

# Secure Lady-A Women Safety App

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**Abstract**—Women's safety has become a critical worry as a result of the daily rise in events throughout the world. This proposed concept addresses the protection and security of women by using an application to send alarm messages, highlight safe areas, and inform the respectable people who are indicated inside the application. It implies a replacement perspective that suggests women should be protected by technology. This study makes use of an Android-based smartphone with a feature that automatically detects and transmits location-based information. It provides self-defense instruction, SMS alerts, and a number of tools that can help women recognise any wrongdoing when they are in danger.

**Index Terms**—Women, Android, Safety, Location, SOS

## I. INTRODUCTION

Women's safety is of the highest significance given the growth in incidents and crime rates against them in today's society, particularly in big cities where they must spend a lot of time outside. While travelling at night, especially for women, it is essential to be cautious and safe. Even if the government is taking the necessary measures to safeguard them, there are free safety applications for women that can help them stay secure. We must acknowledge that while women's safety is crucial, they also need to be properly protected. Women can need a helping hand in an emergency since they are not as physically strong as men. The best way to lessen your risk of being a victim of a violent crime (such a robbery, sexual assault, rape, or domestic violence) is to find and get in touch with organisations that can protect you from dangerous situations.

Our Application contains 5 major features which will definitely prove helpful to women when an unfortunate situation arises.

- Our Most Important feature is the SOS feature, in this we have to first mention a list of mobile numbers of some close relatives/family/friends along with a security message. Once this feature is activated the application sends a message to this list of people along with your current location.

- Second Feature is the Electronic Device detection, this feature requires an electromagnetic sensor inside the smartphone using which we can get alerted of any hidden devices in a particular area.
- Third feature is the emergency Siren, which emits a high frequency when we press the power button several times in a row.
- The Fourth feature is the women blog, this will display some news articles or achievements related to women using API.
- The Fifth feature is the police station locator, this feature allows you to search for police station just by the press of one click, by pressing the police station icon the app automatically open Google Maps and locates all the nearby police station

## II. PROBLEM STATEMENT

During these recent times, it has been observed lately that domestic violence/crimes against women are on a steady rise and this screams for the need of an application which provides very essential safety features and the accessibility of these features should be very fast and instantaneous. Using technology against these sorts of things would be putting our smartphones to better use.

### A. Goals And Objectives

- Women's safety will be just a click away at a lower cost by putting into practise and using our advised technique, along with important products.
- Using Magnetometer sensors of our smartphones searching for hidden electronic items like Hidden camera's, microphones, etc.
- The panic switch combination can be used to send SOS.
- A buzzer will be used to alert nearby people in an emergency.
- The device will record the victim's data and send the victim's location to the list of numbers.

### III. EXISTING SYSTEM

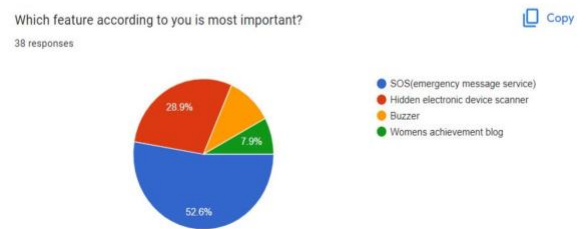
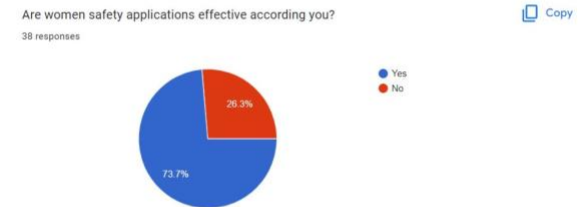
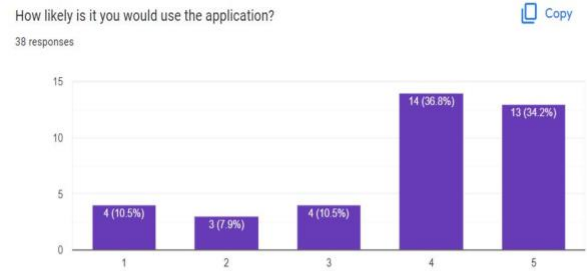
Solutions exist in a variety of forms, including smartphone apps, security systems, and everyday-wearable trendy gadgets. One idea is that whenever the victim clicks the power button, a notification be sent to the police or particular contacts. Within a minute, the system communicates the victim's live location. As a result, it offers a better location to a lady who has been authenticated to the device when they move from one location to another and need to complete a fingerprint scan. The woman should always scan her fingerprint once each minute after that. If not, the system will SMS the registered number with the woman's location. The woman need only stop scanning her fingerprints in an emergency; there is nothing else she has to do.

### IV. PROPOSED SYSTEM

Our Application contains 4 major features which will definitely prove helpful to women when an unfortunate situation arises. Our Most Important feature is the SOS feature, in this we have to first mention a list of mobile numbers of some close relatives/family/friends along with a security message. Once this feature is activated the application sends a message to this list of people along with your current location. Second Feature is the Electronic Device detection, this feature requires an electromagnetic sensor inside the smartphone using which we can get alerted of any hidden devices in a particular area. Third feature is the emergency Siren, this emits a high frequency when we press the power button several times in a row. Forth feature is the women blog, this will display some news articles or achievements related to women using API.

### V. REQUIREMENT GATHERING AND ANALYSIS

We used Google Forms to run a survey to see how many people are interested in utilising the applications. Almost 35 people answered the questions we included in this Google Form on women's safety. This form also asked users about their readiness to utilise the programme and its features. There were also inquiries concerning the importance of the characteristics. The visuals of the questions asked and a graphical depiction of the outcomes are provided below:



### VI. SYSTEM DESIGN

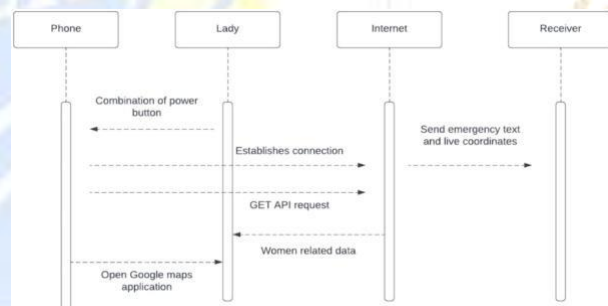
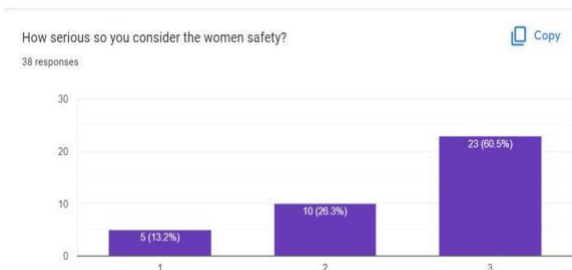


Fig. 1. Action flow



- **Emergency SOS**  
So, when the lady opens the application for the first time, the lady has to give input of 3 contact numbers of her close relatives as well as the SOS message that has to be sent. When the power button is pressed 5 times, the phone registers the input pattern, acquires the lady's current location coordinates and a message with coordinates is sent from the lady's phone to all the emergency contacts.
- **Camera Detection**  
All electric devices emit electromagnetic waves, and to

detect these waves, all smartphones have built in electro-magnetic sensors. So using these sensors, the waves are detected by the CCTV camera and a various frequency of sound is played from the phone depending on the intensity of the EM waves.

- Find nearby police stations

When the lady presses the button to use this feature, a dialog is shown, requesting her to give access to her location. When she accepts the request, using her location coordinates, a query with all the nearby police stations is run. The app is redirected to the Google Maps application listing out all the nearby police stations in the form of a list.

- High Frequency Buzzer

When the lady presses 3 times the power button, a very high frequency of 1500 Hz is played.

#### A. Technologies Used

- 1) XML (extensible markup language) which is used to design the various screens of the application
- 2) Applications for the Android platform are created using a collection of development tools called the Android SDK (Software Development Kit).
- 3) Java for writing the logical code and using the various libraries provided by Android
- 4) As a component of the Android Architecture, Room Database offers an abstraction layer over SQLite, en-abling more reliable database access while retaining all of SQLite's functionality.
- 5) JSON for front-end and back-end of the application communication
- 6) OpenApi is an open source News API which is used to query various news related to women

#### B. Interface Design

The application's user interface was created with the necessity for simplicity in mind. The programme was designed with simplicity in mind as it would largely be used in emergency situations, aside from the initial entry of emergency contacts.

The user may easily enter the necessary details thanks to the straightforward form. The home page's colourful, distinct buttons, which are color-coded for emphasis, make it easier to utilise quickly. It is important to note that in the majority of use cases, the user would shake her phone to silently activate the trigger rather than launch the application and push the EMERGENCY SOS button on the user interface.

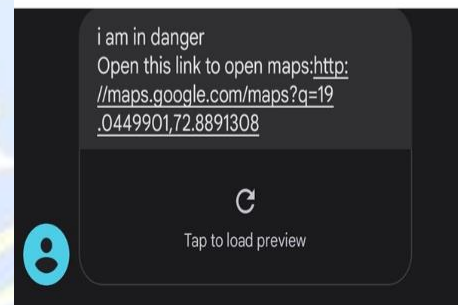
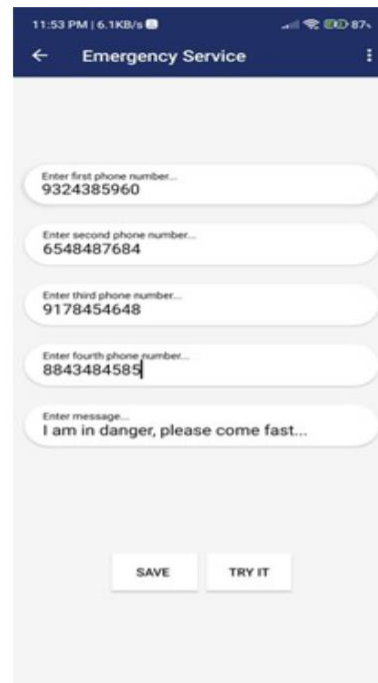
### VII. INPUT AND OUTPUT

Feature wise inputs And their respective Outputs are men-tioned below

- 1) Emergency SOS

As seen above for this feature to work properly we have to give to things as input in the beginning which as

stored locally within the application. By doing this we are now able to send the emergency message to all the numbers which are given as inputs.



Input Combination: Tap the power button 3 times in a row.

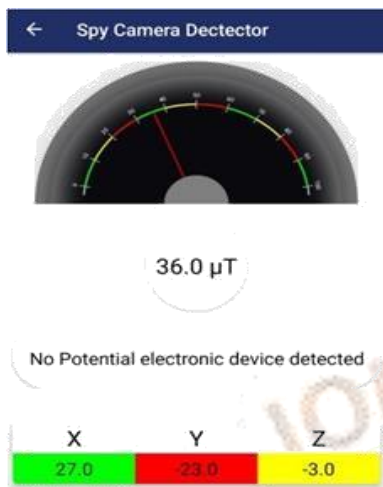
- 2) Camera Detection

As this feature makes use of the inbuilt electromagnetic sensor of the smartphone, the input data would be the electromagnetic radiation which is present around all the electronic devices.

Input Data Type: Float Value (Electromagnetic waves) This data is taken as input continuously till the threshold value is met or surpassed, once this is done we get our output which is in the form of a buzzer.

Output Data type: Sound (Buzzer)

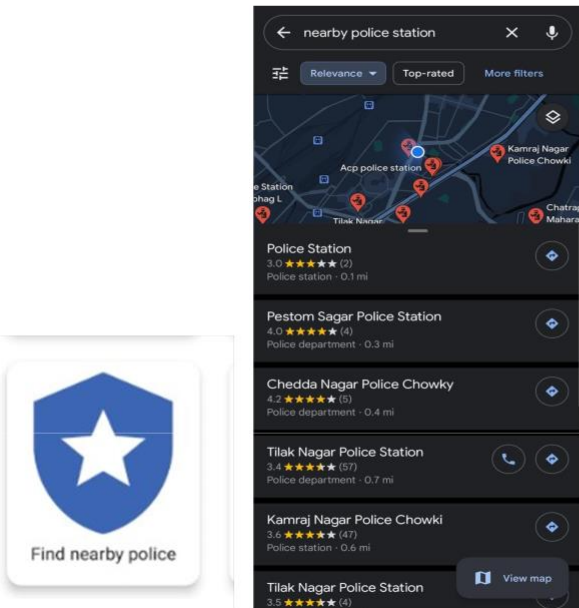
In this way this feature will be able to easily detect and notify of all the hidden electronic devices which are present around the phone's vicinity.



3) High Frequency Buzzer

This feature is used to alert the nearby surrounding by emitting a high frequency sound from the mobile phone just by the press of one input combination. Input Combination : Pressing the volume down button + power button at the same time will activate this feature. Output: High frequency sound which will be emitted from the smartphone.

4) Find nearby police stations



This feature will help the user find all the nearest police station easily by just pressing the “Find Nearby Police” icon in our application .

By pressing this icon we run a query on google maps which gives the current location as input in terms of coordinates and in return google map will open in our application and show all the nearby police station . Input Activation: Press the above mentioned icon Input Data Type: String (Query for google maps which includes the coordinates of the current location) Output: “Information” in the form of google maps showing all the nearby police stations.

5) Women Achievement Page

This is the last section of our application which will consist of the most popular women related news mostly belonging to upliftment , achievements,etc so that the lady user can stay in touch with all the happenings of the society. For this feature to work we make use of an API which helps us to fetch all this news and display it inside of our application. Once the user taps on the news icon a query is sent to the API which makes use of one specific news page to fetch the results.



VIII. CONCLUSION

All of the suggested conditions have been satisfied by the creation of the "Android App for Women Security System." In order to ensure the safety of ladies, the procedure is maintained more conveniently and simply. The system is very user-friendly and scalable. All evaluation criteria have been applied to the system. The system assures that prompt action will be done when a bad scenario is observed and minimises

problems that might arise in the manual approach that is currently in place. The database's adaptable design makes it possible to build the system. It has been implemented and validated to the fullest extent. Methodologies were used to create every stage of the project. The necessary report may be obtained by users with minimum training. The project's goals are achieved by the programme during execution. With modest adjustments, more additions to this system can be made necessary.

#### IX. FUTURE SCOPE

Security Alert was developed on the Android operating system to protect women from harm thanks to recent improvements in mobile technology. You can utilise anything in this project that the user could find useful if they encounter problems or need support. By starting this programme, the user may see the HELP button. He can also save a message and three phone numbers. Press the button if the user requires help or is experiencing difficulties. Because of this, when a user opens this programme, a Emergency SOS button is there. To send an SMS to register people, press that button. Instead of the experimental database used in this project, this application can be merged with the law enforcement database in the future (for example, the database used in city police control rooms). Also, if the root device is turned off or when the mobile network is not accessible to it, several additional upgrades can be made. In order to save women or men from dangerous situations, this app might be a huge assistance.

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