



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

RESCUE ALERT

¹Dhawal Dev Sharma, ²Hrithik Joshi, ³Akansha Singh

¹Student, ²Student, ³Assistant professor

¹Bachelor of Technology (Computer Science and Engineering), ²Bachelor of Technology (Computer Science and Engineering),
^{1,2,3}Shri Ramswaroop Memorial College of Engineering and Management, Faizabad Road, Lucknow, India

Abstract: Rescue Alert application is an online emergency application useful to provide emergency services to the user in need of assistance. The project is designed to offer services to those who could face all types of emergencies. As soon as the shake event is triggered, notification is sent to registered people containing the location URL of the victim along with a predefined message to all the registered numbers.

They can track the victim's location by tapping on the location URL and hence reach to him/her.

Keywords – Emergency, Firebase, SQLite, Services.

I. INTRODUCTION

Emergency situations always come unexpectedly. We live in a world where uncertain situations can happen to anybody anywhere who further may require emergency services. You might be away from your home and suddenly face an unpredictable situation like a disaster or an accident that you never thought of before. There could be multiple situations in case of emergency such as emergencies caused by natural disasters, medical emergencies and accidents or any unexpected situation. Nearly 1.3 million people are killed every year and about 50 million are injured worldwide due to road accidents. More than 50 percent of road traffic deaths affect young adults between the age of 15-44. Around 400,000 individuals under the age of 25 die in road traffic accidents every year. Here we introduce an android based application. It has been designed to provide services to those people who can face these kinds of emergencies.

The key features of our app that make it different from other apps designed till now are as follows:

- 1) Initially, we have to register user and contacts that will help user in times of emergency.
- 2) Whenever a need arises, the user shakes the device three consecutive times, then we would register a shake event.
- 3) As soon as the shake event is triggered, a notification is sent to registered people containing the location URL of the victim along with a predefined message to all the registered numbers and they can track the victim's location by tapping on the location URL and hence reach to him/her.

II. RELATED WORK

Some research has been done for Rescue Alert application. Help-Self: SOS Android Application in which the user has to click the power button three times or tap the 'ALERT' button within the app to begin. The further steps will be taken care by the app itself [1]. Android Based Emergency Alert Button in which user can directly press the power button and thereby, popping up a SOS screen and user can directly click the SOS button triggering the application in the background, sending the location (latitude and longitude) to all the pre-registered phone numbers in the application [2]. SOSerbia: Android-Based Software Platform for Sending Emergency Messages in which after a person presses a correct combination of buttons, a message with his or her location is sent to the operating center of the Serbian Police [3]. SoS Android Application is a Google – Map based online emergency application useful to find the specified emergency stations like, Police, Fire station, Cab service numbers and Hospitals, likely to be found in a given circular area. The user will only have to provide a radius of area to be searched [4].

III. INCORPORATED TECHNOLOGIES

A. FIREBASE

Firebase is Google's mobile application development platform that helps you build, improve & grow application. Data is synced in real time across all clients and is available even if your app is turned off. The Firebase Realtime Database is a database that is hosted in the cloud [5].

- It provides wide range of implemented services such as Analytics, Authentication, Databases, configuration, file storage, push notification and many more.
- Firebase platform has 18 products divided into 3 groups: Develop, Quality and Grow.
- It is a real time database which allows to store tree of lists of objects. It allows synchronizing data between different devices.
- It helps in building collaborative applications & provides immense secure access to database.

B. ANDROID

Android is a mobile operating system developed by Google in year 2008. This Operating System (OS) is based on Linux kernel. Unlike Apple's iOS, Android is an open-source means developer can modify and customize the OS for each phone. Android devices come with many built-in applications and also support third-party applications. Various programs can be created by developers for Android using the free Android software developer kit (SDK). Android programs are written in Java and run through a Java virtual machine (JVM) that is optimized for mobile devices. It helps us create an App that is robust, testable, and maintainable and has less boilerplate code [6].

- Android Device or Emulator to run application on, while testing
- Android 3.0+ installed on PC
- Brief Introduction to RecyclerView and Card View
- Brief Introduction to Activity Lifecycle /Fragment Based Approach.

Advantages of Android OS:

- Only Android operating system Support DVM
- Faster execution
- In DVM executable is APK.
- From Android 2.2 SDK Dalvik has its own JIT (Just in Time) compiler.
- With the help of DVM device can run multiple instances effectively.
- Applications are given their own instances [7].

C. SERVICES

Services are modules that makes an application run in the background. The main aim is that the application remains active in the background, so that user can work on multiple operations at the same time. There are three types of services available in android named Foreground, Background, and Bound services. Foreground services are those which notify the user about its current operation. E.g., downloading a file. Background services do not notify the user about its current operation and user also cannot access it. Bound services allow the modules of the application to bind themselves with a service at a time.

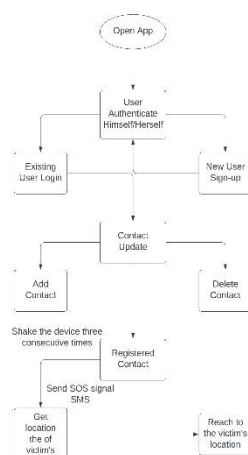
D. ANDROID STUDIO

It is an open-source software designed specifically for the purpose of Android Development. It is the official integrated development environment (IDE) for Google's Android Operating System, built on JetBrains' IntelliJ IDEA software [8].

- It provides a unified environment to build apps for Android phones, tablets, Android Wear, Android TV and Android Auto.
- It allows independent creation, testing and debugging of functional units in a project.
- It allows simulation of various hardware features such as GPS location, network latency, motion sensors and multi-touch input.
- It provides a robust static analysis framework & provides quick fixes for various categories such as performance, security & correctness.
- It provides easy integration of Firebase & services such as Notifications, Analytics & Authentication.

IV. PROPOSED WORK

The proposed android platform for rescue alert users will feature the modules described below:

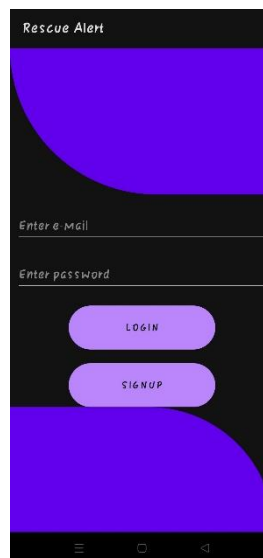


A. SIGNUP/LOGIN MODULE:

```

if(!Patterns.EMAIL_ADDRESS.matcher(email).matches())
{
    user_name.setError("Enter the valid email");
    user_name.requestFocus();
    return;
}
mAuth.signInWithEmailAndPassword(email,password).addOnCompleteListener(task -> {
    if(task.isSuccessful())
    {
        startActivity(new Intent(MainActivity1.this, MainActivity.class));
    }
    else
    {
        Toast.makeText(MainActivity1.this,
            "Please Check Your login Credentials",
            Toast.LENGTH_SHORT).show();
    }
}

```



B. ADDING PERMISSIONS CODE:

```

if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
    if(ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION)==
    PackageManager.PERMISSION_DENIED) {
        requestPermissions(new String[]{Manifest.permission.ACCESS_FINE_LOCATION,
        Manifest.permission.SEND_SMS,Manifest.permission.READ_CONTACTS}, 100);
    }
}
if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.Q) {
    requestPermissions(new String[]{Manifest.permission.ACCESS_BACKGROUND_LOCATION}, 100);
}

```

C. TRIGGERING SHAKE EVENT CODE:

```

mSensorManager = (SensorManager) getSystemService(Context.SENSOR_SERVICE);
mAccelerometer = mSensorManager
    .getDefaultSensor(Sensor.TYPE_ACCELEROMETER);
mShakeDetector = new ShakeDetector();

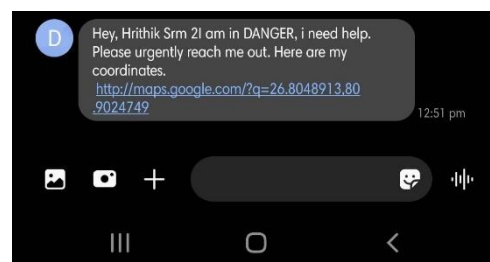
```

D. TRACKING LOCATION CODE:

```

public void onSuccess(Location location) {
    if(location!=null){
        SmsManager smsManager = SmsManager.getDefault();
        DbHelper db=new DbHelper(SensorService.this);
        List<ContactModel> list=db.getAllContacts();
        for(ContactModel c: list){
            String message = "Hey, "+c.getName()+" I am in DANGER, i need help. Please urgently reach me out. Here are my
coordinates.\n "+"http://maps.google.com/?q=" + location.getLatitude() + "," + location.getLongitude();
            smsManager.sendTextMessage(c.getPhoneNo(), null, message, null, null);
        }
    }else{
        String message= "I am in DANGER, i need help. Please urgently reach me out.\n"+"GPS was turned off.Couldn't find location.
Call your nearest Police Station.";
        SmsManager smsManager = SmsManager.getDefault();
        DbHelper db=new DbHelper(SensorService.this);
        List<ContactModel> list=db.getAllContacts();
        for(ContactModel c: list){
            smsManager.sendTextMessage(c.getPhoneNo(), null, message, null, null);
        }
    }
}

```



V. CONCLUSION

It is important to note that the proposed system is designed to provide safety in hands features and that through such features, it is possible to send current location to any trusted contact by shaking the device three times. Basically, during danger or any emergency situation, it is not possible to call or text anyone. When system detects shaking phone three times then system will awake and automatically tracking current location and sending location to all trusted numbers through SMS along with a predefined message.

VI. ACKNOWLEDGEMENT

We would like to thank our guide Er. Akansha Singh for helping throughout this research and for the continuous guidance during the development of this platform.

REFERENCES

- [1] Hemant Chauhan, Gaurav Jakhar, Rounak Vats, "Help-Self: SOS Android Application", International Journal of Research in Engineering, Science and Management Volume-3, Issue-5, May-2020, ISSN: 2581-5792.
- [2] Dhruvajyoti Gogoi, Rupam Kumar Sharma, "Android Based Emergency Alert Button", International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-2, Issue-4, March 2013.
- [3] Mihailo Jovanovic, Ivan Babic, Milan Cabarkapa, Jelena Misic, "SOSerbia: Android-Based Software Platform for Sending Emergency Messages", Research Article.
- [4] Pratyush Poddar, Karanveer Singh Dehal, "Sos Android Application", International Journal of Engineering Research & Technology (IJERT) Vol. 2 Issue 3, March – 2013, ISSN: 2278-0181.
- [5] <https://www.vogella.com/tutorials/Firebase/article.html>
- [6] <https://techterms.com/definition/android>
- [7] Pritee S. Uttarwar, Rani P. Tidke, Deepak S. Dandwate, Umesh J. Tupe, "A Literature Review on Android -A Mobile Operating system", International Research Journal of Engineering and Technology (IRJET), ISSN: 2395-0056.
- [8] <https://developer.android.com/studio/intro>

