

Project Report On

LOCATION TRACKING & Emergency SOS FOR USERS SAFETY

Submitted by

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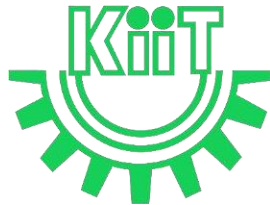
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CERTIFICATE

This is to certify to that this project report entitled “LOCATION TRACKING & Emergency SOS FOR USERS SAFETY” submitted by Ajay Kumar Chaurasiya (Roll no:22054316),ANAND MISHRA(Roll no:22054318),Aditya Gujaral(Roll no:23057003),Bisal S Bisoi(Roll no:23057017),Dibya kirti Pattnaik(Roll no:23057021) Students in School of Computer Science & Engineering, KIIT University, Bhubaneswar in the Academic Session 2023-2024 in the partial fulfilment of the curricular requirements for the award of “ Computer Science & Engineering” is a bonafide record of practical works carried out by them under my supervision and guidance.

ACKNOWLEDGEMENT

We would first like to express our sincere gratitude to our guide Surath Behera, Anjana Satpathy, Kamala Kanta Swain.

for offering kind attention and continuous help and support during the whole period of project making. His kind advice and guidance help to bring the document in this form.

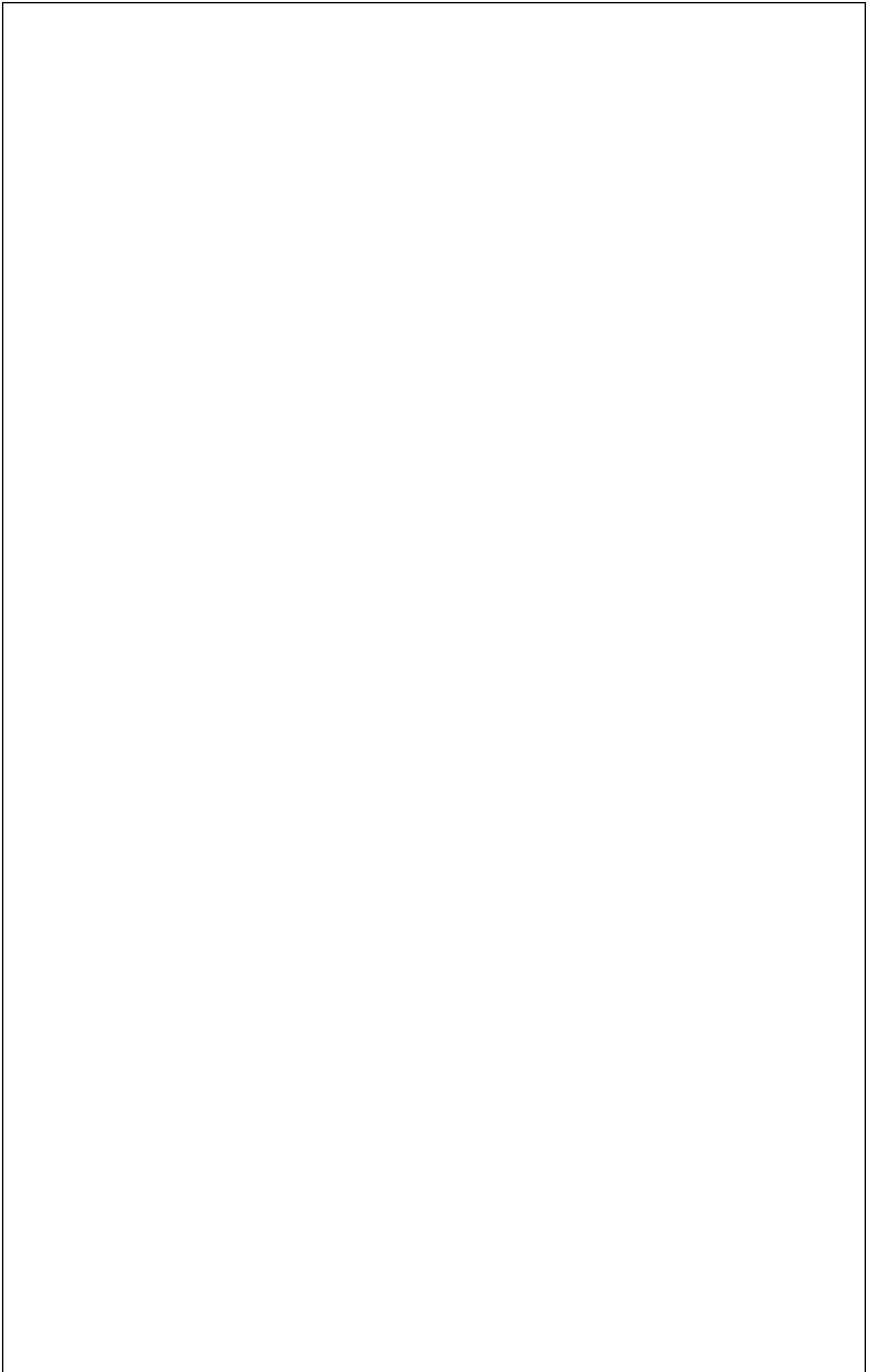
We thankful to all our mates, they are always beside us in all cases of sorrow and joy. They always ready to help in the process of completion of project.

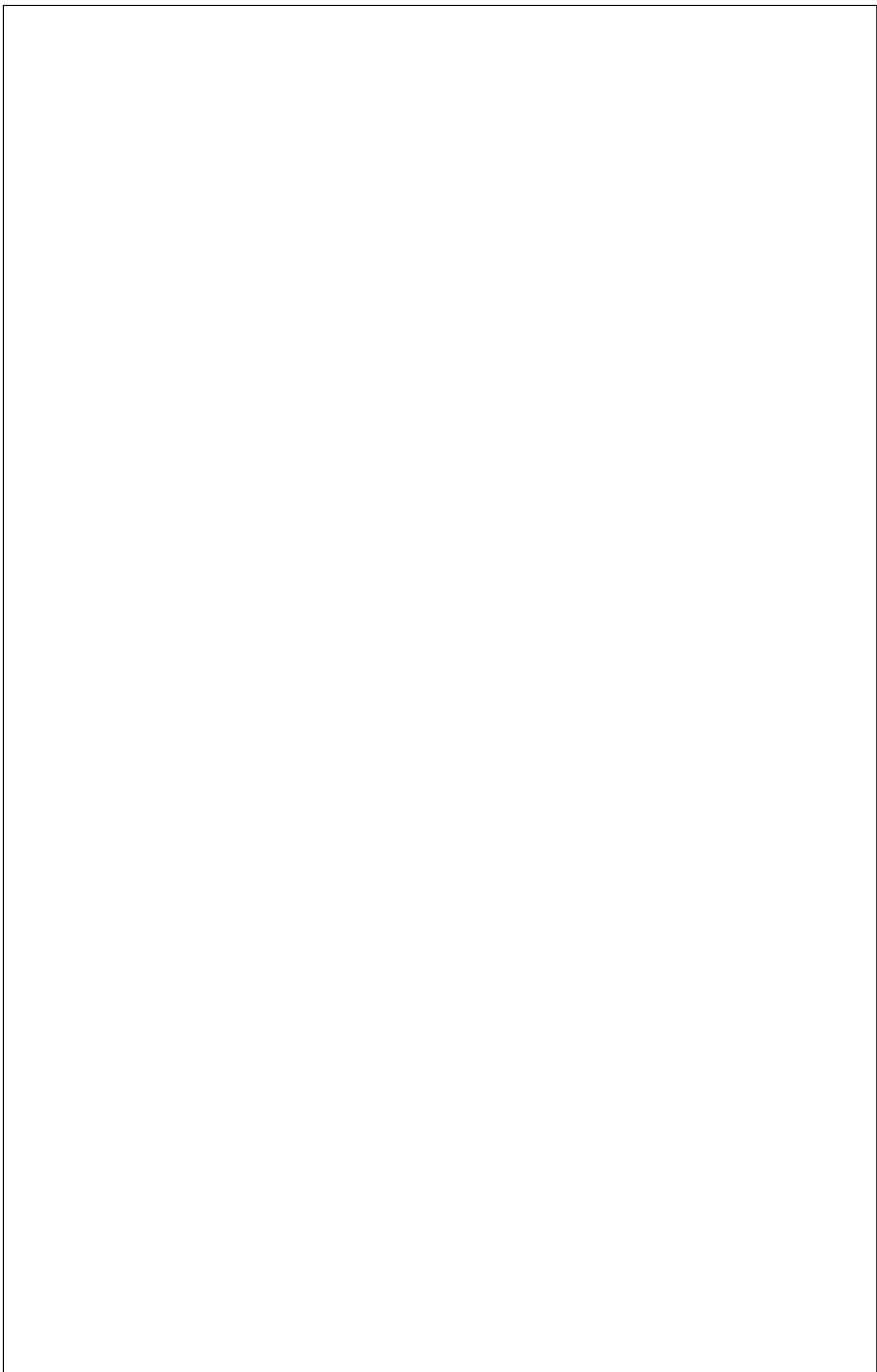
Last but not the least we would like to thank all staff members of the department for their help in whatever way they could able to do.

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Abstract

The safety of women is a concern of increasing urgency in India and other countries. The primary issue in the handling of these cases by the police lies in constraints preventing them from responding quickly to calls of distress. These constraints include not knowing the location of the crime, and not knowing the crime is occurring at all: at the victim's end, reaching the police assuredly and discreetly is a challenge. To aid in the removal of these constraints, this paper introduces a mobile application called Location Tracking App(Women's Safety) that provides women with a reliable way to place an emergency call to the police. The user can easily and discreetly trigger the calling function by shaking her phone, or by explicitly interacting with the user interface of the application via a simple press of a PANIC button on the screen. A message containing the geographical location of the user, as well as contact details of a pre-selected list of emergency contacts, is immediately sent to the police. This paper describes the application, its development, and its technical implementation.





INTRODUCTION

In Today's situation, the safety and security for women is in danger particularly in India. The level of harassment, eve teasing and many dangerous activities have been increasing day by day in many countries. Even after taking certain actions, the Government is not able to provide any security for women. Hence, one of the ways to solve this is through self Defence, where women can protect themselves by using technology - based applications. The most primary part of these applications is GPS tracking, sending SMS, and safe locations. Android apps can sink the information in real time, in order that the assistance is often provided. Several researches are going on this and have designed wristbands, smart watches, etc. Titan Company has designed a primary smart await women's safety called "ACT – App-Enabled latitude and longitude Tracker" which has been used by the user and triggers and alerts when that recipient who has worn the watch is in danger.

In this proposed project, to ensure women safety and security, an Android based application has been developed to handle things during a crisis. This system overcomes the problems like poor network problems, feasibility, supportive and real time monitoring of things. In this project GPS tracking along with the location alert message sends location-based information. The project also integrates a voice recognition system to detect the keyword like „help“, „help me“, „danger“ and matches it with the database during dangerous and distress situations. It provides self-defence tips and SMS alerts when a girl is in danger.

The main functionality of the app begins, at first the user has to make sure that the app is on when she steps out. Whenever any unfortunate problem happens, she has to press SOS or can scream to give the voice command for starting the main function of the app. After beginning the main function, it will send emergency message with victim's current

location to the registered contact. In this project an offline system is also available. After the work is done with the app, the user has to turn it off to stop its functionality.

The early innovations in the android application contain one of the features that the app included in the system. Only contains alert message sending features or only showing safe location. Industry 4.0 and the Internet of Things (IOT) are two of the modern systems in real-world technology. Industry 4.0 likes to promote human-to-technology communication. It aims at a more advanced world, a more secure and easier system for everyday living, and this project

promotes success. The project work is related to advanced and security systems, hoping that it will make some amount of helpfulness to the project.

While the government has taken many steps, the crime rate against women is not minimizing. It is growing daily at a shocking rate. Eve teasing, harassment, domestic violence, is becoming a part of everyday life. Lot of women safety applications have been made to manage this emergency situation. This project is introducing an android app that ensures women's safety and minimizes the danger by identifying the position of the person at risk. This system is designed in such a way that it will stand different from other existing app by having integrated features.

LITERATURE REVIEW

By observing a lot of cases that there has been a shocking increase in crimes against women. 731 rapes reported in first six months of 2019 in Bangladesh which shows how important it is to try to do something immediately to decrease it. With this gained knowledge regarding this purpose and gone through more papers which are associated with this project.

There is an app called "Raksha-women safety alert". This Raksha app have made for women safety so that a woman will always feel secure. It sends alert messages with location to the concerned person.

Here is another app named "I Go Safely" . This application sends 30 seconds recording and video clip to the registered contacts alongside emergency message. If the user shakes the phone or will drop the phone. But if anyone shakes the phone by mistakenly it will start processing which can may save problems. Similar to this there is another app named "Shake to Alert" .

Another example of an application named "Safety pin". the appliance has some features like emergency contacts, GPS Tracking. At the time of danger, the app pins the safe areas alongside their security scores to travel. It allows users to spot areas that are potentially unsafe to assist others.

“Abhaya” is another android application for the security of women. It identifies the situation of the location through GPS and sends a message to the registered contacts that has this location URL and also calls on the important registered contact to help the one in dangerous situations. This application’s unique feature is to send the message continuously to the registered contacts for each five minutes until the “stop” button within the application is clicked. Continuous SMS location tracking helps to seek out the victim’s location quickly and to rescue safely [6].

To use the Himmat application at beginning, the user has got to register at the Delhi Police website. After the registration for the acceptable authentication OTP is shipped and verified, which has got to be entered at the time of finishing the app configuration. During a distress situation, if the SOS alert is shipped from the app by the user the app will send the GPS information alongside video/audio data which can be transferred to the Police room following which the police will take action.

Bsafe application will make the contact follow through the trail GPS and also set a timed reminder which matches off if you haven't „checked in“. Moreover, it'll even have fake call facility which make your phone ring and at an equal time notifying the emergency contacts with location, video and even siren.

Studies shows that the women harassment issue mainly focused on some applications with limited features. There are some existing apps like 'Hollaback', 'Move Free', 'MehfoozAurat' [7], etc.

Move Free contains general database with Names and health related attributes. It also contains police station database with in West Bengal, India. However, it's said that the wearable sensor band has not yet been developed because the model for real time monitoring health data for women. The MehfoozAurat main idea is to issue right. Another application named 'SafetiPin' focused on gives the safe route to travel sourcing, which again doesn't make sure the reliable feedbacks. The major problem with this application is that criminals may use this application and mislead the women and that cause problem for them.

According to Olaleye (2019), Short Message Service (SMS) technology is one among the foremost stable and most regularly used mobile communication technology after phone calls. Most students of tertiary institutions carry mobile phones which is capable of receiving SMS as a way of event notification.

In theory, text message is often used either as a one-way communication to transmit the user information like reminder, alert, notification etc., or as a two-way communication that permits the user to send and receive. Using this, it's possible to save lots of resources by e.g., avoiding irrelevant visits and phone calls; the mobile messaging in institutions has been a topic of important research work decades.

ANDROID OS: IDEAL PLATFORM FOR MOBILE APP DEVELOPMENT

Android is a mobile operating system developed by the Open Handset Alliance, led by Google, and other companies. Android is an open source and Linux-based Operating System for mobile devices. Android is designed primarily for touch screen mobile devices such as Smartphone and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touch screen devices, Google has further developed Android TV for televisions, Android Auto for cars, and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics. Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android. The source code for Android is available under free and open-source software licenses. The few reasons which make android an ideal platform development is: Open source, larger developer and community reach, Increased marketing, Inter App Integration, Reduce cost of development, Higher success ratio and Rich development environment. Figure 1 shows the global mobile OS market share, in terms of sales to end users, from 2009 to 2016. In the third quarter of 2015, 84.7 percent of all smart phones sold to end users were phones with the Android operating system.

PROBLEM DEFINITION

In the world, women are unsafe to travel alone at night. To provide this woman safety how to take them out from any unsafe situation to protect them from being a victim to any violent action is to identify all resources in a hand and use them. In today's generation, almost all use smartphones. Therefore, the wisest option is to have a safety application on our phones. Hence this application has been built. This app, unlike other apps that work only at the time of emergency, works also to take preclusive measures as it is rightly said that "Precaution is better than cure".

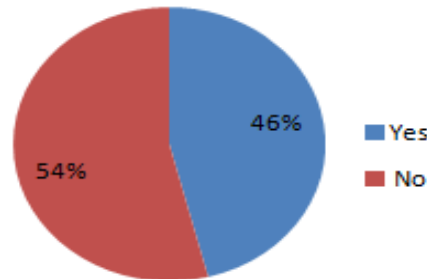
This paper we made revolves around the concept of making phone apps for women safety that would fetch the real-time location using GPS and also the vehicle no using QR Code scanner. It would then send a text message to the emergency contacts added by the user. It is our try to make each woman using our app to not to feel alone and unsafe. "NAARI, we care for you".

Almost around 64% of women populations said that they do not find going out at night especially between 11 to 12 pm a good option as most of the crimes and mis- haps occur during that time. Therefore, women take to finishing their work before 10:00 pm. There were almost 22% of women who stated that stepping out after 10 even in the presence of cops is not a wise choice. After all this analysis the result revealed that girls experience teasing by male counterparts and they take not being out during that time as a safety measure.

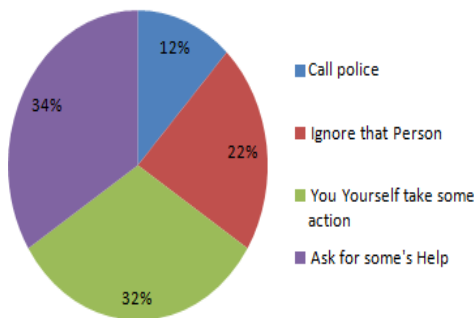
But at the same time, it was very pleasing to hear that almost 36% of women do not need help from anybody or cops and said that they can deal in such situations by themselves. There was also a very less percentage of girls who stated that they always have either a birthday or family member with the more nearby them at night. Therefore, feel safe as they do not find any exceptional action taken against the mat night.

EXISTING SYSTEM

Break-Up of Women respondents who feel safe at Night



Action taken by Respondents



Time Duration when Women Respondent's avoid going Out

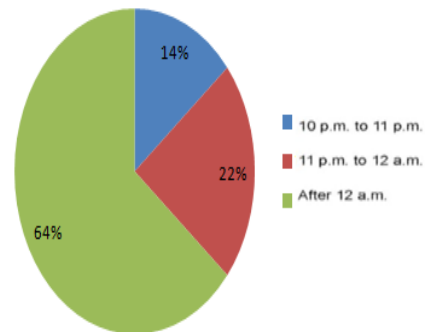


Figure: Women respondents at Night and Action taken care, when they are outside home

When we think about the safety of a woman/girl in the city, we considered 354 women candidates living in the city about our survey. From that survey, we represent our analysis in the depicted Figure1 and concluded that 54% of women realize unsafe at night time whereas 46 percent of women do. Which puts us with a conclusion that more women feel unsafe at night time? After finding this percentage wreaked the women about their feeling when they have police patrolling in their vicinity. To this 68% of women replied that they have seen police patrolling at night whereas rest 32% of women have never seen police patrolling at night. Those who have seen cops pa- trolling they said that they feel safe at night.

PROPOSED MECHANISM

In this proposed system, the user writes the message content and also selects the contacts to which the message has to be sent and saves it. So, when he is in some danger by just opening the app and pressing the HELP button, the message stored will be sent to those numbers he has added in this application. So that he can receive the help at the correct time.

1. Your loved ones and close friends can automatically receive text messages.
2. Exact time of the alert triggered. Your location (with map link).
3. The battery level of your phone.
4. It monitors the frequent number of shakes in a particular locality or area and marks that particular location as DANGERZONE.
5. Automatic prompt for activating location.
6. Self-defense video for guiding victims, how to remain safe and protect in dangerous situations arising.

Adding Contact

Using this module Adding Emergency contacts numbers save it, so adding contact nos.

Messages

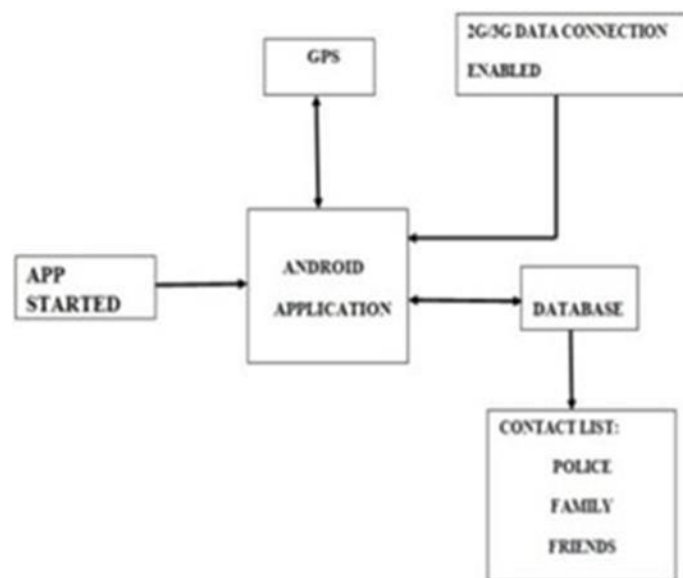
Store some messages, to your danger situation. It's
in an emergency situation.

FEATURES OF THE PROJECT

To reduce user effort and solve problems inherent to the cellular phones small screen, several functions are provided on the cellular viewer.

- Supports multiple connections at the same time.
- Different work modes: "view only" and "full control".
- Different display modes: "windowed", "full screen", and "scaled".
- Runs as a service on the NT systems.
- Works through the firewalls and supports DHCP.
- Supports high screen resolutions and colour depths.

The proposed architecture depicted below shows the exact flow of control of the android application. Here the database acts as a storing media between the two mobile devices. The database information i.e., to which database the information has to be sent, the URL of the database is coded itself in the application. From the database, the location coordinates are sent continuously to the registered contacts of the user.



IMPLEMENTATION

This android application is useful when the user is in some problem or needs any help. When the user opens this application, can see a Start button. When the user is in some difficulty or needs any help, they simply need to open the app and click on the “Start” button. This application sends the message to those contact numbers which he has stored by detecting the shaking of the phone.

The total evaluation can be done in three major steps which are described individually. Evaluation describes the whole implementation of the application in three major steps.

The first major step is to enter the contact details in the application created. Those contacts can be our relatives, friends and chief cop of the particular city the person we live in. When the application is installed in the smartphone for the first time the above contact details should be provided.

The application will save the given information. The second major step is to send the GPS information (GPS information can be in the form of the Co- ordinates or the URL which leads to the location of the person any stock map application in the likes of third-party application like Google, Nokia etc.) to the registered contacts at danger times or when the person is needed to be rescued. This step is followed only when the rescue button is pressed in application. The



whole process of this step is done only when the device is connected to the proper mobile network and location service in the device is switched on (GPS).

The third major step comprises work done in sending the message containing location URL continuously to the registered contacts. Here, we have set the time interval as 5 minutes, so for every five minutes of time-lapse, SMS is sent to the registered contacts. Therefore, the exact location of the person can be tracked by the application continuously which is the primary aim of the proposed system and the person can be rescued.

RESULTS

The testing results of the mentioned three sections are provided with screen shots taken in various intervals of time from the root device and contact's device. Here, the root device means the device over which the rescue application is started; it means the user's device. The contact's device means the device to which the user's location information is sent continuously. For installing the application in the mobile phone, firstly in the settings, "allow non- market apps to be worked over the device" must be checked depicts the settings of the device such that only by placing checkmark over the mentioned icon, the app will be installed on the device. The Woman Safety app icon can be placed anywhere on the home screen of the smart phone so that we can immediately touch over the application when we are in danger. Once the application is installed on the mobile for the first time, the following screen shown in figure 7 will appear. Figure 8 In this user have to enter the emergency number they want to send the location to. When you click on the Finish icon figure 9 will appear. Figure 9 In this there are to buttons, one is "Start" to start the session of the app to send the alert message and the location to the specified user's numbers. And second one is "Stop", which end the session of app.

SOURCE CODE

Manifests:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.Dibyansu03.wsafety">

    <uses-feature
        android:name="android.hardware.sensor.accelerometer"
        android:required="true" />

    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
    <uses-permission
        android:name="android.permission.ACCESS_COARSE_LOCATION"/>
    <uses-permission android:name="android.permission.FOREGROUND_SERVICE" />
    <uses-permission android:name="android.permission.SEND_SMS"/>

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Wsafety">
        <activity
            android:name="com.Dibyansu03.wsafety.RegisterNumberActivity"></activity>
        <activity android:name="com.Dibyansu03.wsafety.SplashScreen">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name="com.Dibyansu03.wsafety.MainActivity"/>

        <service
            android:name="com.Dibyansu03.wsafety.ServiceMine"
            android:enabled="true"
            android:foregroundServiceType="location" />
    </application>

</manifest>
```

Main Activity:

```
package com.Dibyansu03.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;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onResume() {
        super.onResume();
        SharedPreferences sharedPreferences =
getSharedPreferences("MySharedPref",MODE_PRIVATE);
        String ENUM = sharedPreferences.getString("ENUM","NONE");
        if(ENUM.equalsIgnoreCase("NONE")){
            startActivity(new Intent(this,RegisterNumberActivity.class));
        }else {
            TextView textView = findViewById(R.id.textNum);
            textView.setText("SOS Will Be Sent To\n"+ENUM);
        }
    }
}
```

```

    }
}

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

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

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

}

private ActivityResultLauncher<String[]> multiplePermissions =
registerForActivityResult(new ActivityResultContracts.RequestMultiplePermissions(), new
ActivityResultCallback<Map<String, Boolean>>() {
    @Override
    public void onActivityResult(Map<String, Boolean> result) {

        for (Map.Entry<String, Boolean> entry : result.entrySet())
            if (!entry.getValue()) {
                Snackbar snackbar =
Snackbar.make(findViewById(android.R.id.content), "Permission Must Be Granted!",
Snackbar.LENGTH_INDEFINITE);
                snackbar.setAction("Grant Permission", new View.OnClickListener() {
                    @Override
                    public void onClick(View v) {
                        multiplePermissions.launch(new String[]{entry.getKey()});
                        snackbar.dismiss();
                    }
                });
            }
    }
});

```

```

        snackbar.show();
    }

}

});

public void stopService(View view) {

    Intent notificationIntent = new Intent(this,ServiceMine.class);
    notificationIntent.setAction("stop");
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
        getApplicationContext().startForegroundService(notificationIntent);
        Snackbar.make(findViewById(android.R.id.content),"Service Stopped!",
Snackbar.LENGTH_LONG).show();
    }
}

public void startServiceV(View view) {

    if (ContextCompat.checkSelfPermission(this, Manifest.permission.SEND_SMS) ==
PackageManager.PERMISSION_GRANTED && ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) ==
PackageManager.PERMISSION_GRANTED && ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) ==
PackageManager.PERMISSION_GRANTED ) {
        Intent notificationIntent = new Intent(this,ServiceMine.class);
        notificationIntent.setAction("Start");
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
            getApplicationContext().startForegroundService(notificationIntent);
            Snackbar.make(findViewById(android.R.id.content),"Service Started!",
Snackbar.LENGTH_LONG).show();
        }
    }else{
        multiplePermissions.launch(new
String[]{Manifest.permission.SEND_SMS,Manifest.permission.ACCESS_COARSE_LOCATI
ON,Manifest.permission.ACCESS_FINE_LOCATION});
    }
}

```

```

    }

    public void PopupMenu(View view) {
        PopupMenu popupMenu = new PopupMenu(MainActivity.this, view);
        popupMenu.getMenuInflater().inflate(R.menu.popup, popupMenu.getMenu());
        popupMenu.setOnMenuItemClickListener(new
PopupMenu.OnMenuItemClickListener() {
            @Override
            public boolean onMenuItemClick(MenuItem item) {
                if(item.getItemId() == R.id.changeNum){
                    startActivity(new Intent(MainActivity.this, RegisterNumberActivity.class));
                }
                return true;
            }
        });
        popupMenu.show();
    }
}

```

Register Number Activity:

```

package com.Dibyansu03.wsafety;

import androidx.appcompat.app.AppCompatActivity;

import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Toast;

import com.google.android.material.textfield.TextInputEditText;

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();
}
}
}

```

Service Mine:

```

package com.Dibyansu03.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.tbouren.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();
    String myLocation;
    @Override
    public void onCreate() {
        super.onCreate();

        fusedLocationClient = LocationServices.getFusedLocationProviderClient(this);
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED && ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
            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.sendMessage(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);

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

            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();
}

```

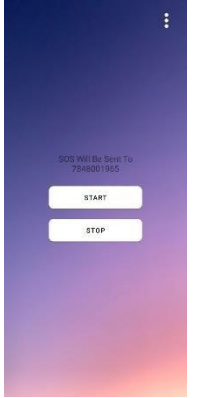
```
}  
}
```

Splash Screen: -

```
package com.Dibyansu03.wsafety;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.os.CountDownTimer;  
  
public class SplashScreen extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_splash_screen);  
  
        new CountDownTimer(1000,500){  
            @Override  
            public void onTick(long millisUntilFinished) {  
  
            }  
  
            @Override  
            public void onFinish() {  
                startActivity(new Intent(SplashScreen.this,MainActivity.class));  
                SplashScreen.this.finish();  
            }  
        }.start();  
    }  
}
```

LAYOUT

Activity Main Layout



```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/photo_1569982175971_d92b01cf8694"
    tools:context=".MainActivity">
```

<View

```
    android:layout_width="40dp"
    android:layout_height="40dp"
    android:layout_alignParentEnd="true"
    android:layout_margin="20dp"
    android:background="@drawable/ic_baseline_more_vert_24"
    android:clickable="true"
    android:focusable="true"
    android:onClick="PopupMenu" />
```

<RelativeLayout

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true">
```

<TextView

```
    android:id="@+id/textNum"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:text="SOS Will Be Sent To\n"
    android:textAlignment="center"
    android:textSize="18sp" />
```

<com.google.android.material.button.MaterialButton

```
    android:id="@+id/start"
    android:layout_width="200dp"
    android:layout_height="60dp"
```

```
android:layout_below="@id/textNum"
android:layout_marginTop="20dp"
android:layout_marginBottom="10dp"
android:backgroundTint="#ffffff"
android:onClick="startServiceV"
android:text="Start"
android:textColor="@color/black"
app:cornerRadius="10dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

```
<com.google.android.material.button.MaterialButton
```

```
android:id="@+id/stop"
android:layout_width="200dp"
android:layout_height="60dp"
android:layout_below="@id/start"
android:backgroundTint="#ffffff"
android:onClick="stopService"
android:text="stop"
android:textColor="@color/black"
app:cornerRadius="10dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@id/start" />
```

```
</RelativeLayout>
```

```
</RelativeLayout>
```

Activity Register Number Layout



```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:background="@drawable/background"
android:layout_height="match_parent"
tools:context=".RegisterNumberActivity">
```

<RelativeLayout

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerInParent="true">
```

<TextView

```
android:id="@+id/text1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:fontFamily="@font/varela_round"
android:text="Enter Number To\nSend SMS\nin\nEMERGENCY!"
android:textAlignment="center"
android:textColor="@color/black"
android:textSize="19sp" />
```

<com.google.android.material.textfield.TextInputLayout

```
android:id="@+id/number"
android:style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
android:layout_width="250dp"
android:layout_height="wrap_content"
android:layout_below="@id/text1"
android:layout_centerHorizontal="true"
android:layout_margin="10dp">
```

<com.google.android.material.textfield.TextInputEditText

```
android:id="@+id/numberEdit"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:fontFamily="@font/varela_round"
android:hint="Number"
android:inputType="numberDecimal"
android:maxLength="10"
android:textAlignment="center" />
```

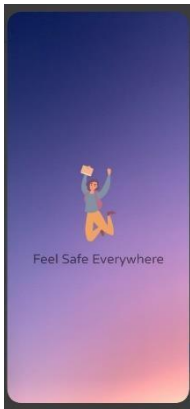
```
</com.google.android.material.textfield.TextInputLayout>
```

```
<com.google.android.material.button.MaterialButton
    android:layout_width="200dp"
    android:layout_height="60dp"
    android:layout_below="@id/number"
    android:layout_centerHorizontal="true"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:backgroundTint="#ffffff"
    android:fontFamily="@font/varela_round"
    android:onClick="saveNumber"
    android:text="Finish"
    android:textColor="@color/black"
    app:cornerRadius="10dp" />
```

```
</RelativeLayout>
```

```
</RelativeLayout>
```

Activity Splash Screen Layout



```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@drawable/photo_1569982175971_d92b01cf8694"
tools:context=".SplashScreen">
```

<ImageView

```
    android:id="@+id/girlVector"
    android:layout_width="130dp"
    android:layout_height="200dp"
    android:layout_centerInParent="true"
    android:layout_marginBottom="20dp"
    android:src="@drawable/girl_vector"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/girlVector"
    android:layout_centerHorizontal="true"
    android:fontFamily="@font/varela_round"
    android:text="Feel Safe Everywhere"
    android:textSize="28sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/girlVector" />
```

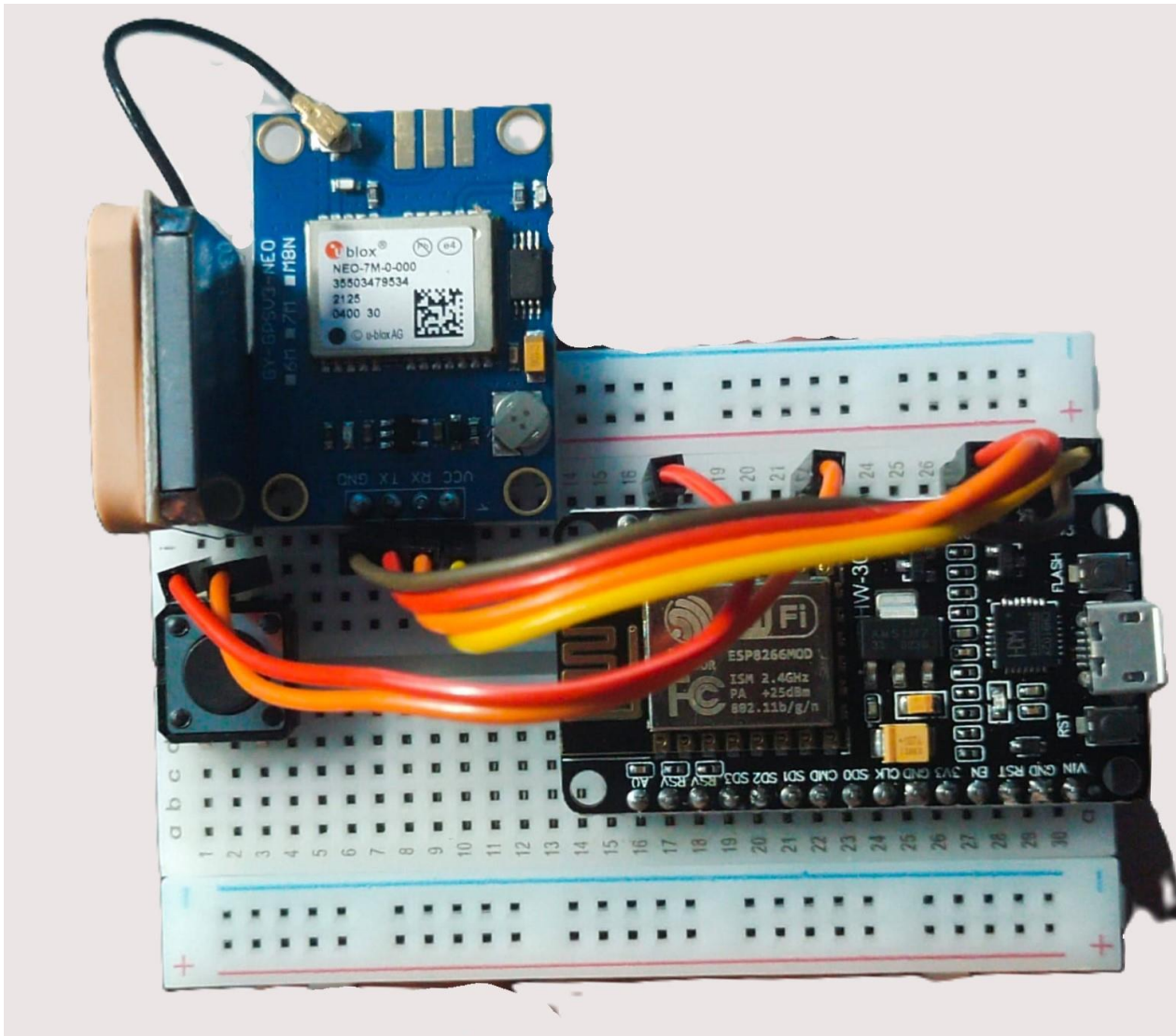
```
</androidx.constraintlayout.widget.ConstraintLayout>
```


Popup Layout

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">

    <item
        android:title="Change Number"
        android:id="@+id/changeNum"/>
</menu>
```

Model working



CONCLUSION AND FUTURE WORK

Unfortunately, the safety of women is in doubt and security is not concerned. Many headlines still coming across against women indicates that increasing trends of such sexual assault rapes still happening in today's generation. Around 80 percent of women are losing confidence and have fear of the realization of freedom. So we are trying to contribute little efforts towards women which will ensure the safety and respect for women so that she can have the right to grow equally like men. This mobile application is very much helpful for anyone. This application will help the user by scanning the QR code which will be nothing but she can attach the vehicle detail send through GPS the current address will be fetched and send it to any contact depending on the user. Here the user can take precautions before coming to the actual danger.

It is to let every NAARI is now safe to travel alone as someone is getting their updated location and also has vehicle information. For the future, we have in mind to extend this app where she can also contact nearby police patrolling vans in case of need. This project that I have made is small scale but has a large development scope and I look further to the day it can be extended and used by all common people so in totality this project is an initiative taken by the youth community to contribute to the betterment of the society in whatever way we can.

REFERENCES

- [1] Gupta, M., Thakur, S., Singh, L., & Rana, V. (2016), Design of Women Safety System using RFID and GSM Technology.
- [2] Varade, S., Itnare, T., Parande, H., Sonawane, P., & Bhardwaj, R. (2017). Advanced Women Security System Based on IOT. *International Journal on Recent and Innovation Trends in Computing and Communication*, 12, 57-61.
- [3] Harini, R., & Hemashree, P. (2019), Android App for Women Security System.
- [4] Kadkol, R. J., Aman Kumar, Keerthi Malagoudar, and Neha Kulkarni. "GPS Based Android Application for Women Security", *International Journal of Engineering Science*, 11016 (2017).
- [5] Lehman, W. E., Pankow, J., Rowan, G. A., Gray, J., Blue, T. R., Muiruri, R., & Knight, K. (2018). StaySafe: A self-administered android tablet application for helping individuals on probation make better decisions pertaining to health risk behaviors. *Contemporary clinical trials communications*, 10, 86-93.
- [6] Mane, I. A., Babar, J. R., Patil, S. S., Pol, S. D., & Shetty, N. R. (2016). Stay safe application, In *International Research Journal of Engineering and Technology (IRJET)*, SJ Avenue (Vol. 3, No. 5, pp. 2157-2160).
- [7] Miriyala, G. P., Sunil, P. V. V. N. D. P., Yadlapalli, R. S., Pasam, V. R. L., Kondapalli, A. T., & Miriyala, A. (2016), Smart intelligent security system for women. *International Journal of Electronics and Communication Engineering & Technology (IJECE)*, 7(2), 41-46.
- [8] Paradkar, A., & Sharma, D. (2015), All in one intelligent safety system for women security, *International journal of computer applications*, 130(11), 33-40.
- [9] Cohn, C., Kinsella, H., & Gibbings, S. (2004), Women, peace and security resolution 1325. *International Feminist Journal of Politics*, 6(1), 130-140.
- [10] Yarrabothu, Ravi Sekhar, and Bramarambika Thota. "Abhaya: An Android App for the intelligent safety of women", In *2015 Annual IEEE India Conference (INDICON)*, pp. 1-4, IEEE, 2015.
- [11] Akram, W., Jain, M., & Hemalatha, C. S. (2019), Design of a Smart Safety Device for Women using IoT. *Procedia Computer Science*, 165, 656-662.
- [12] Saikumar, P., Bharadwaja, P., & Jabez, J. (2019, March). Android and Bluetooth Low Energy Device Based Safety System, In *2019 3rd International Conference on Computing Methodologies and Communication (ICCMC)* (pp. 1180-1185), IEEE.

- [13] Ullah, A., Hossain, M. A., Zaman, N., Dey, M., & Kundu, T. (2019), Enhanced Women Safety and Well-Suited Public Bus Management System in Bangladesh Using IoT. *Advances in Internet of Things*, 9(4), 72-84.
- [14] Roy, S., Sharma, A., & Bhattacharya, U. (2015, August). Move Free: A ubiquitous system to provide women safety, In *Proceedings of the third international symposium on women in computing and informatics* (pp. 545-552).
- [15] Sogi, N. R., Chatterjee, P., Nethra, U., & Suma, V. 2018, SMARISA: a raspberry pi based smart ring for women safety using IoT, *International Conference on, Inventive Research in Computing Applications (ICIRCA)* (pp. 451-454), IEEE.
- [16] Khandoker, R. R., Khondaker, S., Nur, F. N., & Sultana, S. (2019, December), Lifecraft: An Android Based Application System for Women Safety, In *2019 International Conference on Sustainable Technologies for Industry 4.0 (STI)* (pp. 1-6), IEEE.
- [17] Soman, S., Sreelakshmi, G., Asok, A., & Embrandhiri, S. (2017). Intelligent Multipurpose Safety Wrist Band for Women using Arduino, *International Journal of Innovations and Implementations in Engineering*, 1.
- [18] Bhanushali, P., Mange, R., Paras, D., & Bhole, C. (2018), Women Safety Android App.
- [19] Yarrabothu, R. S., & Thota, B. (2015, December). Abhaya: An Android App for the safety of women, In *2015 Annual IEEE India Conference (INDICON)* (pp. 1-4), IEEE.
- [20] Alani, M. M. (2017), Android user's privacy awareness survey, *International Journal of Interactive Mobile Technologies (IJIM)*, 11(3), 130-144.
- [21] Ismail, N. A. (2015). Stay Safe Mobile Application, IRC.
- [22] Mareeswari, V., & Patil, S. S. (2018), Smart Device for Ensuring Women Safety Using Android App. In *Advanced Computational and Communication Paradigms* (pp. 186-197), Springer, Singapore.
- [23] Singh, D., Das, A., Mishra, A., & Pattanayak, B. K. (2017), Safety and Crime Assistance System for a Fast Track Response on Mobile Devices in Bhubaneswar, In *Computational Intelligence in Data Mining* (pp. 1-12), Springer, Singapore.