

# WOMEN'S SAFETY APP

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**Abstract** : In this present scenario, women are almost worried when they actually walk out from home freely without any fear on the streets even at night times not worrying about their security . In today's environment, providing security to women is a key issue that every individual requires. Day by day sexual harassment on women has been increasing drastically like rape in public transport, sexual harassment against small girls in schools etc. Hence Women's safety has risen to the top of many organization's priorities. Many IT firms have eager to address the security issue, necessitating the development of a framework that will function well and reduce the number of crimes. As a result, the suggested concept is aimed to offer women with protection by sending messages to surrounding policestation and the control room. The application also provides the end user's position and sends alerts message to emergency contacts.

**IndexTerms** - Android, Geo location API, GPS, GSM

## I. INTRODUCTION

Women's crime has more than doubled in the last decade. In the last ten years, more than two million offences have been reported. Every 60 minutes, over 23 offences against women are registered, or one complaint every three minutes<sup>1</sup>.

The name "Android" refers to a Google-created operating system that is utilized on mobile devices such as smartphones and tablets. Android is a platform that is open source and free to use. It gives apps more versatility by allowing them to run in Firefox, Opera, and Chrome. Android delivers a free Software Development Kit (SDK) to developers in order to reduce development and licensing costs. Android phones come with a wide range of pre-installed apps and also support third-party apps. Android programmes are written in the Java programming language and run on Google's "Davlik0" virtual machine, which was created for all mobile devices. End users can use the online Android Market to download 0Android applications. The System<sup>1</sup>, which is based on the Android operating system, will compile the source code and resources used by the app<sup>1</sup> and wrap them in APKs for the developer<sup>0</sup> to test, release, and distribute the app. The Android Operating System's elasticity allows developers to create bespoke build configurations without changing your app's fundamental source files.

## II. RELATED WORK

Prior work, including work in mobile applications, has been done with the purpose of improving women's safety. Three applications with a goal comparable to WoSApp<sup>0</sup> are briefly explored below.

### A. iMace

This mobile application emits a high-pitched alarm when the phone is shaken, and it tells friends and law authorities of the attack's position. It also uses wireless networking techniques to send a snapshot of the same.

### B. VithU

When the phone's power button is pressed twice, this mobile application sends a message to pre-selected contacts. The user's GPS location is included in the message, which is sent out every two minutes with updated coordinates.

### C. Nirbhaya

When a button on the app screen is pressed, a message with the user's 0GPS coordinates is sent to a list of emergency contacts. With every 300m change in location, the coordinates are updated and resent. Although there are other apps that attempt to keep women safe, WoSApp stands out because it has a direct relationship with the local police, which may be expanded as the app's use region grows. It is also free and open-source, enabling for easy improvements and customizations in order to quickly replicate the application in other jurisdictions.

### D.iprob - emergency application for women

They've established a recognisable emergency response scenario. IPROB is an application designed to keep women safe even in dangerous situations like as terrorist attacks or natural disasters. The user can try to save herself by shaking the phone more than the typical threshold value, which automates and activates the application. It starts collecting surrounding voices to check and validate the risky IPROB scenario, then raises an alert, and if the end user does not respond within a pre-determined time frame, the pre-defined message is broadcasted to the stored phone numbers. If the receiver's phone is set to quiet, it is immediately changed to loud to transmit the voice alarm "YOUR FRIEND IS IN DANGER PLZ HELP." The warning is repeated indefinitely unless the user stops it. If the receiver

on the other end accepts an emergency service, such as an ambulance or fire truck, they will be notified. If the receiver accepts an audible alarm, it will mechanically alert the victim and enable the victim's speakerphone.

### III. PROPOSED SYSTEM METHODOLOGY

The suggested system tries to eliminate all of the existing systems' drawbacks. This framework focuses on a security issue that is defined solely to meet the necessity of providing protection to women so that they do not feel insecure when confronted with such societal obstacles.

Because Smartphones are used everywhere these days, the goal of the proposed system is to prevent crime against women by offering a user-friendly app to the user. Because the suggested system only has four buttons, it is simple to use even by people who are unfamiliar with Smartphones. The proposed system is intended to give immediate protection to the victim while also tracing the location of the crime, resulting in a progressive decrease in the number of crimes.

Safety has become a necessity and with the security apps women can stay in continuous contact with family and friends. There are many apps based on GPS location allowing the family to know the exact location. The user can know the right path while traveling and family can keep a track of location with these apps. The main objective of security alerts is to send emergency alerts to people who can really act in time. Instant alerts can save women from becoming a victim of attacks. This app may help them develop their self-confidence to move on with their daily routine. Women those who are alone in the unsafe places can use this application. This app is useful for pregnant women in case of medical emergency.

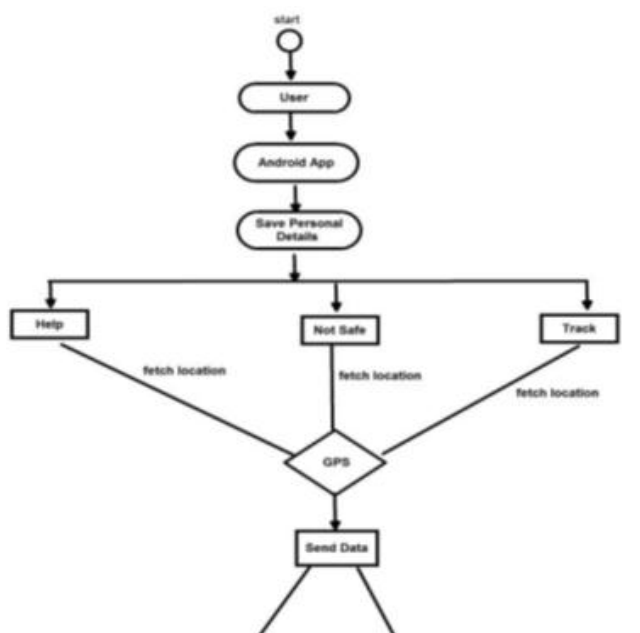


Fig3.1: activity diagram of the proposed application

The flow of information in the framework is depicted using activity diagrams. The major goal of using these charts is to show the work flow behind the framework that has been defined. The process is depicted in the above graphic as an activity diagram in relation to the application. The GPS records the victim's longitude and latitude to determine their current location and sends a pre-programmed emergency message over GSM to surrounding police and registered cell phones. The "Track" button is intended to safeguard females who are concerned about their safety when using public transportation. When she selects this option, a message will be sent to the local police department as well as her registered contacts. This includes a Google Maps map that may be zoomed in to pinpoint the exact location of the distressed user. It keeps track of each user's phone number, location, and emergency contacts once they've triggered the alert. The active records are underlined, and the police can amend or remove any record as necessary. Additionally, database records may be added, exported, and searched. Instant alerts can save women from becoming a victim of attacks. This app may help them develop their self-confidence to move on with their daily routine. Women those who are alone in the unsafe places can use this application. This app is useful for pregnant women in case of medical emergency.

1. Detect emergency situation based on variation of Accelerometer sensor and to initiate Messaging service.
2. Fetch the location of the user using GPS
3. Get address from obtained Latitude and Longitude

### IV. SYSTEM ARCHITECTURE

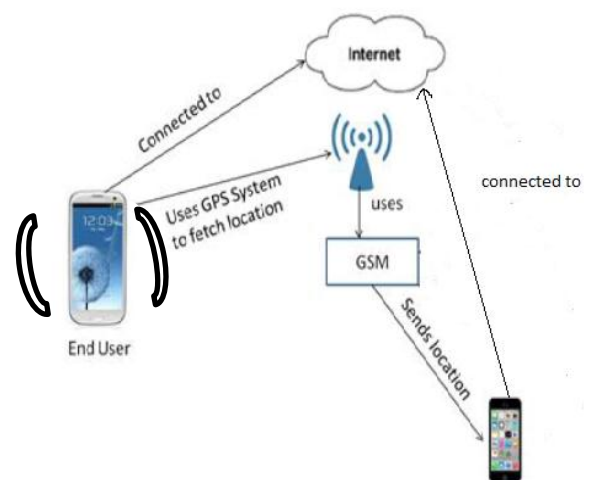
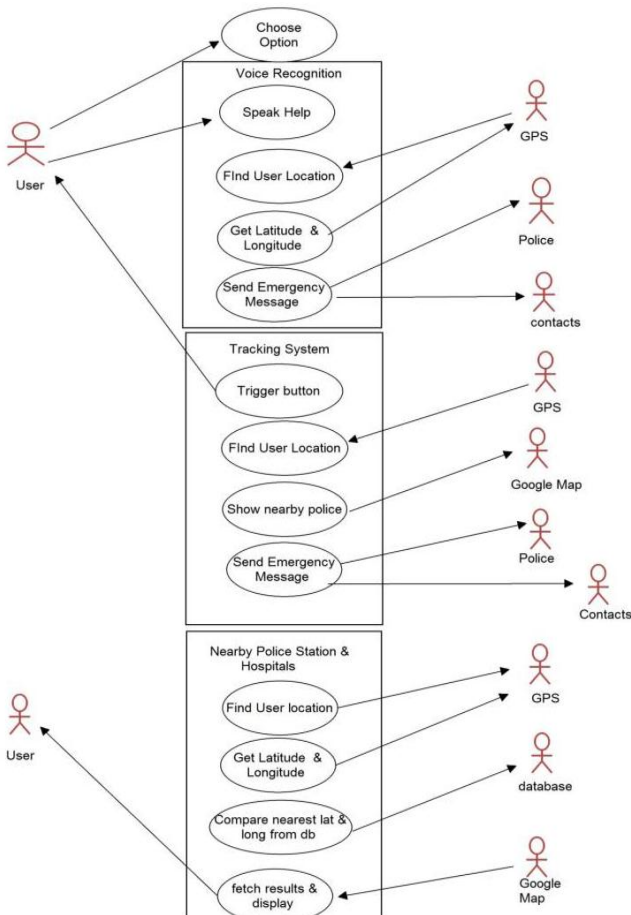


fig4.1: case diagram of proposed application

Software Tools/Platforms Used

1. Android studio
2. Android SDK
3. Java
4. SQLite
5. XML
6. Geo location API
7. Accelerometer

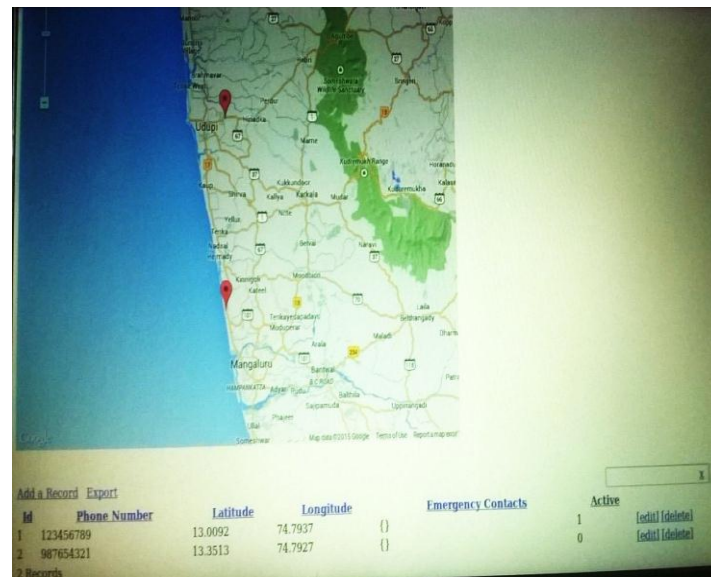


**Fig 4.2: Detailed architecture of the proposed model**

The suggested model's detailed design is depicted in Figure 3 above. The user does not need to register in order to use the app, which means there will be no delays while utilizing it in an emergency. The user is presented with a collection of alternatives from which to choose based on their current situation.

The Global Locating System (GPS) module is a precise positioning tool that tracks your location using longitude and latitude coordinates. The GPS Coder Module used this data to look for the specific address of that position, such as the street name, neighboring intersection, and so on. If GPS is turned off, the system will only provide the longitude and latitude coordinates. The use of the internet is required.

To send and receive messages using GPRS, a SIM card from the Global System for Mobile Communication (GSM) is put into the mobile device. The number of the GSM SIM card is stored in the system. With the growing popularity of GSM, network services have extended to include a wide range of custom applications, machine automation, and machine-to-machine communication. The alert mode and data service will be enabled automatically by the Shake Module (using accelerometer). The location of the person and an emergency alert message are automatically sent to the contacts added to the database after the data service is enabled.



**Fig. 4.3 location of women's phone taken during development**

**V. CONCLUSION:**

This initiative addresses significant difficulties that women face and will use GPS and GSM technology to bring solutions to them. This app will eliminate the fear that every woman in the country has about her safety and security. This programme was created not only to provide security to women in the country, but it may also be used to save any human in a dangerous situation. It informs neighbouring cops about the women so that they can look for signs or traces of the criminal and apprehend him as quickly as feasible. So that the number of crimes decreases over time, and one fine day, ladies in our country will not be afraid to leave their houses at strange hours.

**VI. FUTURE ENHANCEMENT:**

When the user selects the button, the app can be enhanced to safeguard the victim by sending a message to the nearest police station, which is shown on the map. In many instances, the user can be protected, and he or she can also assist in catching and or tracing the criminal, reducing the number of crimes committed.

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