProviderClient(this);
        if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANT
            // TODO: Consider calling
            //    ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            //   public void onRequestPermissionsResult(int requestCode, String[] permissions,
            //                                          int[] grantResults)
            // to handle the case where the user grants the permission. See the documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        fusedLocationClient.getLastLocation()
                .addOnSuccessListener(new OnSuccessListener<Location>() {
                    @Override
                    public void onSuccess(Location location) {
                        if (location != null) {
                            // Logic to handle location object
                            location.getAltitude();
                            location.getLongitude();
                            myLocation = "http://maps.google.com/maps?q=loc:"+location.getLatitude()+","+location.getLongitude();
                        }else {
                            myLocation = "Unable to Find Location :(";
                        }
```



```
        ShakeDetector.create(this, () -> {

            //if you want to play siren sound you can do it here
            //just create music player and play here
            //before playing sound please set volume to max

            SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",MODE_PRIVATE);
            String ENUM = sharedPreferences.getString("ENUM","NONE");
            if(!ENUM.equalsIgnoreCase("NONE")){
                manager.sendTextMessage(ENUM,null,"Im in Trouble!\nSending My Location :\n"+myLocation,null,null);
            }

        });

    }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {




        if (intent.getAction().equalsIgnoreCase("STOP")) {
            if(isRunning) {
                this.stopForeground(true);
                this.stopSelf();
            }
        } else {


            Intent notificationIntent = new Intent(this, MainActivity.class);
            PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, notificationIntent, 0);
```



```
            Intent notificationIntent = new Intent(this, MainActivity.class);
            PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, notificationIntent, 0);

            if (android.os.Build.VERSION.SDK_INT >= android.os.Build.VERSION_CODES.O) {
                NotificationChannel channel = new NotificationChannel("MYID", "CHANNELFOREGROUND", NotificationManager.IMPORT

                NotificationManager m = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
                m.createNotificationChannel(channel);

                Notification notification = new Notification.Builder(this, "MYID")
                        .setContentTitle("Women Safety")
                        .setContentText("Shake Device to Send SOS")
                        .setSmallIcon(R.drawable.girl_vector)
                        .setContentIntent(pendingIntent)
                        .build();
                this.startForeground(115, notification);
                isRunning = true;
                return START_NOT_STICKY;
            }
        }

    return super.onStartCommand(intent,flags,startId);


    }

    @Override
    public void onDestroy() { super.onDestroy(); }
}
```


File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
wsafety1 - ServiceMine.java
wsafety1 › wsafety › app › src › main › java › com › vinayak09 › wsafety › ServiceMine.java
Unnamed
Project
MainActivity.java
RegisterNumberActivity.java
ServiceMine.java
src
androidTest
java
com
vinayak09
wsafety
ExampleInstrumentedTest.java
main
java
com
vinayak09
wsafety
MainActivity.java
RegisterNumberActivity.java
ServiceMine.java
SplashScreen.java
res
drawable
background.xml
girl_vector.png
ic_baseline_more_vert_24.xml
ic_launcher_background.xml
drawable-v24
ic_launcher_foreground.xml
font
varela_round.ttf
layout
activity_main.xml
activity_register_number.xml
activity_splash_screen.xml
menu
popup.xml
mipmap-anydpi-v26
ic_launcher.xml
ic_launcher_round.xml
mipmap-hdpi
ic_launcher.png
Intent notificationIntent = new Intent(this, MainActivity.class);
PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, notificationIntent, 0);
if (android.os.Build.VERSION.SDK_INT >= android.os.Build.VERSION_CODES.O) {
NotificationChannel channel = new NotificationChannel("MYID", "CHANNELFOREGROUND", NotificationManager.IMPORT
NotificationManager m = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
m.createNotificationChannel(channel);
Notification notification = new Notification.Builder(this, "MYID")
.setContentTitle("Women Safety")
.setContentText("Shake Device to Send SOS")
.setSmallIcon(R.drawable.girl_vector)
.setContentIntent(pendingIntent)
.build();
this.startForeground(115, notification);
isRunning = true;
return START_NOT_STICKY;
}
}
return super.onStartCommand(intent,flags,startId);
}
@Override
public void onDestroy() { super.onDestroy(); }
}
Version Control
TODO
Problems
Terminal
Logcat
App Inspection
Event Log
Frameworks detected: Android framework is detected. // Configure (10 minutes ago)
3:8 LF UTF-8 4 spaces

DECLARATION

In this study, we proposed the design and implementation of a women's safety system in the form of an application. A location tracking subsystem was successfully built-in accordance with the objectives, and the necessary findings were reported. The system will be expanded in accordance with the goals outlined in the future scope.

The study also discusses GPS technology, which may be used to monitor the victim's whereabouts using latitudes and longitudes.

Hereby we declare that this WSAFETY APP will be a great helpful app for who all requires help from the trusted person in any form of emergency.

REFERENCES

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PROJECT BY

T H E B O Y S