Emergency Response Application [ERA]

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Abstract – In today's world, people using smart phones have increased rapidly and hence, a smart phone can be used efficiently for personal security or various other protection purposes. The increasing of incident now-a-days have waken us to go for the safety issues and so a host of new apps have been developed to provide security systems to women and men via their phones. This paper presents Pola, an Android Application for the Safety of People and this app can be activated by a single click, whenever need arises. A single click on this app identifies the location of place through GPS and sends a message comprising this location to the nearby Police Station in that specified area where crime is being taking place. The unique feature of this application is to send the notification to the Police Station which are located in that same area and the notification don't go away till it has been seen and open in the Pola. Continuous location tracking and will get updated in the app automatically till the location of the victim is found and can be rescued safely.

Keywords – Android; GPS.

I. INTRODUCTION

People are now a day always on the move and travel for frequent causes. They often work across racial, sacred, opinionated, and intellectual divides to encourage tranquillity. We are aware of importance of people security, but we must recognize that they should be well secured. A Person is not much powerful when compared to the person who is armed, in this type of situation they need a helping hand to relieve them. The best way to minimize 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. Whether you are in instant trouble or got separated from friends during night and do not know how to get home, having these apps on your phone can lessen your risk and bring assistance when you require it.

In the recent outrage that are being increasing day by day which alert us and woke us to the safety issues for our family and our loved onces. A number of new apps have been developed to provide security systems to people on their phones.

Here, we introduce an android app that ensures the safety of person who uses it. It reduces the risk and helps police a lot by identifying the location of person who is in danger. And sent an alert to the near by police station for the assistant is required on that location as early as possible cause someone is in the trouble and in need of the all the help that the person can get.

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

- Initially, we have to enter the four contact numbers of police, family members and friends in to the application say and click on "save" button.
- While travelling, run the application and whenever need arises, click "GO" button.
- As soon as "GO" button pressed, it firsts send the location to the nearest Police station sends the message containing location of the victim to the police officer.
- Unique feature of this app is that it sends the exact location directly to the local police station and the notification don't go away till the notification is been opened. So, continuous location tracking of victim is possible with this application.

Android is the most widely used and is most popular in smartphone. Since its release sales of smartphone running on android has grown strongly over the years. It was developed by Google team and allows writing managed code in the Java language.

The current system is developed on the basis of android platform. Android utilizes a custom virtual machine that was designed to optimize memory and hardware resources in a smartphone. The core Android source code is known as Android Open Source (AOSP) which primarily licensed under Apache License. Any application that is built will definitely have equal access to a phone's capabilities providing users with a broad spectrum of applications and services.

1. Existing Systems
As a part of literature survey, we investigated some apps that offer the same or similar services for android and other platforms. The aim is to watch how these

applications work and to improve the drawbacks of those applications.

Today the cases of crime are increasing gradually. In these types of crimes, a mobile phone can plays an important role for safety of an individual. Now android is budding on some apps for peoples security purpose. These apps and websites are as follows:

- **Crime Report: -** Crime Reports is a free website that allows users to search for crime data by region, zip code or street address, and get results from over 2,000 participating law enforcement agencies.The search function takes users to a map that denotes recent crime reports using different icons. With advanced search options, you can set a specific date range or view crime data from the past 3, 7, 14, or 30 days. Crime Reports can also create crime trend reports that show the increase or decrease in violent crimes, property crimes, and quality-of-life crimes over the last 15 days.

- **Neighbrohood Scout:** - This website helps user easily compare crime data for different neighborhoods and measure the crime rates in your neighborhood against similar areas in other cities and states. Users have the option of looking at the overall crime rate or viewing the specific rates of violent crime and property crime. You can view this crime data for free. You can also use Neighborhood Scout to find information about local schools, as well as real estate data.

- **Spotcrime: -** SpotCrime is an app and website that pulls data from police reports, local news, and user reports to create neighborhood-specific crime lists and maps. SpotCrime shows incidents of theft, shooting, burglary, assault, and arrest. Because it is an aggregate of local data, it offers a real-time look at crime in any specific area, including suspicious activity that gets reported by users. To get more details about an incident, you simply click on the listing and it will take you to the report. You also have the option of signing up for crime alerts based on your address, so you can be notified via email of recent reports. Both the website and the spotcrime+ app free to use.

- **Family Watchdog:** - This site is a tool for those who are concerned about their proximity to registered sex offenders. By entering your address, you can view a map that shows the name, photo, and address of nearby sex offenders, as well as color coded markers that indicate the type of crime they committed. More detailed crime information is only available via a paid background check through a third party system, but the initial sex offender search is free. The website also allows you to sign up for alerts so you can be notified whenever a sex offender moves in our out of your neighborhood.

II. PROPSED SYSTEM

To build a system for android eco-system for keeping track through several applications are avaliable. This application uses GPS for identifying the location of the person in trouble and the system is being divided into two modules:

1. First module can be the victim's mobile phone app i.e called as a threat application which will be using the 4G/3G/2G data connection for tracking the location of the victim through GPS. So that the live location of person which is in danger can be shared to that nearby police station. This threat application will be available on the playstore for all the users and will be free to download.

2. Second module will be the Pola app which will be only avaliable to the Police authorities this application will receive the notification if the person living or passing in the same area as the police then it will send the notification on the pola app that a person is in danger and in need for the assistant of the police officer.
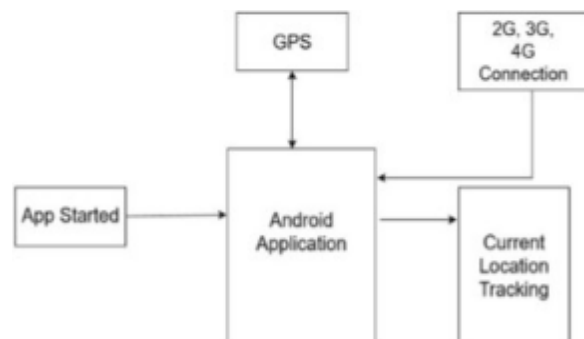
Block Diagram:-

Fig. 1. Block Diagram for the Proposed System.

"Fig 1" shows the block diagram of the system. Initially, when we open the threat app and click on the 'GO' button present inside the threat app, it will first checks whether the location settings, data connection settings in the application are on or not. Then, it track the location of the victim via GPS and sends these live location in the to the pola app which is in the hands of the police officers then the officer will see that notification and proceed and take action and follow the protocol which needs to be followed. Now, at the received device, by clicking on the notification message it will, automatically open the google maps inside the pola app and spots the exact location of the victim. Also, as the message containing victim's location is sent for every second from the root device, the victim can be tracked wherever he or she goes and can be rescued safely and quickly.

III.EVALUATION RESULTS & UNIQUENESS

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

The first major step is to sign up in the application threat using the "username" and "email ID" you will also need the password it is the one time process after completion of the signup it will directly takes you inside the app if in case you got logout you can use the same username or the email to log back into the application and you also need that same password onces done you are all set to make use of the application. When the application is installed in the smart phone for the first time the above steps should be provided. The application will save the given information.

The second major step is to send the GPS information which can be the live location of that person using the Google map app to the pola application which will be on the phones of the police officers, when the person is needed to be rescued. This step is followed only when the "GO" button is pressed in the threat 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 of work done in sending the exact live location continuously to the pola application will is on the police officers phone. Here, we have set the location sending interval, to the time-lapse live it automatically check for location change in an instant of a second. 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 on right time it also helps the officers to get on time at the crime scenes.

1. Uniqueness

In the existing systems, we have mentioned many Android applications having similar feature to our application. In all those applications, victim's location is sent only once to the registered contacts in different forms like SMS, EMAIL etc. But in practical situations, the victim may not be kept at one place standing, she or he may be moving around. So, in all those applications, we can know only one location immediately after the start of the application, but practically after sometime she may not be present at that place. The unique feature of our application is send live location continuously for every second till "STOP" button in the application is pressed. So, even if the person is made to move around in the city, because of this feature of continuous location tracking, he or she can be rescued quickly and safely by the hands of the authorities present.

2. Results

The following figures are the screen shots of Threat application initially from the starting of it.

Fig 2 represents screen shot of the application immediately after opening the Threat app on the device on which the application is installed.

It contains three fields which need to be filled in order to use the application; the first field is the username. The second field is the Email Id which is required to for authentication and the third field is the password which needs to be entered when login. Also, the layout contains one button which is "Sign up". After filling the details the "Signup" button must be clicked such that all those details will be saved in the database.
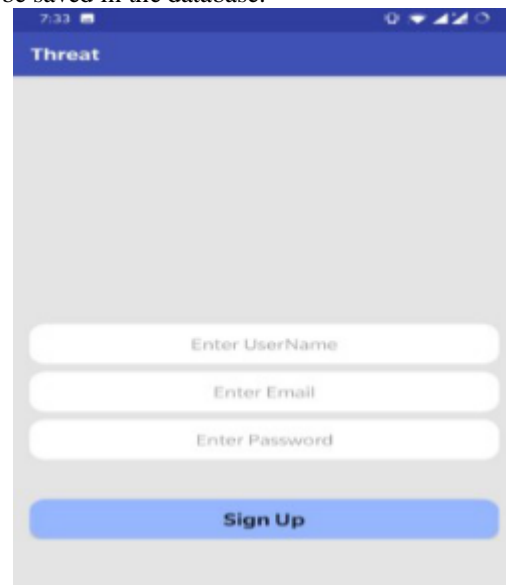

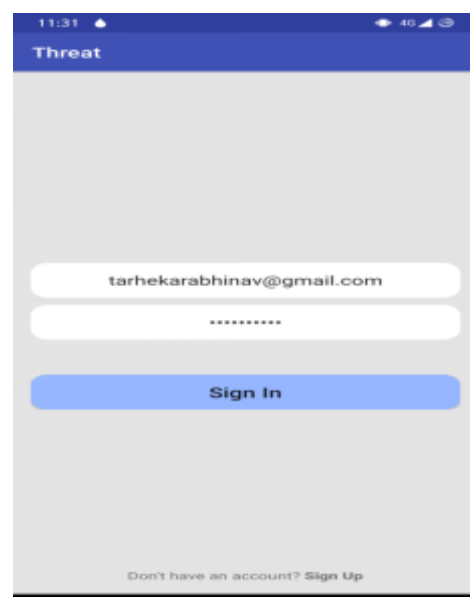Fig. 2. Screenshot of Threat App just after opening the application.

Fig. 3. Screenshot after entering the contact details in Threat Application.

"Fig. 4" the screenshot after clicking the "GO" button in the Threat application. It displays Message will be displayed that the "Threat notification sent", if we want to stop the application, we have to click the "OK" button then it goes to page as shown in "fig 3".
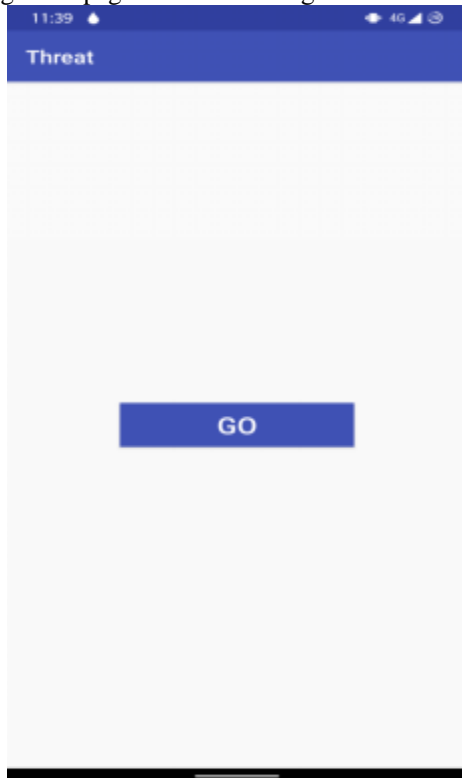

Fig. 4. Screenshot of Threat App after clicking Start button in the application.

"Fig 5" represents the message is sent successfully to the Pola Application. The notification contains a message of person is in threat and this live location.
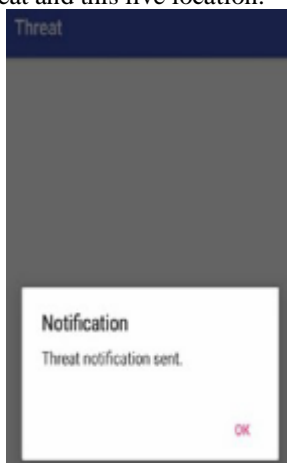

Fig. 5. Screenshot of notification sent to the pola app.

"Fig.6" The screenshot of location after accepted by the Police officer in pola app in that specific area where the crime is being carried out.
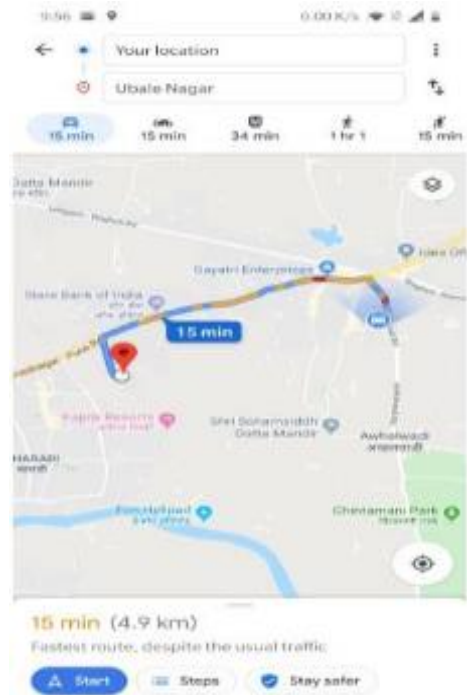

Fig. 6. Screenshot after opening the notification in pola app.

This image is of the person who is in danger and has pressed the "GO" button in the threat app and the notification has been accepted by the local police officer and direction to the person has being started to show in the pola application.

The main advantage of this application is that even if victim from incidents place to some other location we can identify that location easily as the pola app receive the location of the victim through Google maps which is updated frequently to give us the exact live location on the crime scene.

IV. CONCLUSIONS

In this paper, we have described EMERGENCY RESPONSE APPLICATION. This application helps in live tracking of the location of the victim through GPS by using the google maps applications. The advantages of this application is even when the location of the root device is changing rapidly, we can identify the exact location. In future we can also implement AI in Emergency Response Applications to find out which area is more prone to threat and where more police patrolling cars should be present at what time to prevent the threat before even happening we can also maintain all the records about the type of crimes happened in particular area and how quickly were they resolved so that we can also keep track on the work of police department. Further, it can be developed for IOS and Windows mobile platforms. Thus, this application can help the people in a great way from threat full conditions.

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