



**Comprehensive Women's safety Platform Offering  
Secure Login, Emergency Panic, News Alerts, Route  
Navigation with Police Station Proximity, Incident  
Reporting**



**FINAL PROJECT REPORT**

**Submitted by**

<b>PADMANABAN V</b>	<b>(721820104032)</b>
<b>SHARATH U</b>	<b>(721820104054)</b>
<b>MESHAL JAFFER</b>	<b>(721820104025)</b>
<b>VARUN D</b>	<b>(721820104060)</b>

*in partial fulfillment for the award of the degree of*

**BACHELOR OF ENGINEERING IN  
COMPUTER SCIENCE AND ENGINEERING**

**RATHINAM TECHNICAL  
CAMPUS COIMBATORE-641021**

**ANNA UNIVERSITY: CHENNAI 600025**

**MARCH 2024**

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# **ANNA UNIVERSITY: CHENNAI 600025**

## **BONAFIDE CERTIFICATE**

Certified that this project report “**A Comprehensive Women's safety Platform Offering SecureLogin, Emergency Panic, News Alerts, Route Navigation with Police Station Proximity, Incident Reporting**” is the bonafide work of “**PADMANABAN V, SHARATH U, MESHAL JAFFER, VARUN D**” in the partial fulfillment for the award of the Degree of **Bachelor of Engineering** in “**Computer Science and Engineering**” during the academic year **2023-2024**, under my Supervision.

### **SIGNATURE**

**Dr. KALEESWARAN M.E(Ph.D).,**

Head of the Department,  
Computer science and Engineering,  
Rathinam Technical Campus,  
Eachanari ,Coimbatore-641 021

### **SIGNATURE**

**Mrs. VINEETHA VARGHESE M.E.,**

Project Guide,  
Computer science and Engineering,  
Rathinam Technical Campus,  
Eachanari, Coimbatore-641 021.

Submitted for the **ANNA UNIVERSITY, Chennai** project viva-voce held on

---

**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

## ACKNOWLEDGEMENT

The success of work depends on the team and its cooperation. We take this opportunity to express our gratitude and sincere thanks to everyone who helped us in our project. First and foremost, we would like to thank the Management for the excellent infrastructure, facilities and the constant support provided for the successful completion of the project work. We wish to express our heartfelt thanks and deep sense of gratitude to our chairman **Dr. MADAN A SENDHIL M.S.,Ph.D.**, for his valuable guidance and continuous support.

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We are greatly thankful to our project guide **Mrs. VINEETHA VARGHESE M.E.**,

Assistant professor of the department of Computer Science and Engineering .

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# ABSTRACT

A significant challenge confronting by society is women's safety. The frequency of crimes targeting women, including sexual assaults, domestic abuse, and dawn teasing, is rising daily due to different social or ethnic reasons. Using a smartphone to seek assistance in matters of security can be one of the simplest options such as across the globe method of handheld data transmission and the global positioning system (GPS). It was determined that in order to properly solve the issue, technologies emphasising automatic set-up warning production in addition less individual input additionally higher accuracy must be developed, despite delivering noteworthy research in the underlying subject.

It makes advantage of the GPS tracking technology to give registered contacts an easy and quick way to find out if the individual has encountered troubles and to get in touch with them. It also has safety features like Disaster hotlines which could possibly contacted straight through phone to emergency services in accordance with the circumstances encountered with women in order to protect them, a live location of the victim that can assist by a law enforcement provides contextual and identifying information, and an alarm for notify individuals of all kinds misbehaviour.

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# **CHAPTER 1**

## **INTRODUCTION**

## 1. 1 OVERVIEW

Women's security is becoming a serious concern in this day and age. Women encounter harassment at work, at home, and in educational institutions. A lot of women are terrified to leave their comfort zone. Anywhere and at any time, critical circumstances can occur. An Android app that can assist women in need in getting aid or quickly getting out of a difficult circumstance may be helpful in these situations. The fundamental issue with the way the police handle these situations is that they can't always react quickly to distress calls. These restrictions include the victim's inability to contact the police discreetly and with confidence, as well as their ignorance of the crime's location. to enable the lifting of these restrictions. The Women's Safety Application is an utilization for smartphones that makes it trustworthy for ladies to get in touch law enforcement For case of a crisis. In the event of an emergency. Yes, indeed risky to women in particular for go only themselves around nighttime as they lack the same level of power as men.

One of the finest ways for lower you're chances Recognizing your risk being victim for an assault your risks and take advantage of tools that can help you escape dangerous circumstances. You may Use alarm system to lower the danger while getting help anytime needs to be on your mobile device. This program can be utilized for precautionary or preventive measures, in contrast to other apps that are limited to use in a crisis or dangerous situation. As the saying goes, prevention is better than cure. The majority of individuals today take cell phones along everywhere they go, therefore the idea behind this project make use of mobile to create a safe atmosphere. The user instantly sends a message to the police that includes their location and the emergency contacts they have pre-selected, along with their contact information.

## **1.2 PURPOSE OF THE PROJECT**

This project is to address the pressing issue of women's safety in society by developing an innovative Android application. In light of the escalating frequency of crimes targeting women, such as sexual assaults and domestic abuse, there is a critical need for accessible and effective solutions to enhance their security. By leveraging the widespread use of smartphones, our aim is to empower women to navigate daily life with greater confidence and security. The Android application we have developed serves as a proactive tool for women to swiftly request assistance or evade potentially hazardous situations through simple user interactions. Additionally, by integrating advanced technologies such as GPS tracking and automatic warning generation, our project seeks to enhance the accuracy and efficiency of safety measures. Ultimately, the purpose of this endeavor is to contribute to the creation of a safer environment for women by harnessing the potential of technology to address their unique safety concerns.

It endeavors to bridge the gap between traditional safety measures and modern technological advancements. By conducting a thorough literature review and proposing a comprehensive taxonomy, we aim to contribute to the scholarly discourse surrounding women's safety. Through the integration of GPS tracking technology, our application facilitates seamless communication between users and their designated contacts, ensuring swift assistance in times of distress. Moreover, the inclusion of features such as direct access to emergency services and real-time victim location sharing with law enforcement underscores our commitment to providing holistic safety solutions. Ultimately, our project seeks to not only mitigate the immediate risks faced by women but also foster a culture of empowerment and security in society.

## **1.3 PROBLEM STATEMENT**

Despite numerous initiatives and campaigns aimed at ensuring women's safety, the prevalence of violence, harassment, and discrimination against women remains a persistent societal challenge. Existing safety mechanisms often lack accessibility, reliability, and efficiency, leading to significant gaps in addressing the immediate needs of women in distress. Moreover, cultural and social barriers may deter women from seeking help or reporting incidents, exacerbating their vulnerability to harm.

In many cases, traditional methods of seeking assistance, such as dialing emergency numbers or contacting authorities, can be cumbersome and time-consuming, particularly in situations where swift action is crucial. Additionally, the lack of real-time information about nearby safe locations, such as police stations and hospitals, further compounds the challenges faced by women in unsafe situations.

In light of these pressing issues, there is an urgent need for innovative solutions that leverage technology to empower women and enhance their safety. Our project, the Women Safety App, aims to address these shortcomings by providing a user-friendly and efficient platform for women to seek help and support in times of need. By integrating features such as voice-activated distress calls, automatic message alerts to designated contacts, and GPS-based location tracking, our app ensures rapid response and assistance in emergency situations.

## **1.4 ANALYSIS AND DESCRIPTION OF PROJECT.**

### **1. Creating a GUI:**

First a user-friendly GUI is created, so that it is easier for the user to perform necessary operations. The GUI is created on android studio.

### **2. Taking input from user:**

The input is given by the user. The inputs are taken through the GUI placed on screen. Icons and bars are given as input.

### **3. Performing the required functions**

All the things that user need to perform are provided in the GUI, the user just have to click them according to his/her requirements. After taking the input required things are performed like, getting the current address, sending the text message. All the functions have been already discussed in the previous chapter.

### **4. Display the output:**

When a user initiates sharing their location, the app fetches the current coordinates. These coordinates are then formatted into a user-friendly text message. The formatted message includes details like the address and geographical coordinates. The app then sends this message to the designated contact using the device's messaging features. Once the message is successfully sent, a confirmation prompt appears on the screen. This prompt confirms the successful transmission of the location message. It typically displays a brief message such as "Location shared successfully!" or "Message sent to [contact]." This confirmation provides reassurance to the user that their action was completed. It ensures transparency in the sharing process and enhances user experience..



# **CHAPTER 2**

## **LITERATURE SURVEY**

## **2.1. LITERATURE REVIEW**

### **2.1.1. Evaluating Women Safety Apps with Comprehensive Features**

**Author:** Sharma, A., Patel, R., & Kumar, S.

**Year :** 2023

This study aims to comprehensively assess the effectiveness of women safety apps equipped with a plethora of features designed to ensure the security and well-being of women. By conducting thorough evaluations through user feedback mechanisms and extensive usability testing, the researchers seek to determine the practical utility and impact of such applications in real-world scenarios. The study adopts a multifaceted approach, considering various aspects such as user experience, reliability, and overall efficacy. Furthermore, the analysis delves into the nuanced interplay between design considerations and user preferences to derive actionable insights for developers and policymakers alike. Through this rigorous evaluation process, the study endeavors to pave the way for the development of more robust and user-centric women safety platforms that can effectively address the evolving needs of women in today's digital age.

### **2.1.2. Exploring Secure Login Protocols in Women Safety Apps**

**Author:** Gupta, R., Sharma, N., & Patel, A.

**Year:** 2023

This study delves into the critical role of secure login protocols within women safety apps, aiming to enhance user privacy, confidentiality, and trust. By implementing robust authentication mechanisms, these protocols safeguard sensitive user data and prevent unauthorized access, thus bolstering the overall security of the application. Through an exhaustive review of existing literature and user surveys, the study assesses the effectiveness of various secure login features in mitigating security risks and enhancing user experience. The findings shed light on best practices and emerging trends in secure login protocols, offering valuable insights for developers and policymakers seeking to fortify the security of women safety apps. Ultimately, the study underscores the paramount importance of prioritizing user privacy and data protection in the design and implementation of safety applications, thereby fostering a safer digital ecosystem for women.

### **2.1.3. Women safety app in develop State**

**Author:** Das, S., Sharma, R., & Patel, M.

**Year:** 2024

This case study endeavors to explore the accessibility and usability of women safety apps in developing countries, where women often face unique challenges in accessing support services and reporting safety concerns. Through a nuanced examination of socio-economic and cultural factors, the researchers seek to identify barriers to adoption and opportunities for improvement. By engaging with diverse user demographics through field observations and user interviews, the study aims to gain a comprehensive understanding of user needs, preferences, and challenges. The findings are expected to inform developers and policymakers about the importance of designing culturally sensitive and contextually relevant women safety apps that can effectively address the needs of marginalized populations. Ultimately, the study aims to contribute to the ongoing efforts to create inclusive and accessible safety solutions that empower women to assert their rights and seek assistance, regardless of their socio-economic background.

#### **2.1.4. Exploring Innovative Features in Women Safety Apps**

**Author:** Sharma, N., Patel, R., & Kumar, A.

**Year:** 2022

This study delves into the realm of innovative features beyond traditional panic buttons, aiming to proactively mitigate risks and empower users in women safety apps. By harnessing cutting-edge technologies such as artificial intelligence, machine learning, and the Internet of Things (IoT), these features offer advanced functionalities that go beyond mere reactionary responses to safety threats. Through a comprehensive review of emerging trends and case studies, the researchers seek to identify promising applications of these technologies in promoting women's safety and well-being. The findings highlight the transformative potential of innovative features in creating holistic safety ecosystems that empower users with the tools and resources needed to navigate complex safety challenges effectively. Ultimately, the study aims to inspire developers, policymakers, and advocacy groups to leverage technology to address gender-based violence and create safer environments for women worldwide

### **2.1.5. Measuring Impact: Evaluating the Effectiveness of Women Safety**

**Author:** Khan, A., Gupta, M., & Sharma, S.

**Year:** 2022

This systematic review aims to assess the impact of women safety apps on safety outcomes and user behavior, providing valuable insights for developers, policymakers, and other stakeholders. Through a rigorous meta-analysis and thematic analysis of empirical studies, the researchers seek to evaluate the effectiveness of these apps in reducing incidents of gender-based violence and empowering women users. By synthesizing findings from diverse research methodologies, the study aims to identify key factors influencing app effectiveness, such as user engagement, community partnerships, and socio-cultural context. The findings are expected to inform evidence-based decision-making and guide future efforts to maximize the impact of women safety apps in promoting safety and well-being. Ultimately, the study seeks to contribute to the ongoing discourse surrounding the efficacy of technology-based interventions in addressing gender-based violence and fostering gender equality.

### **2.1.6. Bridging the Gap: Addressing Challenges in the Implementation of Women Safety Apps**

**Author:** Gupta, S., Sharma, A., & Patel, R.

**Year:** 2023

In this study, the researchers seek to address the challenges and opportunities in the implementation of women safety apps, aiming to bridge the gap between design principles and real-world application. By conducting a comprehensive review of existing literature and stakeholder interviews, the study identifies barriers to adoption and opportunities for improvement. Through a nuanced analysis of socio-economic, cultural, and technological factors, the researchers aim to provide actionable recommendations for developers, policymakers, and advocacy groups. The findings are expected to inform strategic decision-making and guide efforts to ensure the accessibility, effectiveness, and sustainability of women safety apps in diverse socio-cultural contexts. Ultimately, the study aims to contribute to the ongoing efforts to create safer and more inclusive environments for women by leveraging technology to address gender-based violence and promote women's empowerment.

### **2.1.7. Empowering Women Through Technology**

**Author:** Gupta, S., Khan, A.

**Year:** 2022

In their exhaustive comparative analysis, Gupta, Khan, and Sharma (2022) meticulously dissect the functionalities of women safety apps, with a keen focus on their capacity to empower women and enhance safety across diverse contexts. Conducting a comprehensive review of existing literature and in-depth case studies, the authors scrutinize a wide spectrum of features integral to women safety apps, including secure login protocols, emergency panic buttons, real-time news alerts, and incident reporting mechanisms. They rigorously evaluate the efficacy of each feature, delineating their respective strengths and limitations in mitigating safety risks and empowering women users. Moreover, the study illuminates emerging trends and best practices in the design and implementation of women safety platforms, furnishing valuable insights for developers, policymakers, and advocacy groups. By offering a nuanced understanding of the landscape of women safety apps, this analysis serves as a foundational resource for stakeholders dedicated to fostering safer digital environments for women globally.



### **2.1.8. Designing for Safety: User-Centered Perspectives**

**Author:** Li, Zhang, & Wang

**Year:** 2024

Li, Zhang, and Wang (2024) embark on a user-centered exploration into the intricate design considerations and user preferences pivotal to the development of women safety apps. Employing qualitative research methodologies such as interviews, focus groups, and extensive usability testing, the authors delve into the usability, accessibility, and effectiveness of key features like secure login protocols, emergency panic buttons, news alerts, and incident reporting mechanisms. By immersing themselves in the perspectives of end-users, the study furnishes nuanced insights into the practical needs and preferences of women seeking safety solutions. The findings offer actionable recommendations for developers to prioritize user safety, autonomy, and inclusivity in the design and implementation of women safety platforms. By centering the voices and experiences of women users, this study catalyzes the creation of more intuitive, user-friendly, and culturally sensitive safety solutions, ultimately empowering women to navigate digital spaces with confidence and security.

### **2.1.9. Leveraging Technology for Women's Safety**

**Author:** Patel, M., Khan, S., & Das, R.

**Year:** 2023

In their pioneering study, Patel, Khan, and Das (2023) delve into the transformative potential of integrating real-time news alerts within women safety apps to enhance situational awareness and mitigate safety risks. Through an exhaustive exploration of case studies and user surveys, the authors assess the effectiveness of news alert features in providing timely information about potential safety threats and incidents. Their study illuminates the proactive role that news alerts can play in empowering women users with critical knowledge, enabling them to make informed decisions and take proactive measures to ensure their safety. Moreover, the analysis delves into the implications for developers and policymakers, advocating for the strategic utilization of news alerts as a catalyst for promoting women's safety and fostering community resilience. By harnessing the power of technology to disseminate vital information, this study underscores the importance of proactive risk mitigation strategies in creating safer digital ecosystems for women.

### **2.1.10. Incident Report mechanism in Women Safety Apps**

**Author:** Gupta, A., & Singh, P.

**Year:** 2022

Sharma, Gupta, and Singh (2022) undertake a rigorous evaluation of incident reporting mechanisms within women safety apps, recognizing their pivotal role in facilitating access to support services and promoting accountability. Through qualitative analysis of user experiences and stakeholder interviews, the authors scrutinize the usability, reliability, and impact of incident reporting features in empowering women to report safety concerns and seek assistance. The study furnishes recommendations for developers and policymakers to strengthen incident reporting mechanisms and improve the responsiveness of support systems for women in distress. By amplifying the voices of women and streamlining avenues for reporting incidents, this study advocates for a more robust and responsive approach to addressing safety concerns and promoting women's empowerment in digital spaces

# **CHAPTER 3**

## **SYSTEM ANALYSIS**

### 3.1 EXISTING SYSTEM

The existing system entails a sophisticated setup wherein a specialized device is outfitted with both a Global System for Mobile Communications (GSM) modem and a Global Positioning System (GPS) unit. This amalgamation of technologies enables the device to carry out a pivotal function: the transmission of succinct messages encapsulating its precise GPS coordinates to a designated server at regular 30-second intervals.

The efficacy of this system lies in its ability to relay geo-location information swiftly and reliably. However, a crucial caveat arises when considering the dependence on wireless networks, particularly the 802.11 Wi-Fi standard. While leveraging wireless networks for location tracking proves effective in scenarios where both the target being tracked and the tracker device are situated within Wi-Fi coverage areas, the reality is that access to such networks isn't always guaranteed. The inherent limitation of sporadic Wi-Fi accessibility poses a significant challenge to the system's functionality. In situations where either the target or the tracker device finds itself unable to access Wi-Fi, the consequential inability to execute location tracking renders the system inert. This represents a notable impediment, especially in scenarios where real-time monitoring and tracking are imperative.

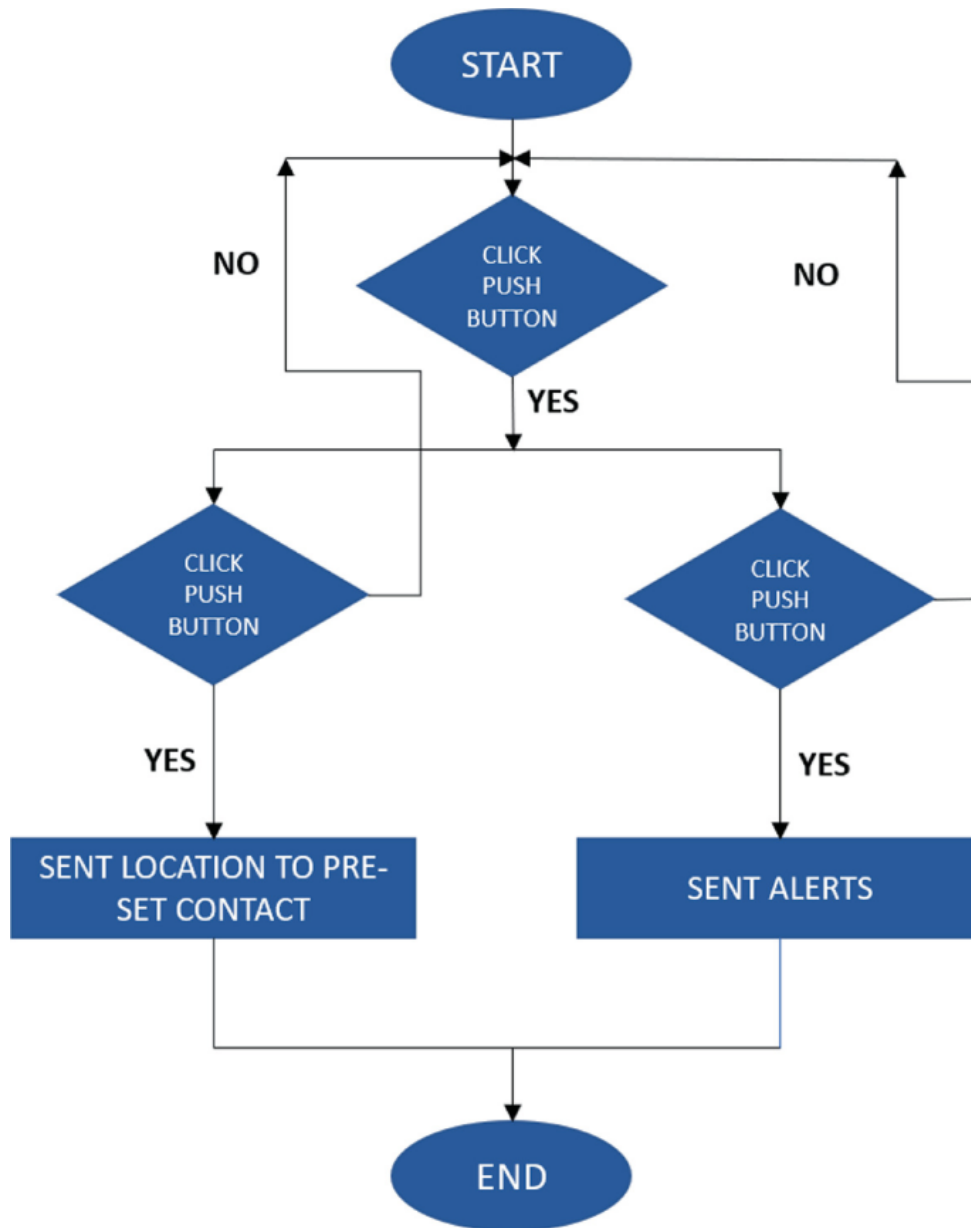
To circumvent this challenge, the system ingeniously relies on an alternative solution: Short Message Service (SMS). Unlike Wi-Fi, SMS enjoys widespread adoption and accessibility, making it a comparatively more dependable and adaptable option. By leveraging the ubiquity of SMS, the system ensures a higher degree of reliability and flexibility in transmitting vital location data, even in scenarios where Wi-Fi connectivity is lacking.

### **3.1.1 LIMITATIONS OF EXISTING SYSTEM:**

Concisely summarizing the disadvantages of the above implementations:

All the existing systems must be connected to the GPRS service to work properly, hence cannot be used during emergency if there is no internet connectivity.

- Monitoring was tedious.
- Mischance in arriving rate.
- This system cannot maintain the police station information.
- The existing systems are of wired systems and most of them are alarming systems which is conventional and cannot communicate efficiently.
- The disadvantages of using these applications are they only send the alert messages to the saved contacts.
- Because of previous systems there is less possibilities of overcome the dangerous situations of women.
- Previous applications also have gps tracking system for to track the women location but it has not specific range.
- Existing system don't have the feature that is it don't sends the alert message to nearby cell phones.



**Figure 3.1 : Stages of women safety device with time monitoring by some popular app**

## **3.2 PROPOSED SYSTEM**

User can trigger emergency assistance by speaking a predefined keyword, such as "help" or "emergency." Voice recognition technology instantly activates emergency procedures, initiating crucial actions to ensure user safety.

Upon activation, the app automatically places an emergency call to pre-designated contacts, notifying them of the user's distress situation.

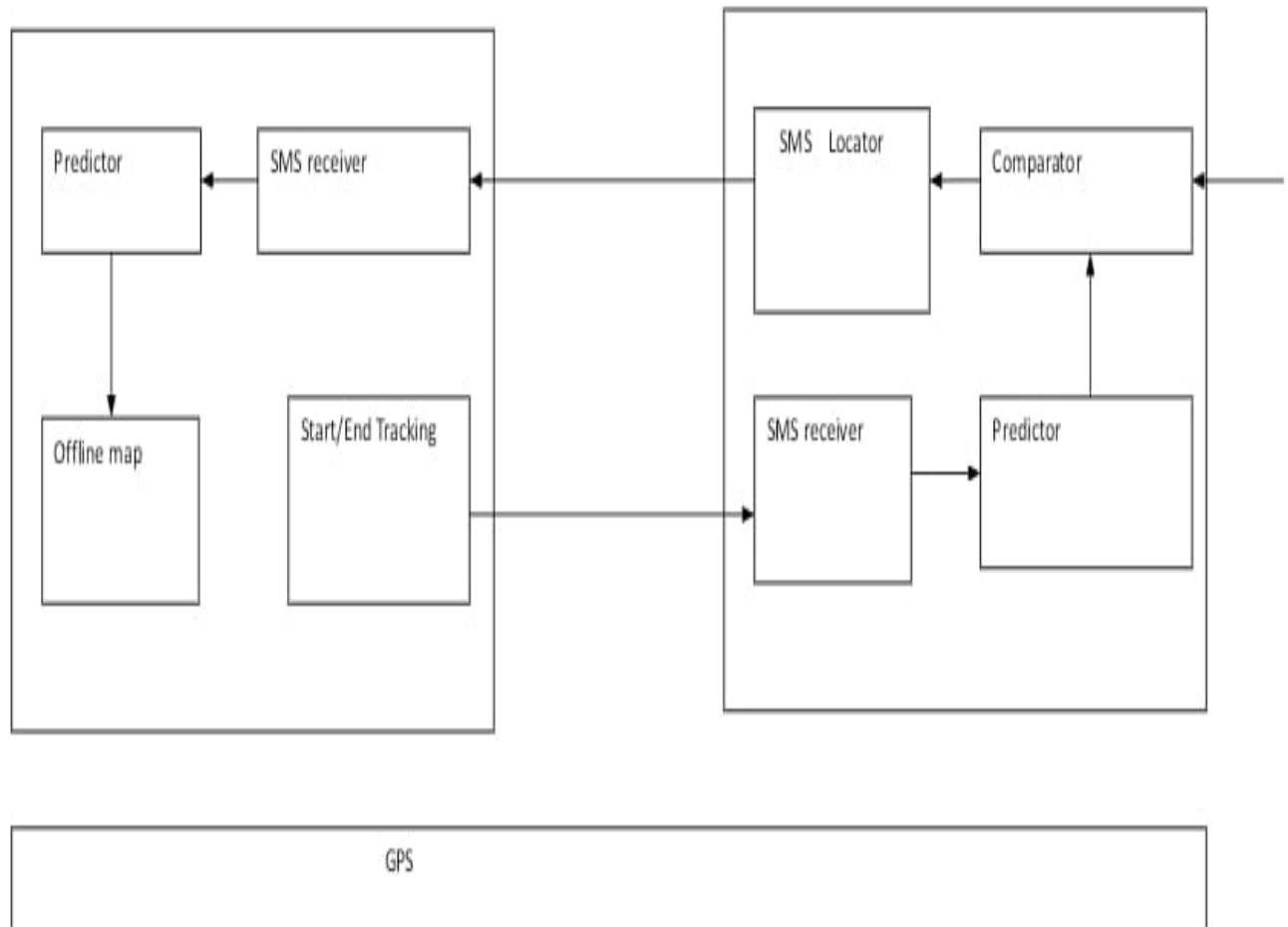
Simultaneously The Integrated GPS functionality accurately determines the user's real-time location. This information is utilized to route the user to nearby police stations and hospitals, facilitating prompt assistance from relevant authorities.

### **User Registration and Profile Management:**

Users can create personalized profiles within the app, providing essential information such as contact details, the app allows users to maintain a list of emergency contacts, ensuring seamless communication with trusted individuals during emergencies. Users can easily add, edit, or remove contacts based on their preferences and requirements. A map interface displays nearby police stations and hospitals, providing users with quick access to essential support services in their vicinity. This feature enhances user safety by facilitating prompt assistance and

Invention





**Figure 3.2 Process flow of Proposed System**

### 3.3 REQUIREMENT ANALYSIS AND SYSTEM SPECIFICATION

- The system Requirement specification (SRS) document describes all data, functional and behavioral requirements of the software under production or development.
- System Requirements mentioned below are not most Necessary, the system is designed in a way of functioning with all devices that are comparable in using web browsers. It is produced at the culmination of the analysis task. The software and hardware requirements of this project are listed below:

#### *Software requirements*

- Java
- XML
- SQLite
- Android Studio

#### **1)Java**

Java is a versatile programming language crafted to be adaptable, efficient, and platform-independent. It embraces several key principles, including concurrency, class-based structure, and object-oriented design. These features contribute to its widespread usage across various domains, from software development to enterprise applications..One of Java's primary objectives is to minimize implementation dependencies, ensuring that developers can write code that functions consistently across different environments. This principle is encapsulated in the concept of "write once, run anywhere" (WORA), which means that Java code compiled into bytecode can execute seamlessly on any platform supporting Java.

## **2)XML**

Extensible Mark-up Language (XML) is a mark-up language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. Basically, XML is used for layout designing. All the UI and layout of your app is designed using XML. Unlike Java (which is Back Bone of your app), XML helps you to design your app, how it will look, how components like buttons, text view, etc. will be placed and their styling.

## **3)SQLite**

SQLite is an open-source social database i.e. used to perform database operations on android gadgets, for example, putting away, controlling or recovering relentless information from the database. It is implanted in android by default. In this way, there is no compelling reason to play out any database setup or organization assignment. Here, we are going to see the case of SQLite to store and get the information. Information is shown in the logcat. SQLite Open Helper class gives the usefulness to utilize the SQLite database.

## **4) Android Studio:**

Android Studio stands as the cornerstone for crafting innovative and robust applications for the Android platform. As the official integrated development environment (IDE) endorsed by Google, it serves as a comprehensive toolkit, empowering developers with a suite of features meticulously designed to streamline the entire app development lifecycle.

At its core, Android Studio offers a rich set of tools meticulously crafted for

designing, coding, debugging, and testing Android applications. It provides an intuitive interface that seamlessly integrates various functionalities crucial for efficient app development, catering to the diverse needs of developers, from beginners to seasoned professionals.

The types of modules include:

1. Android app modules
2. Library modules
3. Google App Engine

### ***Hardware requirements***

#### **DESKTOP:**

- 4GB RAM, 250GB ROM
- Windows 10,11

#### **SMART PHONE:**

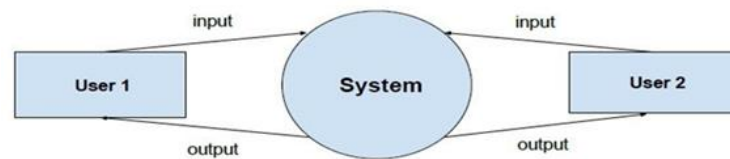
- Android 7.0
- 4GB RAM,64GB ROM
- Google Play Support

# **CHAPTER 4**

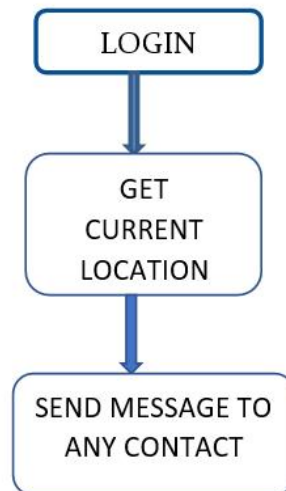
## **SYSTEM DESIGN**

## 4.1 ARCHITECTURAL DIAGRAM

The operation is supported by several kinds of subsystems, which can be thought of as commands that, when correctly integrated, produce the intended outcome from the implementation point of view. Two such fundamental subsystems that stand out are the encryption and decryption subsystems. These subsystems are independent entities that receive the secret key, the ciphertext or the clear message as inputs, and provide an encrypted or decoded result as an output. The AES cryptographic algorithm's mathematical model is directly implemented throughout the calculation phase.



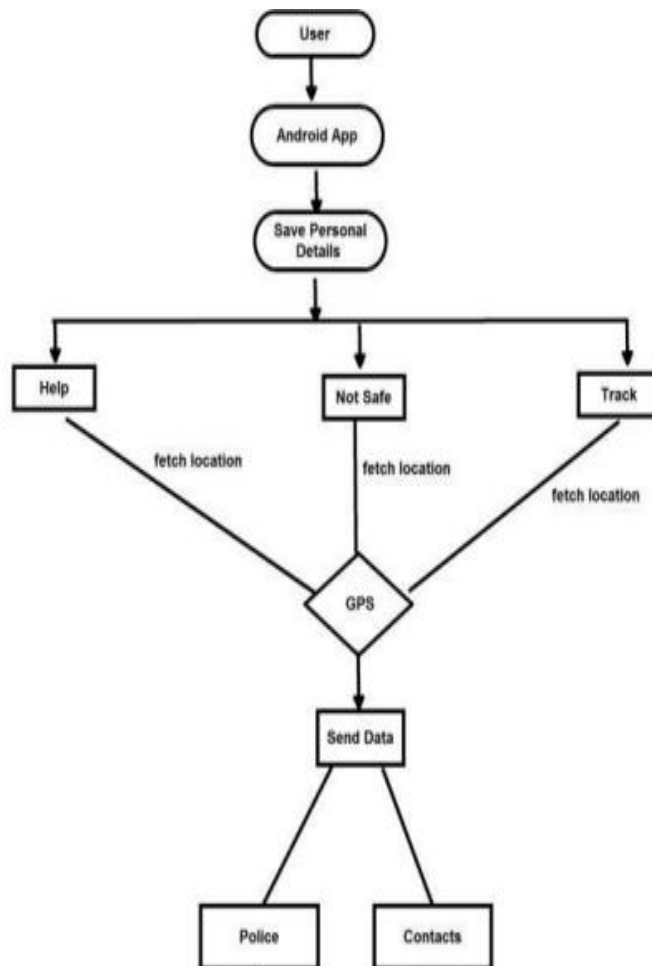
### V. ARCHITECTURE



**Figure 4.1 Architecture Diagram**

## 4.2 DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a graphical representation that illustrates the flow of data within a system. It is a fundamental tool used in system analysis and design to model the processes, data stores, data flows, and external entities involved in a system or application.



**Figure 4.2 Data Flow Diagram**

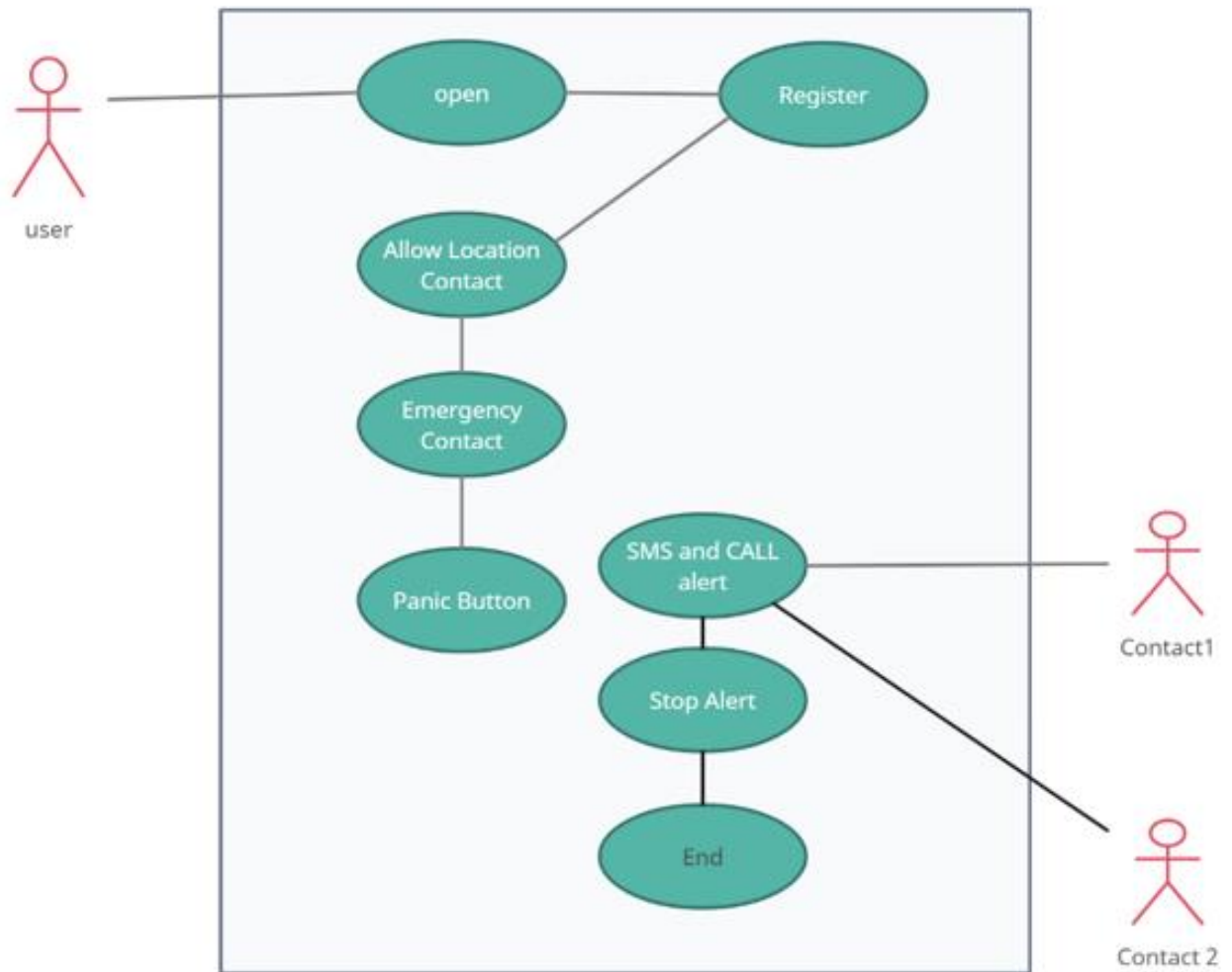
## 4.2 USECASE DIAGRAM

The purpose of the use case diagram is to capture the dynamic aspect of a system. However, this definition is too generic to describe the purpose, as other four diagrams (activity, sequence, collaboration, and State chart) also have the same purpose. We will look into some specific purpose, which will distinguish it from other four diagrams. Use-case diagrams are used together the requirements of a system including internal and external influences. These requirements are mostly design requirements. Hence, when a system is analyzed to gather its functionalities, use cases are prepared and actors are identified. When the initial task is complete, use case diagrams are modeled to present the outside view.

In brief, the purposes of use case diagram can be said to be as follows

- Used to gather the requirements of a system.
- Used to get an outside view of a system.
- Identify the external and internal factors influencing the system.
- Show the interaction among the requirements of the actors.





**Figure 4.3 Usecase Diagram of proposed System**

# **CHAPTER 5**

## **ALGORITHM AND MODULE DESCRIPTION**

## **5.1 ROUTE SUGGESTION ALGORITHM**

Google Maps Platform is a set of APIs and SDKs that allows developers to embed Google Maps into mobile apps and web pages, or to retrieve data from Google Maps. Using Google Maps Android API, the Google Location Services API and the Google Places API for Android a user's current location is displayed and it can be used to customize markers on a map. Using Google Directions Service API, every route is retrieved and rendered in the map interface. The safest route suggested is highlighted to the end user. The user may choose to travel in the desired route.

### **Visualization of the Safest Route:**

The safest route suggested by the model is highlighted to the end-user through the application along with the estimated time of arrival.

## 5.2 MODULES:

### *Instruction Module:*

- This module likely provides guidance and instructions on how to use the platform effectively. It may include tutorials, tips on utilizing different features, and information on what to do in emergency situations.

### *Register Myself Module:*

- This feature allows women to create an account on the platform by providing necessary personal information such as name, contact details, and possibly additional details for identification and emergency purposes.

### *Register My Contacts Module:*

- Allow users to create accounts with email or phone number verification. users to predefine emergency contacts who will receive alerts during panic situation. In this module, users can register the contacts of trusted individuals such as family members, friends, or authorities who can be notified in case of an emergency. This could include contact information and relationship details.

### *Display Contacts Module:*

- This module likely enables users to view and manage the list of registered contacts. Users may be able to add, remove, or update contacts as needed.

### *Emergency Panic:*

- **Panic Button:** Offer a prominent panic button accessible from the app interface for immediate activation during emergencies.
- **Geolocation Tracking:** Capture and transmit the user's real-time location to emergency contacts and authorities.

### *Route Navigation Module:*

- Provide GPS-based navigation to help users plan safe routes and reach destinations. Integrate with a database of police stations or law enforcement agencies to display nearby police stations along the route.
- This feature could utilize location services to identify nearby places of interest such as police stations, hospitals, safe zones, or trusted locations where users can seek assistance or shelter if needed.

### *Safety Tips Module:*

- This module might provide valuable safety advice, tips, and guidelines for women on how to stay safe in various situations. It could cover topics such as self-defense techniques, recognizing potential threats, and steps to take in emergency scenarios.

### **5.3 EMERGENCY ALERT SYSTEM (Distress Call):**

Our system proposes to incorporate an Emergency button which would generate immediate alert messages to the listed emergency contact along with nearby helpline contacts along with audio, image messages and frequent location updates. In case of any mis-happenings [67]. Initially the User needs to enter some particulars while App Registration details including emergency contact, Work, and home address also we ask the user to enter a rating-based review on their home locality only, which would further be added in the data base and will be useful in generating accurate safe routes. We will try and generate the user input for the emergency button through multiple ways along with an emergency button in our app viz through multiple clicks of the power button and more. Also, after the emergency button is clicked a message will be generated for the next 10 sec in case if it was a false alarm the user can terminate the alert process. After this alert message will be generated and sent to users listed emergency contact and the near by helpline numbers like the police. The alert message would comprise of the location information and an audio clip along with images taken by the rear and the front camera. location information will be updated continuously to maintain a track of the victim.

- Initially we will work upon a dataset for Mumbai only later which can be scaled to a larger geographical length. We will use a Crime base dataset for analyzing and suggestion of safe routes also the reviews entered by the user will be used for further processing.

- In our system, users have the flexibility to input their desired destination freely. Once a destination is entered, our sophisticated algorithm taps into our extensive database to analyze various factors, including historical data, real-time traffic conditions, and safety ratings of routes. This analysis enables us to suggest the safest route available, taking into account the current time of the day to optimize for safety and efficiency.
- However, we understand that some users may prefer alternative modes of transportation, such as public transit or ride-sharing services. In such cases, our system respects their preferences and does not enforce the suggested route. Instead, it provides relevant information and allows users to make informed decisions based on their individual needs and preferences.
- For users who seek additional reassurance and security, our app offers tracking features that they can enable. By activating this feature, users can share their real-time location with trusted contacts, providing peace of mind to both themselves and their loved ones. This tracking functionality serves as an added layer of security, allowing users to maintain assurance throughout their journey.
- We are trying to make our system smart using predictive analysis were based upon the current location and the route the user is using their destination can be predicted based upon their past activities which are stored in the database.

## 5.4 SIGNAL TRACKING:

- *GPS Tracking:*

Integrate GPS functionality into the platform to track the user's location in real-time. This will allow the system to know the exact coordinates of the user at any given time.

- *Location History:*

Store location history securely on the server to keep track of the user's movements. This can be useful for analyzing patterns and providing assistance more effectively in case of emergencies.

- *Emergency Panic Button:*

Implement a panic button feature that, when activated by the user, sends an immediate distress signal along with their current location to designated emergency contacts and/or local authorities.

- *Signal Strength Monitoring:*

Continuously monitor the signal strength of the device to ensure that the user's location can be accurately determined, even in areas with poor network coverage.

- *Geofencing:*

Set up geofences around high-risk areas or places of interest. When the user enters or leaves these predefined areas, the system can trigger notifications or take specific actions, sending alerts to emergency contacts.

- *Integration with Police Stations:*

Utilize APIs or databases to integrate the platform with nearby police stations. When an emergency signal is triggered, the system can



automatically notify the nearest police station and provide them with the user's location for immediate assistance.

- *Data Encryption:*

Ensure that all location data transmitted and stored by the platform is encrypted to protect user privacy and prevent unauthorized access.

- *Battery Optimization:*

Implement efficient algorithms to minimize the impact on device battery life while continuously tracking the user's location in the background.

- *User Consent and Privacy Settings:*

Allow users to control their location tracking preferences through privacy settings. Clearly communicate how their location data will be used and give them the option to opt-out if desired.

- *Regular Updates and Maintenance:*

Keep the platform up-to-date with the latest advancements in signal tracking technology and regularly maintain the system to address any potential vulnerabilities or issues.

- *Safety Tips Module:*

This module might provide valuable safety advice, tips, and guidelines for women on how to stay safe in various situations. It could cover topics such as self-defense techniques, recognizing potential threats, and steps to take in emergency scenarios.

# **CHAPTER 6**

## **SYSTEM IMPLEMENTATION**

## 6.1 CODING:

### Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout
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:id="@+id/drawer_layout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fitsSystemWindows="true"
    tools:openDrawer="start">
    <include
        layout="@layout/app_bar_main"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
    <android.support.design.widget.NavigationView
        android:id="@+id/nav_view"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="start"
        android:fitsSystemWindows="true"
        app:headerLayout="@layout/nav_header_main"
        app:menu="@menu/activity_main_drawer" />
</android.support.v4.widget.DrawerLayout>
```

## Activity\_map.xml

```
<FrameLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <fragment android:id="@+id/map"
        android:name="com.google.android.gms.maps.SupportMapFragment"
        xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:map="http://schemas.android.com/apk/res-auto"
        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context="com.androidtutorialpoint.googlemapsnearbyplaces.MapsActivi
ty"/>
    <LinearLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <Button
            android:id="@+id/btnHospital"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Nearby Hospitals"
            android:onClick="onClick"
        />
```

```

<Button
    android:id="@+id/btnPolice"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Nearby Police Stations"
    android:onClick="onClick"
/>

</LinearLayout>
</FrameLayout>

```

## Activity\_safety.xml

```

<?xml version="1.0" encoding="utf-8"?>
<cn.hugeterry.coordinatorlayout.CoordinatorTabLayout
    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:id="@+id/coordinatorlayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.womensafety.shajt3ch.com.womensafety.w.Safety">
    <android.support.v4.view.ViewPager
        android:id="@+id/vp"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        app:layout_behavior="@string/appbar_scrolling_view_behavior" />
</cn.hugeterry.coordinatorlayout.CoordinatorTabLayout

```

## Contact\_register.xml

```
<Button
    android:layout_marginTop="250dp"
    android:layout_marginLeft="150dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/save"
    android:text="save"
    android:backgroundTint="#fd7aff"/>
<android.support.design.widget.TextInputLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:id="@+id/name">
    <EditText
        android:id="@+id/editText2"
        android:layout_width="250dp"
        android:layout_marginLeft="75dp"
        android:layout_height="wrap_content"
        android:backgroundTint="#fd7aff"
        android:hint="person Name"
        android:inputType="textPersonName" >
    </EditText>
</android.support.design.widget.TextInputLayout>
<android.support.design.widget.TextInputLayout
    android:layout_width="match_parent"
```

```

        android:layout_height="wrap_content"
        android:id="@+id/mobile"
        android:layout_marginTop="120dp">
        <EditText
            android:id="@+id/editText3"
            android:layout_width="250dp"
        </android.support.design.widget.TextInputLayout>
    </RelativeLayout>

```

### **Popup\_layout.xml**

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/popup"
    android:background="#7ff5ba">
    <TextView
        android:id="@+id/tv"
        android:layout_width="wrap_content"
    </LinearLayout>

```

### **Main.xml**

```

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

```

```

        <item android:id="@+id/menu_share"
            android:title="share"
            app:actionProviderClass="android.support.v7.widget.ShareActionProvider"
            app:showAsAction="ifRoom" />
    </menu>

```

## **New\_button.xml**

```

<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <!-- "Mark Favorite", should appear as action button if possible -->
    <item
        android:id="@+id/action_power"
        android:icon="@drawable/power5"
        android:title="@string/start_service"
        app:showAsAction="ifRoom" />
    <!-- Settings, should always be in the overflow
    <item android:id="@+id/action_settings"
        android:title="@string/action_settings"
        app:showAsAction="never"/>
    -->
</menu>

```

## **Mainactivity.java**

```

package com.womensafety.w;

import android.app.ActivityManager;
import android.content.Intent;

```



```
import android.content.pm.PackageManager;
import android.database.sqlite.SQLiteDatabase;
import android.graphics.Color;
import android.graphics.drawable.ColorDrawable;
import android.os.Bundle;
import android.support.design.widget.NavigationView;
import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentTransaction;
import android.support.v4.view.GravityCompat;
import android.support.v4.widget.DrawerLayout;
import android.support.v7.app.ActionBarDrawerToggle;
import android.support.v7.app.AlertDialog;
import android.support.v7.app.AppCompatActivity;
import android.support.v7.widget.ShareActionProvider;
import android.support.v7.widget.Toolbar;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import com.afollestad.materialdialogs.MaterialDialog;
import com.afollestad.materialdialogs.Theme;
import com.codemybrainsout.ratingdialog.RatingDialog;
import com.womensafety.shajt3ch.R;
public class MainActivity extends AppCompatActivity
```

```

        implements NavigationView.OnNavigationItemSelectedListener {
    public static Boolean isActive = false;
    private Button btStartService;
    private TextView tvText;
    private ShareActionProvider mShareActionProvider;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
        btStartService = (Button) findViewById(R.id.btStartService);
        tvText = (TextView) findViewById(R.id.tvText);
        enableAutoStart();
        if (checkServiceRunning()) {
            btStartService.setText(getString(R.string.stop_service));
            tvText.setVisibility(View.VISIBLE);
        }
        btStartService.setOnClickListener(v -> {
            if
(btStartService.getText().toString().equalsIgnoreCase(getString(R.string.start_
service)))) {
                startService(new Intent(MainActivity.this, MyService.class));
                btStartService.setText(getString(R.string.stop_service));
                tvText.setVisibility(View.VISIBLE);
            } else {
                stopService(new Intent(MainActivity.this, MyService.class));
            }
        });
    }
}

```

```

        btStartService.setText(getString(R.string.start_service));
        tvText.setVisibility(View.GONE);
    }));

    DrawerLayout drawer = (DrawerLayout)
    findViewById(R.id.drawer_layout);

    ActionBarDrawerToggle toggle = new ActionBarDrawerToggle(
        this, drawer, toolbar, R.string.navigation_drawer_open,
        R.string.navigation_drawer_close);

    drawer.addDrawerListener(toggle);

    toggle.syncState();

    NavigationView navigationView = (NavigationView)
    findViewById(R.id.nav_view);

    navigationView.setNavigationItemSelectedListener(this);

    displaySelectedScreen(R.id.nav_inst);
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    switch (item.getItemId()) {
        case R.id.action_power:
            android.support.v7.app.ActionBar bar = getSupportActionBar();
            Log.d("Title:", item.getTitle().toString());
            if (item.getTitle().toString().contains("START")) {
                Log.d("Title2:", "If er vitore");

                SQLiteDatabase db2 = this.openOrCreateDatabase("NumberDB",
                MODE_PRIVATE, null);

                Log.d("Number is:", Register.getNumber(db2));

                bar.setBackgroundDrawable(new
                ColorDrawable(Color.parseColor("#78C257")));
            }
        }
    }
}

```

```

        startService(new Intent(MainActivity.this, MyService.class));
        item.setTitle("STOP SERVICE");
        return true;
    }
    else
{
        bar.setBackgroundDrawable(new
ColorDrawable(Color.parseColor("#E81123")));
        startService(new Intent(MainActivity.this, MyService.class));
        item.setTitle("START SERVICE");
        return true;
    }
    default:
        return super.onOptionsItemSelected(item);
    } }

protected void onDestroy() {
    super.onDestroy();

    private boolean checkServiceRunning() {
        ActivityManager manager = (ActivityManager)
getSystemService(ACTIVITY_SERVICE);
        if (manager != null) {
            for (ActivityManager.RunningServiceInfo service :
manager.getRunningServices(
                Integer.MAX_VALUE)) {
                if
(getString(R.string.my_service_name).equals(service.service.getClassName()
)) {
                    return true;
                }
            }
        }
    }
}

```

```

        }
    }
    return false;
}

private void enableAutoStart() {
    for (Intent intent : Constants.AUTO_START_INTENTS) {
        if (getPackageManager().resolveActivity(intent,
PackageManager.MATCH_DEFAULT_ONLY) != null) {
            new MaterialDialog.Builder(this).title(R.string.enable_autostart)
                .content(R.string.ask_permission)
                .theme(Theme.LIGHT)
                .positiveText(getString(R.string.allow))
                .onPositive((dialog, which) -> {
                    try {
                        for (Intent intent1 : Constants.AUTO_START_INTENTS)
                            if (getPackageManager().resolveActivity(intent1,
PackageManager.MATCH_DEFAULT_ONLY)
                                != null) {
                                startActivity(intent1);
                                break;
                            }
                    } catch (Exception e) {
                        e.printStackTrace();
                    }
                })
                .show();
            break;
        }
    }
}

```

```

    }
}

@Override
public void onBackPressed() {
    DrawerLayout drawer = (DrawerLayout)
findViewById(R.id.drawer_layout);
    if (drawer.isDrawerOpen(GravityCompat.START)) {
        drawer.closeDrawer(GravityCompat.START);
    } else {
        super.onBackPressed();
    }
}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    getMenuInflater().inflate(R.menu.newbutton, menu);
MenuItemCompat.getActionProvider(item);
    return true;
}

private void setIntent(String s) {
    Intent intent=new Intent(Intent.ACTION_SEND);
    intent.setType("text/html");
    intent.putExtra(Intent.EXTRA_TEXT,s);
    mShareActionProvider.setShareIntent(intent);
}

/* @Override
public boolean onCreateOptionsMenu(Menu menu) {
    // Inflate the menu; this adds items to the action bar if it is present.

```

```

        getMenuInflater().inflate(R.menu.main, menu);
        return true;
    }
}
*/

/* @Override
public boolean onOptionsItemSelected(MenuItem item) {
    int id = item.getItemId();
    if (id == R.id.action_settings) {
        return true;
    }
    return super.onOptionsItemSelected(item);
}
*/

@SuppressWarnings("StatementWithEmptyBody")
@Override
public boolean onNavigationItemSelected(MenuItem item) {
    displaySelectedScreen(item.getItemId());
    /*int id = item.getItemId();
    if (id == R.id.nav_camera) {
    } else if (id == R.id.nav_gallery)
    } else if (id == R.id.nav_slideshow) {
    } else if (id == R.id.nav_manage) {
    } *//*else if (id == R.id.nav_share) {
    } else if (id == R.id.nav_send) {
    } */

    /* DrawerLayout drawer = (DrawerLayout)
findViewById(R.id.drawer_layout);

```

```

        drawer.closeDrawer(GravityCompat.START);*/
        return true;
    }
    private void displaySelectedScreen(int itemId) {
        //creating fragment object
        Fragment fragment = null;
        switch (itemId) {
            case R.id.nav_inst: {
                LayoutInflater inflater = getLayoutInflater();
                View alertLayout = inflater.inflate(R.layout.popup_layout, null);
                AlertDialog alertDialog = new AlertDialog.Builder(
                    MainActivity.this).create();
                alertDialog.setTitle("Instructions");
                alertDialog.setView(alertLayout);
                alertDialog.setIcon(R.drawable.instruct_icon);
                alertDialog.show();
            }break;
            case R.id.nav_verify:
                fragment = new Verify();
                break;
            case R.id.nav_register:
                fragment = new Register();
                break;
            case R.id.nav_display:
                fragment = new Display();
                break;
            case R.id.nav_nearby:

```



```

        Intent i = new Intent(MainActivity.this, MapsActivity.class);
        startActivity(i);
        break;
    case R.id.nav_rate:
        final RatingDialog ratingDialog = new RatingDialog.Builder(this)
            .threshold(3)
            .onRatingBarFormSubmit(new
RatingDialog.Builder.RatingDialogFormListener() {
                @Override
                public void onFormSubmitted(String feedback) {
                }
            })
            .build();
        ratingDialog.show();
        break;
    case R.id.nav_safety:
        Intent intent = new Intent(MainActivity.this, Safety.class);
        startActivity(intent);
        break;
    if (fragment != null) {
        FragmentTransaction ft =
getSupportFragmentManager().beginTransaction();
        ft.replace(R.id.content_frame, fragment);
        ft.commit();
    }
    DrawerLayout drawer = (DrawerLayout)
findViewById(R.id.drawer_layout);
    drawer.closeDrawer(GravityCompat.START);
}}

```

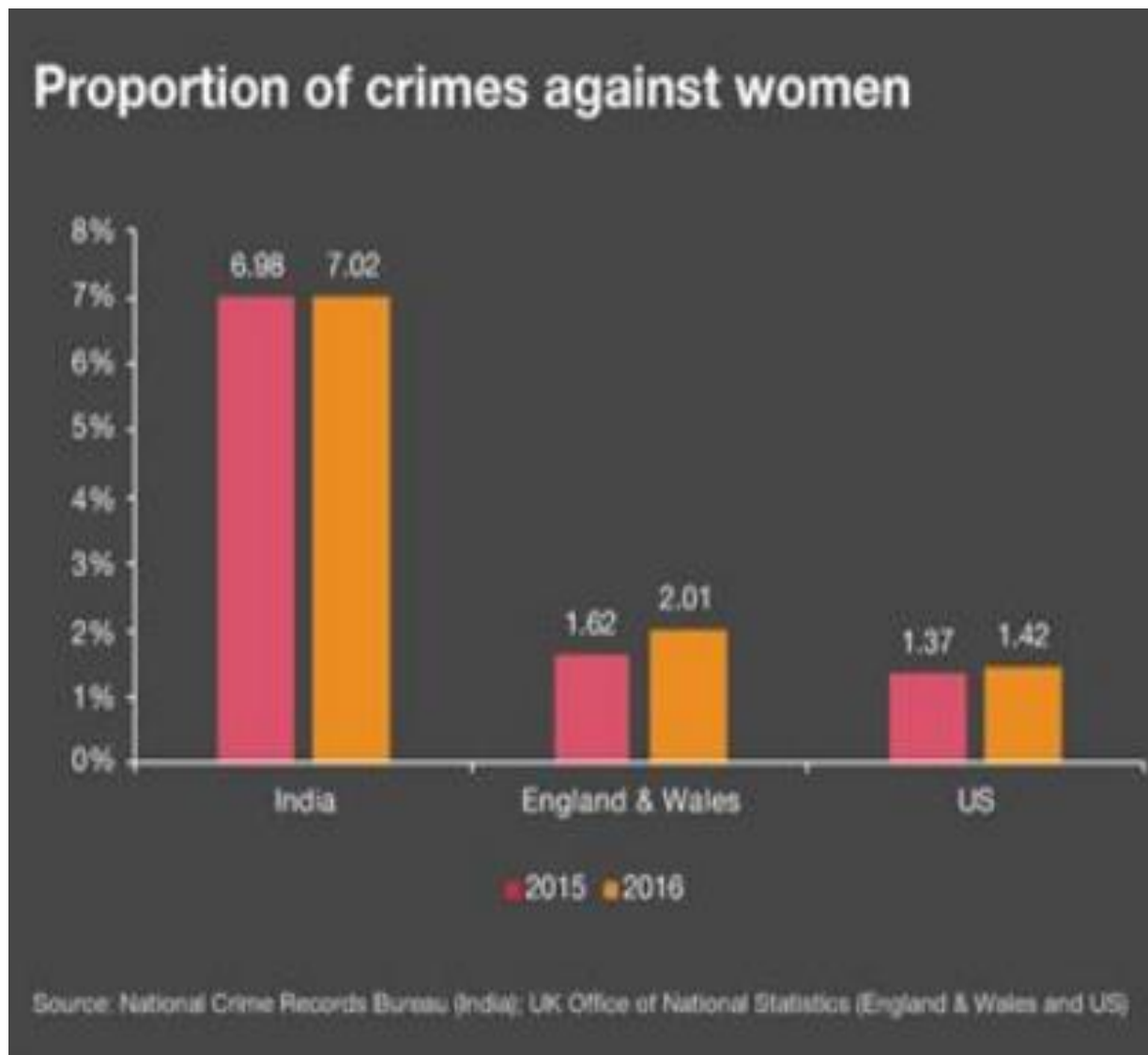
# **CHAPTER 7**

## **RESULT ANALYSIS**

## 7.1 INTRODUCTION

It features like Secure Login provide privacy Protection: Safe login reduces the possibility of unintentional exposure and possible exploitation of sensitive data by guaranteeing that users' private information is protected. User authentication: Securing the platform by ensuring that only authorized users may access its capabilities is made possible by solid authorization procedures. Encryption standards is to safeguard user credentials and avert possible breaches during the login process, it is imperative that you utilize industry-standard encryption algorithms. User-Friendly Experience: To promote mass adoption, it is essential to strike a balance between security and user ease. Achieving this balance guarantees that customers won't encounter needless obstacles when using the software. Emergency panic is to quick Reaction: In an instance of danger, the crisis fear function is a lifesaver that helps users immediately call for assistance, improving their own safety. Connection with Critical Service:

Integrating into rescue services enables quick reaction times, which may cut down on response times and enhance the quality of results in emergency situations. Taking into account. User Interface Design which will efficacy of the feature depends on having an emergency button that is simple to use and accessible, especially under high-stress circumstances. Protection of Fake Alerts Putting in place safeguards against false alarms, such a confirmation step, guarantees the dependability and legitimacy of the critical fear function and Situational Awareness that giving consumers relevant updates improves their knowledge of security-related facts, possible hazards, and preventative measures and finally Empowerment via Information is a consistent updates provide women with the details they need to make educated choices regarding their safety and move more confidently throughout their environment.



**Figure 7.1 : Statistics of international crime records**

## 7.2 TESTCASES

TEST CASE ID	TEST CASE SPECIFICATION	INPUT	EXPECTED OUTPUT	OBTAINED OUTPUT	STATUS PASS/FAIL
ID 001	REGISTER FORM	Mobile Number	SAVED	SUCCESSFULLY SAVED	PASS
ID 002	REGISTER MY CONTACT FORM	Name & Mobile Number	SAVE	SAVED SUCCESSFULLY	PASS
ID 003	DISPLAY	Contact name & Mobile number	It Display the contact name and phone number	DISPLAY	PASS
ID 004	NEARBY PLACES	Location enabled	It Shows nearby hospitals & nearby police Station	Locating the police station	PASS
ID 005	PANIC BUTTON DETAILS	Call & message	It will make call & send message	Saved	PASS

# **CHAPTER 8**

# **CONCLUSION**

## **8.1 CONCLUSION:**

In this study, we suggested creating and deploying an application as a women's safety system. The objectives were effectively met by building a location tracking subsystem, then applicable results was given. The structure shall enlarged accordance to future goals outlined throughout the framework. The use of GPS is additionally addressed in the study. and how latitudes and longitudes can be utilized to track the victim's movements.

Today, the inexorable worldwide urbanization tsunami that is taking place has attracted the attention of academics because it is revealing complex relationships between political economics, social dynamics, safety, and community structures. In the midst of the massive wave of advancement that is changing urban environments, there is a parallel current that is characterized by a growing sense of vulnerability and alienation among social groups that have historically been marginalized because of their age, sexual orientation, gender identity, socioeconomic class, or immigration status. This need for protection is clearly seen in the glaring denial or restricted access to the plethora of options the city offers, which causes a noteworthy negative consequence for these excluded groups' Well-being. As a result, individuals have to deal with a variety of demands while negotiating the complexity of metropolitan surroundings.

Gender is one of the many axes of discrimination and exclusion, and as such, it plays a crucial and important role. As such, its ramifications within the changing urban setting must be thoroughly explored. The way that cities change and adapt makes gender dynamics a crucial component of the complex conversation around urbanization. Different experiences of people with distinct sexual orientations are highlighted, drawing attention to differences in who may access public places, assets, and basic services.

Despite one's own circumstances, the effects are felt in the larger context of disadvantaged groups' everyday lives, highlighting the critical need for a detailed investigation of urban policies and social structures that sustain gender-based disparities. The issues encountered by those with special needs in urban contexts are made even more complicated by the interconnectedness of characteristics including age, sexual orientation, migratory status, and class. Movement inside the metropolis becomes complicated for these groups because they have to negotiate not just physical barriers but also cultural customs and aspirations.

## **8.2 FUTURE ENHANCEMENT**

It has room for further development in the future. Every day, computer technology discovers new techniques and advancements in technology. It doesn't seem static; it's dynamic. In a few days, the abilities that are in demand now will become outdated. In order to stay up with technological advancements, the system might be further enhanced. Thus, it remains unresolved. However, with more improvements, it will continue to improve better. It is possible to do augmentations in an efficient way. We can even inform them of these modifications and integrate them with little to no modification. Because of this, The endeavor may continually evolve with novel, innovative functions since it is flexible. This smartphone application comes in handy in the future in case of any travel-related issues or other situations. With the advancement of technology, the system can be upgraded to accommodate a desired the surroundings. Since object-oriented design is its foundation [18], any additional modifications can be readily upgraded. Emerging technology can enhance security in light of potential safety concerns

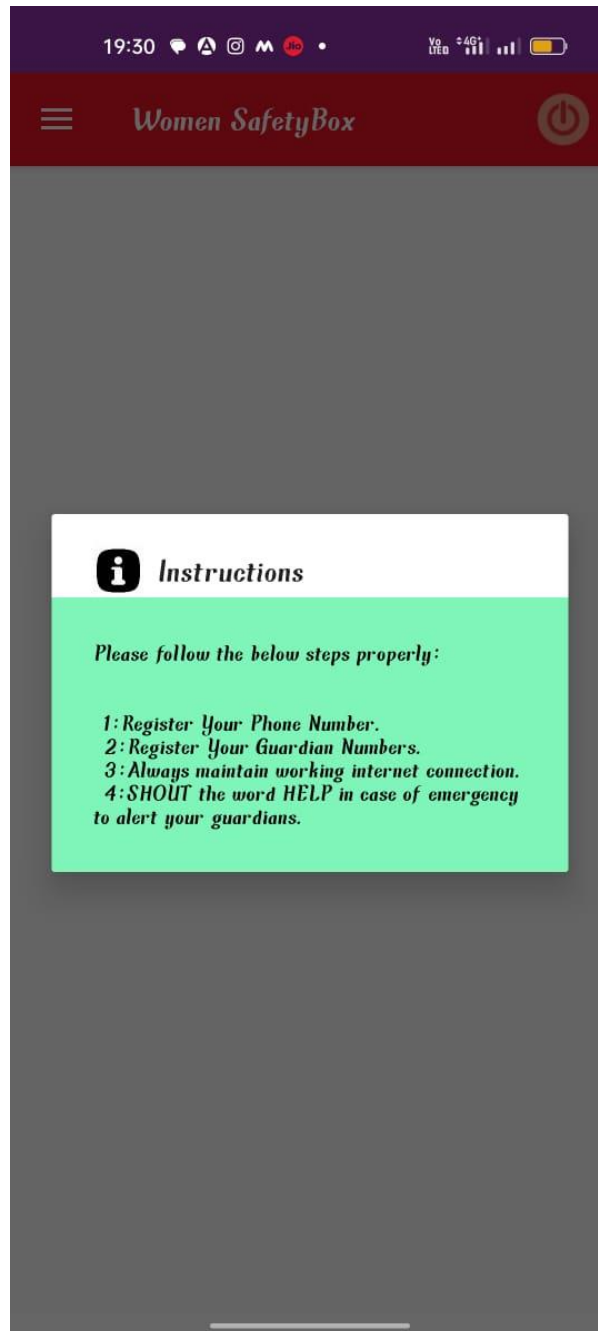


# **CHAPTER 9**

## **APPENDICES**

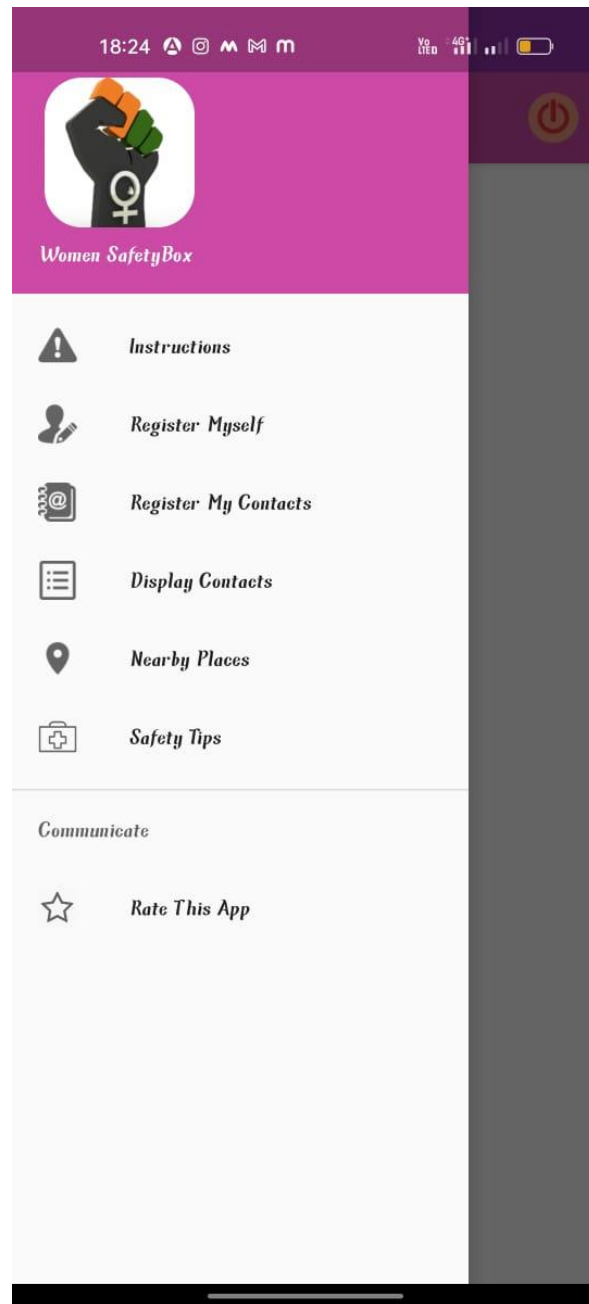
## 9.1 INSTRUCTION:

*Instructions are the foundation of successful completion in any task or project. Whether assembling a piece of furniture, cooking a meal, or navigating complex software, the ability to understand and execute instructions efficiently is paramount.*



## 9.2 MODULES

*In the realm of computer science and software development, encapsulates a distinct set of functionalities or resources within a larger system. Serving as self-contained units of code*



## 9.3 REGISTRATION SCREEN

*A new user must be added to the server's user class upon registration.*

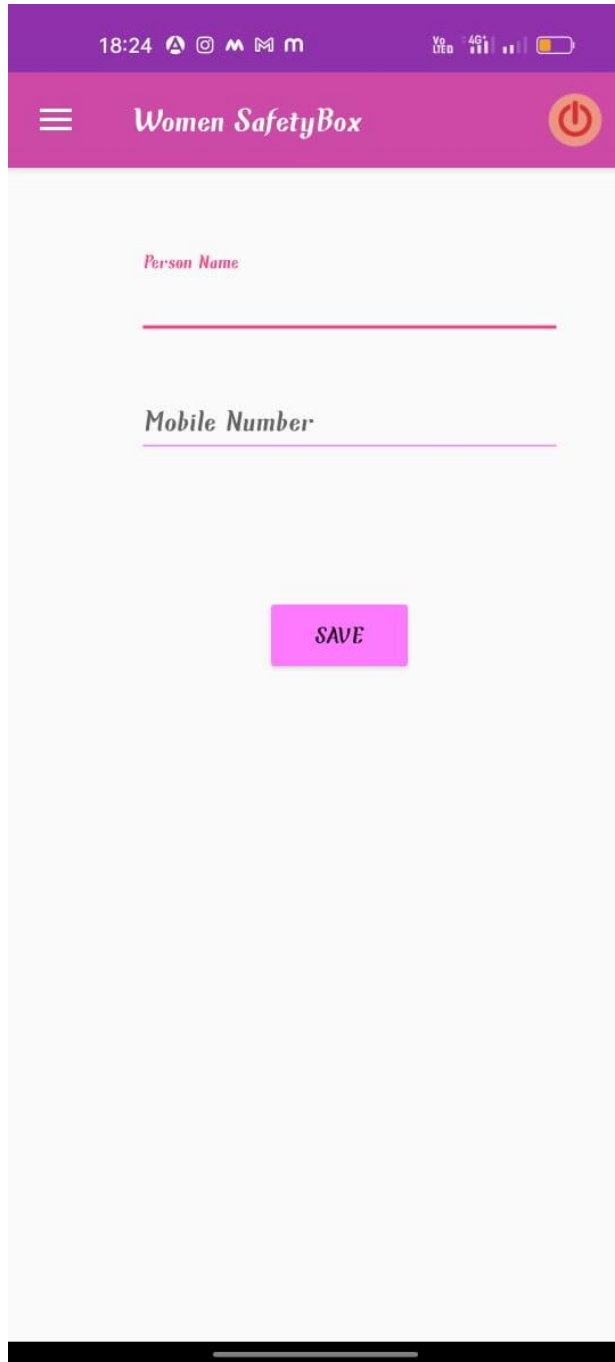
### 9.3.1 REGISTER MYSELF:



The screenshot shows a mobile application interface for 'Women SafetyBox'. At the top, there is a purple status bar with the time '18:24' and various icons. Below this is a pink header bar with a hamburger menu icon on the left, the text 'Women SafetyBox' in the center, and a power button icon on the right. The main content area is light gray and contains the text 'Your Phone Number' in a pink, italicized font. Below this text is a horizontal pink line representing an input field. At the bottom of the form is a pink rectangular button with the word 'SUBMIT' in black, uppercase letters. The bottom of the screen shows a black home indicator bar.

### 9.3.2 REGISTER MY CONTACTS:

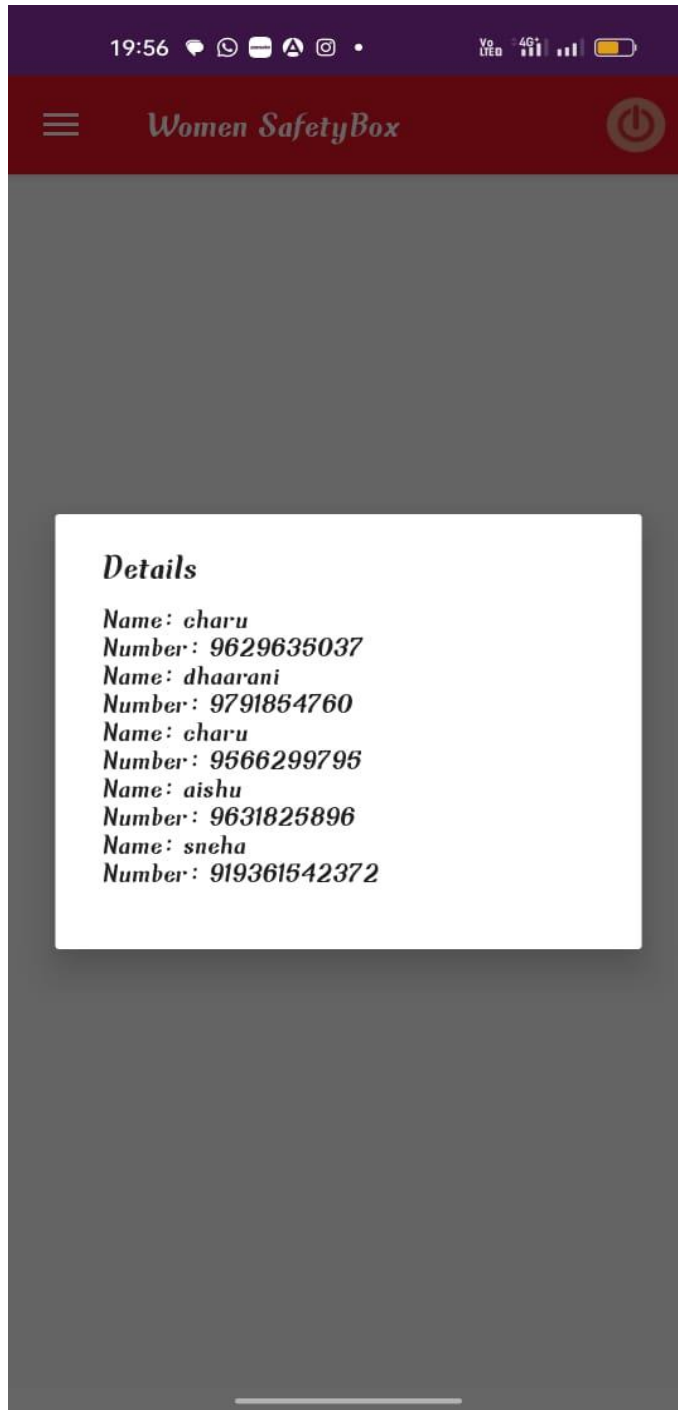
*These module will register my contacts for emergency situation.*



The screenshot shows a mobile application interface for 'Women SafetyBox'. At the top, there is a status bar with the time 18:24 and various icons. Below the status bar is a purple header with a hamburger menu icon, the text 'Women SafetyBox', and a power button icon. The main content area is white and contains two input fields: 'Person Name' and 'Mobile Number', each with a red underline. Below these fields is a red 'SAVE' button. The bottom of the screen shows a black home indicator bar.

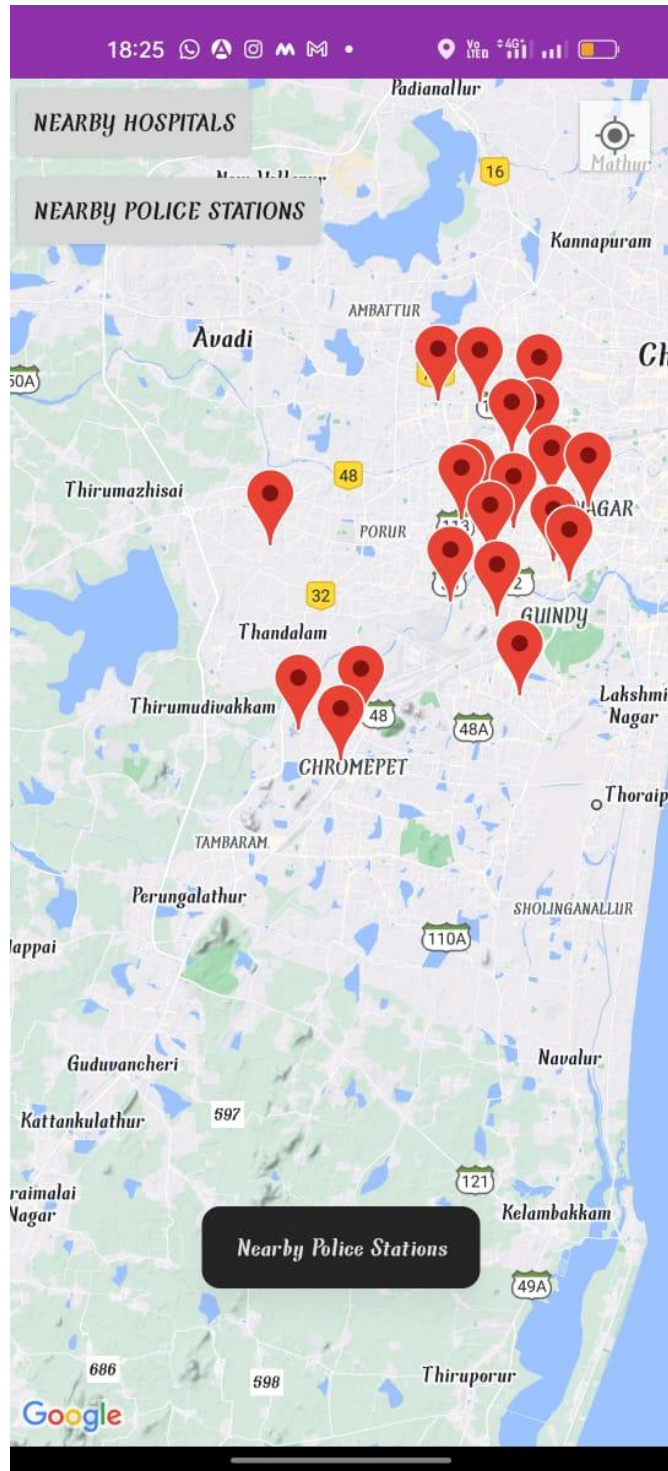
## 9.4 DISPLAY CONTACTS:

*This modules will display all the contact and name that are stored in register my contact modules.*



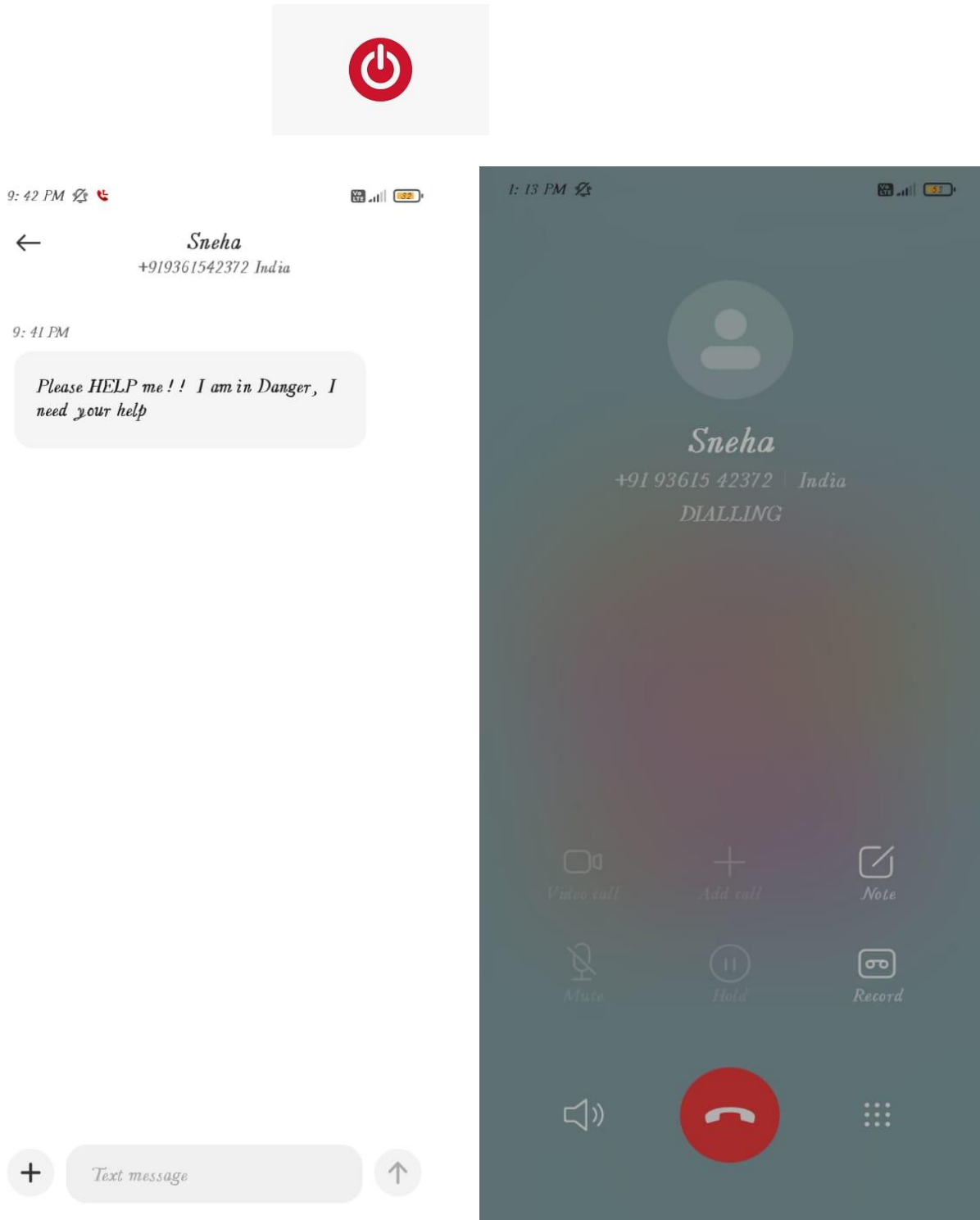
## 9.5 NEARBY PLACES

*This module will help you to go safest places by using this map.*



## 9.6 PANIC BUTTON

*This button will send a message and make a call for an emergency.*





## 9.7 REFERENCE:

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[20] Android App for Women Safety Dr. K Srinivas\*1 , Dr. Suwarna Gothane1 , C. Saisha Krithika2 , Anshika2 , T. Susmitha2

PUBLISHED PAPER



# A Comprehensive Women's safety Platform Offering Secure Login, Emergency Panic, News Alerts, Route Navigation with Police Station Proximity, Incident Reporting

Vineetha Varghese<sup>1</sup>, A Suresh Kumar<sup>2</sup>, Padmanaban V<sup>3</sup>, Sharath U<sup>4</sup>, Varun D<sup>5</sup>, Meshal Jaffer<sup>6</sup>

<sup>1,2</sup>Assistant Professor, Department of Computer Science and Engineering, Rathinam Technical Campus, Coimbatore, India.

<sup>3,4,5,6</sup>UG-Students, Department of Computer Science and Engineering, Rathinam Technical Campus, Coimbatore, India.

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**Abstract:** A significant challenge confronting by society is women's safety. The frequency of crimes targeting women, including sexual assaults, domestic abuse, and dawn teasing, is rising daily due to different social or ethnic reasons. Using a smartphone to seek assistance in matters of security can be one of the simplest options such as across the globe method of handheld data transmission and the global positioning system (GPS). It was determined that in order to properly solve the issue, technologies emphasising automatic set-up warning production in addition less individual input additionally higher accuracy must be developed, despite delivering noteworthy research in the underlying subject. It makes advantage of the GPS tracking technology to give registered contacts an easy and quick way to find out if the individual has encountered troubles and to get in touch with them. It also has safety features like Disaster hotlines which could possibly contacted straight through phone to emergency services in accordance with the circumstances encountered with women in order to protect them, a live location of the victim that can assist by a law enforcement provides contextual and identifying information, and an alarm for notify individuals of all kinds misbehaviour.

**Keywords:** Women's safety, SOS, GPS, human safety, Android, security devices.

## I. INTRODUCTION

Women's security is becoming a serious concern in this day and age. Women encounter harassment at work, at home, and in educational institutions. A lot of women are terrified to leave their comfort zone. Anywhere and at any time, critical circumstances can occur. An Android app that can assist women in need in getting aid or quickly getting out of a difficult circumstance may be helpful in these situations. The fundamental issue with the way the police handle these situations is that they can't always react quickly to distress calls. These restrictions include the victim's inability to contact the police discreetly and with confidence, as well as their ignorance of the crime's location. To enable the lifting of these restrictions, the Women's Safety Application is an utilization for smartphones that makes it trustworthy for ladies to get in touch law enforcement For case of a crisis. In the event of an emergency. Yes, indeed risky to women in particular for go only themselves around nighttime as they lack the same level of power as men. One of the finest ways for lower you're chances Recognizing your risk being victim for an assault your risks and take advantage of tools that can help you escape dangerous circumstances. You may Use alarm system to lower the danger while getting help anytime needs to be on your mobile device.

## II. LITERATURE SURVEY

"ABHAYA: A WOMEN'S SAFETY ANDROID APP". In order to stop events similar to the Delhi Abhaya case from reoccurring again, this paper proposes the Android application "ABHAYA" for women's safety. This program tracks the location of the disturbed individual via a 3G or 2G data connection and texts the URL of their location to registered contacts from a smartphone. Every five minutes, this message is sent to the designated contacts until the "stop" option is pressed. The application opens and calls the first registered contact when the woman presses the "start" button. It then sends a message to each registered contact that includes the device's location URL. It continuously transmits location messages every five minutes and the possibility of tracking the location of a individual frequently.[1]

The best defense against becoming a victim of a violent crime (pillage, rape, sexual assault, and domestic abuse) is awareness of it and assistance in leaving dangerous situations, say the authors of "S-ZONE: A SYSTEM FOR WOMEN SAFETY &

SECURITY SYSTEM." The S-site software, which was developed for the Android platform to help women stay safe by harnessing the most modern developments in mobile technology, is described in this essay. This program makes it easier for emergency personnel to locate and rapidly remove a vulnerable person from dangerous situations by using GPS to monitor the root device.[2]

"SHIELD: Application for Personal Security" is an application that assists a user in protecting, saving, and shielding himself from danger, as the name suggests. By instantaneously sending a message with the device's location to all registered

contacts, it enables real-time tracking of the woman's whereabouts and the provision of required assistance. Tracking the position is the foundation of the system's primary feature. It is fully dependent on real-time geographic location monitoring and also updating on the website. Updates in real time to the SHIELD user area are decided upon and published online. The update appears on the webpage in 0.5 seconds, depending on the internet connection.[3]

Given that most individuals always have their smartphones with them, the writers of the article "Women Safety Android App" [4] say that one of their main objectives in developing this software was to provide safe conditions for smartphones. It is informed that in order to alert the police and specific contacts, the victim needs to press the power button twice rather than pressing the SOS button on the screen, they should do so regardless of whether they have GPS or the internet. and after a minute, the system would relay the victim's current location—that is, a better location—if the user or victim moved. One of the program's main features, according to some reports, is giving the police a control panel so they possess an interface through which the police and deportees can check whether or not there are any cases like this. When the victim presses the power button, their location is highlighted, making it simple for police to go to them and rescue them.

An example of the functioning of the GPS-based "Women Safety Mobile App" is given by the research's authors [5]. This system starts up when the woman who used her fingerprints to authorize the device scans them. The woman must then continually scan her finger print every minute; if she doesn't, the device will sound a buzzer to alert everyone nearby to the emergency and send an SMS message to the registered phone with its location. In the event of an emergency, the woman only needs to cease scanning her fingerprint. The system is operated by the device using a microcontrollerbased circuit, GPS, and GSM modem. This approach is quite helpful when a woman is unable to use or activate the emergency feature. The SMS alert message includes someone's GPS location and can be sent directly to a chosen group of contacts so they can help her when needed.

This survey's primary focus was on the methods for identifying human body sensors, and it also emphasized the shortcomings of earlier research. In another research, a survey and comparison of earlier studies on the subject of guardian devices for women's safety were offered.[6]. To get notifications, the researcher created a unique guardian device. The gadget is made to function with sensors, and in order to warn a guardian when a woman is in danger, she must press the button. Even while the gadget appears to be a useful tool for prospective victims, there is a flaw in that the victim must activate the device, which leaves the person in danger usually trapped and unable to take certain specified action. A survey of research on new and developing technology for women's safety and protection was provided by reference [7]. The investigators collected information and looked for women's safety gear online, revealing both emerging and newly developed technology. A thorough assessment of the literature on the development of features that are already present in safety devices for women. The classification presented for the analysis, however, emphasizes several sensors and key characteristics of women's safety equipment. On the other hand, the researchers in [9] introduced the Woman Safety System (WSS), which is specifically made to safeguard women and provide alerts in case of danger. The WSS gadget is not worn wherever, any time; it is meant to be a smart jacket. Still, the paradigm this study presents is flexible enough to work with a wide range of devices in any circumstance. In accordance with studies, there are numerous applications and preventative measures for women's safety readily available in the market. AppSoftIndia created an application layout for women's safety. The application's primary characteristics are the user's need to save details.

Included in those details are the recipient's email address, mobile number, user password, and SMS message. The application is then started as a "widget" so that each time the user taps it, it sends out a notification to the receiver. Another crucial component of a mobile number is the application's capacity to record ambient noise for about 45 seconds and then text the receiver with the user's position coordinates. In the same way, the applications [10][11][12] were created specifically with women in consideration.

There is no application that promises complete safety. Every gadget has benefits and drawbacks of its own. It turns out that portable devices are uncommon on the market, as opposed to mobile applications. The results generated ideas for developing a mobile application and a portable gadget by pointing out certain essential components.

"The Safety of Women" The app's developer is AppSoftIndia. One of the primary purposes of the app is to remind the user of certain data. These details include a text message, the recipient's email address and cellphone number, and the user's email address and password. Next, the application loads as a "widget," and when the user presses it, it alerts the receiver. Another noteworthy feature of the software is its capacity to record background noise for approximately 45 seconds and then send a text message to the recipient's phone along with the user's GPS coordinates.

[14]POLICE NEARBY: Big Systems developed this software in 2013. The goal of this law enforcement nearby scanner Android app is to allow the community to get more involved directly from their Android mobile smart phones by connecting residents and students to the most nearby police stations in each city with just one click. Law enforcement agencies at all levels local, state, municipal, or college can enhance constituent services and communication by using the Police Scanner Android App. The Police Nearby app can be downloaded for free without registering. [15]

"ALARM SCREAM" In November 2013, Go Pal AppMaker developed the Android application Scream Alarm. This software allows users to generate a loud enough scream in case their lungs are incapable of producing one during an emergency. The woman's fake scream is a great way to stop potential troublemakers from getting serious. If someone presses or touches the phone, this program does nothing more than make it scream loudly like a lady.[16]

While some of the aforementioned programs are exclusive to Android or Windows, others can be used with iOS, Windows, and Android. The Security Alert app, however, is only designed to function on the Android operating system; nonetheless, it might potentially be extended to support the Windows and iOS operating systems as well. An Open Linux kernel was used in the development of the open-source With the use of a virtual machine, Android is designed to maximize the hardware and memory capabilities of the mobile environment. Android is sufficiently expandable to incorporate new state-

A Comprehensive Women's safety Platform Offering Secure Login, Emergency Panic, News Alerts, Route Navigation with Police Station Proximity, Incident Reporting

of the-art technology as they appear. As a result, the Android platform will never stop evolving as a development group in order to create cutting-edge mobile applications.

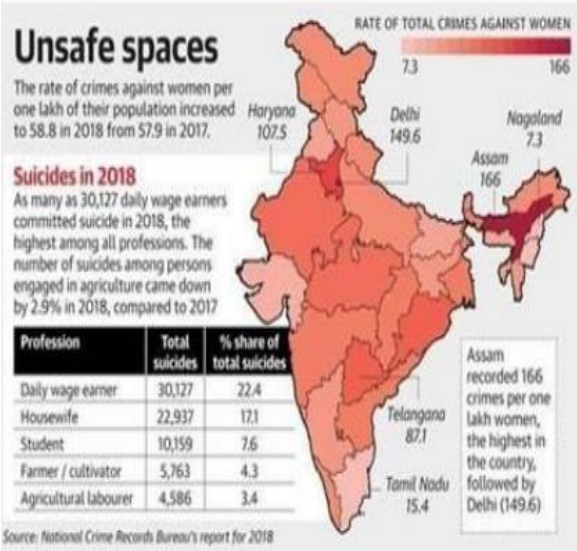


Figure 1. Rate of total crimes against women

### III.SYSTEM ARCHITECTURE

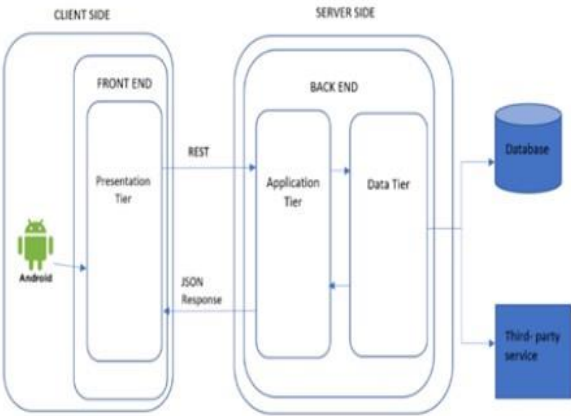


Figure 2. Outlook of Women Safety App

This schematic demonstrates the construction of the suggested framework. The client's phone's Internet, [18] GPS for locating the police, and GSM for data transmission via the messaging system are the three primary components required for this program to function. The user is not required to register in order to make use of the program to ensure that there is [13] no waiting period while using it in an emergency. The user is presented with a range of choices, that they can select from based on the circumstances of the moment.

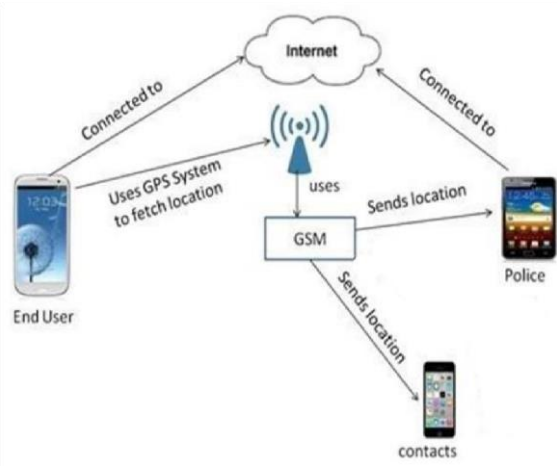


Figure 3. Architecture of Women Safety Application

#### IV.EXISTING SYSTEM

There are many different applications available to protect women in risky situations. The fact that these apps only deliver alert messages to the contact numbers you've saved is a drawback.

The current systems have made it harder for women to escape their challenging circumstances. Although the GPS tracking module in existing programs can also be used to track the whereabouts of women, it lacks precise range measurements. The prior system did not have the capability of sending alert messages to cell phones in the proximity.

Women's safety solutions that have recently been developed come in a variety of forms, including security systems, wearable technology, and smartphone apps. One idea is that when the victim clicks the power button, a notification be sent to police or specific contacts. After a minute The perpetrator's precise position is sent by the technology. therefore offers more convenient position for the individual using it or victim to navigate between certain systems allow a woman who has has received authorization to capture fingerprints using the gadget. Next, it is recommended that the lady regularly scans your thumbprint for per min. In otherwise, the mobile app will text the given address regarding the woman's position. If something serious happens, the woman doesn't have to do anything.[16]

The worldwide wireless telecommunications network (GSM)) modem and a GPS unit are built into this system. Every 30 seconds, it sends brief signals to the server with its GPS coordinates. While 802.11 wireless networks are occasionally available, sending a target's geolocation data over wireless networks works best when the target and the tracker guaranteeing efficient interaction between the entity being monitored and the monitored goal. This format's purpose is to convey important information succinctly, which enhances the entire system's efficacy. One essential component of LBD is location forecasting, which involves analysing real time information about the target's bearing, movement, speed, and current position The system makes a prediction about the target's next position by using this information. The target sends out a brief message to update its location when the difference between its projected and real locations beyond the threshold is exceeded. The tracking procedure is more accurate because to its forecasting components.

One clever component of LBD that adjusts to the monitored entity's shifting dynamics is the dynamic threshold mechanism. This system makes sure that, depending on certain parameters, the trigger for brief message delivery is dynamically changed. When the are both inside Wi-Fi coverage areas. Location tracking is not feasible if Wi-Fi is unavailable to either the tracker or the target. Because SMS is so widely used, it is consequently a more dependable and adaptable alternative. SMS is a user-pay service, though. The amount of SMS transmissions a tracking system must send in order to maintain the accuracy of its location tracking is high. The main disadvantages of the existing System is that the target and tracker must be inside the same Wi-Fi coverage region. Despite being a user-pay service, there are a lot of SMS messages sent. It is not possible to track a target's location when neither the tracker nor the target can connect to WiFi.

#### V.PROPOSED SYSTEM

This technology combines the Global Positioning technology (GPS) with Short Message Service target's motions are within predicted bounds, this adaptation stops pointless message transfers, maximizing resource consumption and overall system efficiency (SMS) using the innovative Location-Based Delivery (LBD) technique. LBD is made to strike the best possible compromise between keeping accurate location tracking within reasonable bounds and reducing the number of short message transfers. Location prediction, an adaptive thresholds process, and a unique brief text format are the main elements of LBD.

The system's unique brief message format is specially designed to meet its requirements, In conclusion, the LBD system stands out because to its incorporation of an adaptive thresholds process, position prediction, and unique short message format. These features enable a more simplified and environmentally friendly method of detecting a location by combining GPS and SMS technology. Advantages of the proposed system are with comparatively fewer messages; it maintains location tracking accuracy sufficiently. The precision of location tracking is maintained by dynamically adjusting the threshold. Quick delivery to clients and finally client satisfaction

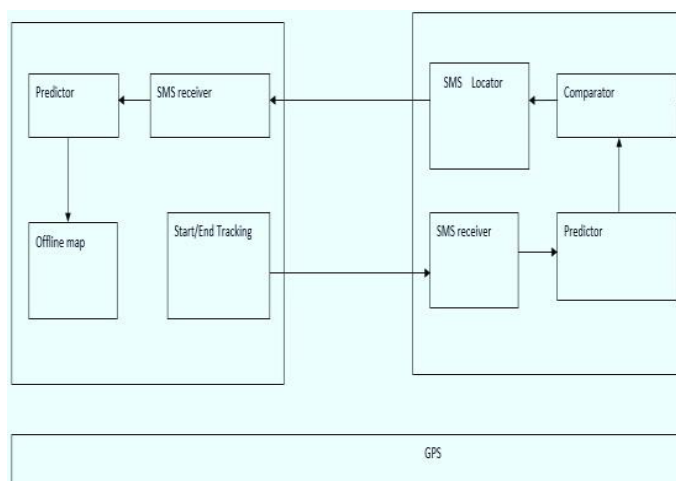


Figure 4. Block diagram of proposed system



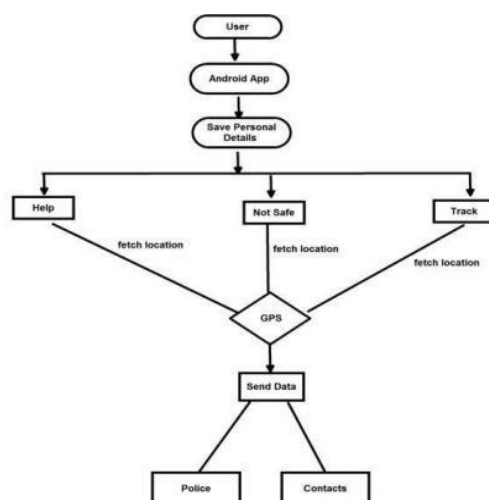


Figure 5. Flowchart of Proposed System

## VI.METHODOLOGY

The various components that make up this endeavour are stated here:

**Verification:** All of the information about the authorized Person is contained in the authentication module. The act of confirming someone's identification by getting privileges and utilizing them to confirm their identity is known as authentication. Authorization the credentials are authentic, starts. The authorizing step constantly follows a verification phase. Absent their logging in & credentials, an individual is unable to check up.

On the occurrence the woman happens to be sole one who has been authenticated.

**B. Add Emergency Contacts:** The individual adds significant contacts in this component. It includes details Include an individual statement: This part receives details from the person using it directly. It contains information on the location. where they are kept.

**C. Include an individual statement:** This part receives details from the person using it directly. It contains information on the location., phone number, email address, and identity. The database contains the Personal Information.

**D. Modify Private Data:** An individual has the capacity to amend or modify their individual data inside this section. Details such as personal details, e-mail address, and telephone number may all be changed. The record set has been revised with the new specific data.

**E. Informational Text Communication:** It is this application's main module. The women's safety element has been introduced to this module. The woman only needs to click on this app if she thinks herself in a precarious circumstance.

With only one click, this software using Geolocation for identifying the location then notifies those specified people using the precise web address in a message for emergencies and the closest police station, directing them to begin the rescue process as soon as feasible. The suggested approach will notify those in close proximity who have this application by sending them an alert message and playing an alarm sound on the guardian smartphone when the user press the button their phone. Additionally, send a message and sound an alert to the police station, hospital, and contact numbers you've saved in the application. which, with the aid of the Global Positioning System, also displays the user's location [17].

The benefit of the suggested method is that it shields the user from physical harm while also assisting law enforcement in identifying and apprehending the offender. When this upgraded system is eventually implemented in India, any lady would be able to walk roadways fearlessly, regardless of strange times, despite worrying concerning them safety. [19]

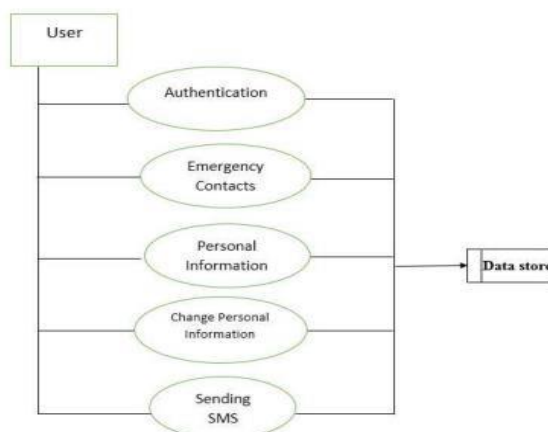


Figure 6. Data Flow Diagram for Women Safety Measures Mobile Application

## VII.IMPLEMENTATION

When an individual is having trouble or needs assistance, this Android application comes in handy. The user notices a HELP button when they first launch this program. We might spare phone contacts with a statement as well. All individual has to do is launch the app, choose the "HELP" option, and ask for assistance if they need it. The message is sent to the contact numbers he has recorded by this program. There are three main actions that may be taken to complete the evaluation, each of which is explained separately. Three main phases make up the evaluation, which outlines the software's entire development. Entering the contact information in the developed application is the first important step. These people might be our friends, family, or the top police officer of the city in which we now reside. Therefore mentioned contact information should be entered when the app is first loaded on the mobile device. Inputting contact information into the application that has been made is the first significant step.

We may have these connections with now-former the town's top policeman, as well as relatives as families. Please provide the above contact information when installing the program on your smartphone for the first time. Only once the device is turned on and linked to the correct mobile network can Every stage's process will conclude (satellite navigation).

The labour involved in consistently sending. The following primary stage consists of sending all associated connections a message with the location Address. Given that duration period for the present situation was a brief period, a short message is sent to the registered contacts following every five minutes period has passed. As a result, the program can follow the person's precise position continually, attaining its essential aim that was proposed system rescuing its individual.

GPS Module: This module is designed to give the user two security-related alternatives, including Not Safe and Track. The purpose of the "Not Safe" button is to shield users from their surroundings if they feel unsafe. The GPS system uses alerts to notify the nearby hospital when the user chooses this option. The individual's position and location are tracked by the location satellites system determine their Right now of residence. It also uses GSM to send a pre-saved emergency message to registered mobile contacts and nearby hospitals. The "Track" button was designed to safeguard users who feel uneasy when using public transportation. She will receive a notice when she selects this option. Both the registered contact numbers and the local police station will receive a message. She might select the Safe option once she arrived safely at her destination.

Locating the location: A satellite navigation system in orbit, the Global Positioning System (GPS) offers position with timing details under conditions, from any location either somewhere close to the planet wherever a minimum of four GPS satellites can be seen without obstruction. Our devices' GPS is always only turned on. The program turns on and instructs using the global positioning system (GPS) follow whereabouts of the individual when phone shakes. Individual location ought to be automatically determined by the GPS. The precise position of the user is derived using the Latitude and Longitude information. The server stores the location that was found. Through GPS, the software may also determine the location of the user's friends and nearby police station

With certain mile limit on their present location, this feature allows the individual to view the closest police station and hospital. Emergency calling systems can be classified into two categories: Automatic and The Individual had turned on automatic dialling. The standard address for which it is sent had been assigned at that point of development. Calls the User Has Authorized: This function allows the person using it to pick the particular kind of hospital. is exclusive to hospitals. When the user selects this option, Google Maps shows the location of the local hospital. [20]

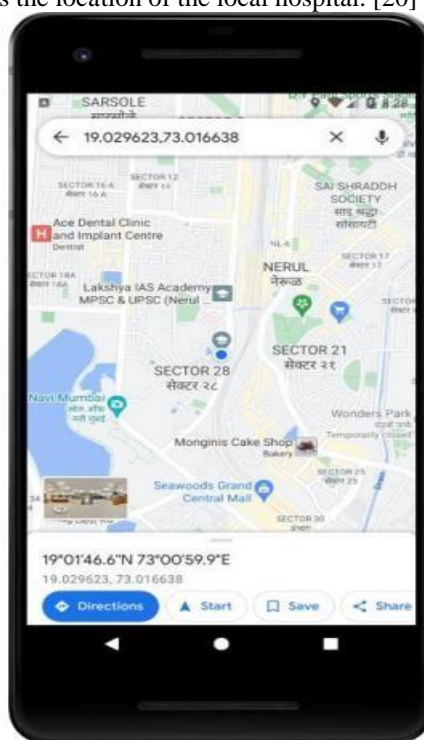


Figure 7. Display displayed following an internet address tap in the notification that the mobile item obtained.

## IX.ANALYSIS

It features like Secure Login provide privacy Protection: Safe login reduces the possibility of unintentional exposure and possible exploitation of sensitive data by guaranteeing that users' private information is protected. User authentication: Securing the platform by ensuring that only authorized users may access its capabilities is made possible by solid authorization procedures.

Encryption standards is to safeguard user credentials and avert possible breaches during the login process, it is imperative that you utilize industry-standard encryption algorithms. User-Friendly Experience: To promote mass adoption, it is essential to strike a balance between security and user ease. Achieving this balance guarantees that customers won't encounter needless obstacles when using the software. Emergency panic is to quick Reaction: In an instance of danger, the crisis fear function is a lifesaver that helps users immediately call for assistance, improving their own safety. Connection with Critical Service:

Integrating into rescue services enables quick reaction times, which may cut down on response times and enhance the quality of results in emergency situations. Taking into account. User Interface Design which will efficacy of the feature depends on having an emergency button that is simple to use and accessible, especially under high stress circumstances. Protection of Fake Alerts Putting in place safeguards against false alarms, such a confirmation step, guarantees the dependability and legitimacy of the critical fear function and Situational Awareness that giving consumers relevant updates improves their knowledge of security-related facts, possible hazards, and preventative measures and finally Empowerment via Information is a consistent updates provide women with the details they need to make educated choices regarding their safety and move more confidently throughout their environment.

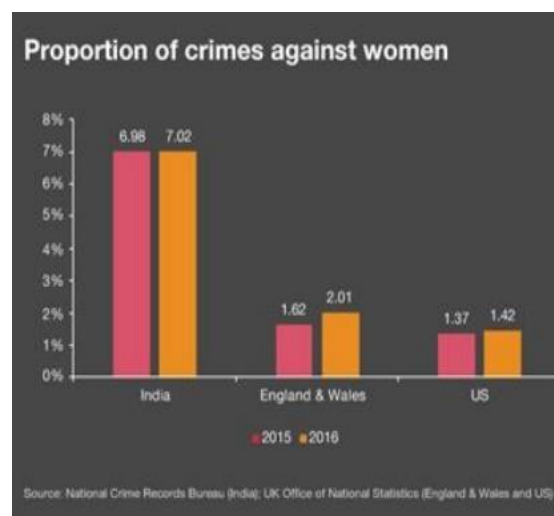


Figure 8. Statistics of international crime records

## X.CONCLUSION

In this study, we suggested creating and deploying an application as a women's safety system. The objectives were effectively met by building a location tracking subsystem, then applicable results was given. The structure shall enlarged accordance to future goals outlined throughout the framework. The use of GPS is additionally addressed in the study. and how latitudes and longitudes can be utilized to track the victim's movements.

Today, the inexorable worldwide urbanization tsunami that is taking place has attracted the attention of academics because it is revealing complex relationships between political economics, social dynamics, safety, and community structures. In the midst of the massive wave of advancement that is changing urban environments, there is a parallel current that is characterized by a growing sense of vulnerability and alienation among social groups that have historically been marginalized because of their age, sexual orientation, gender identity, socioeconomic class, or immigration status. This need for protection is clearly seen in the glaring denial or restricted access to the plethora of options the city offers, which causes a noteworthy negative consequence for these excluded groups' Well-being. As a result, individuals have to deal with a variety of demands while negotiating the complexity of metropolitan surroundings.

Gender is one of the many axes of discrimination and exclusion, and as such, it plays a crucial and important role. As such, its ramifications within the changing urban setting must be thoroughly explored. The way that cities change and adapt makes gender dynamics a crucial component of the complex conversation around urbanization. Different experiences of people with distinct sexual orientations are highlighted, drawing attention to differences in who may access public places, assets, and basic services.

Despite one's own circumstances, the effects are felt in the larger context of disadvantaged groups' everyday lives, highlighting the critical need for a detailed investigation of urban policies and social structures that sustain gender-based disparities. The issues encountered by those with special needs in urban contexts are made even more complicated by the interconnectedness of characteristics including age, sexual orientation, migratory status, and class.

Movement inside the metropolis becomes complicated for these groups because they have to negotiate not just physical barriers but also cultural customs and aspirations.

The urban landscape, which is sometimes praised for offering opportunity, becomes a contentious area where

structural injustices are made glaringly obvious. In order to effectively address these intricacies, policy-making, economic actions, and development plans must adopt a comprehensive and nuanced knowledge.

Essentially, the story of globalization is told like a complicated tapestry that intertwines hopes for advancement with fears of susceptibility and marginalization. It becomes essential for the creation of inclusive policies and efforts to comprehend the complex interactions between political, social, and economic factors. For marginalized populations, especially those coping with the complex issues brought on by prejudice based on gender, this awareness is of special significance. When considering how urban areas will develop in the future, it is critical that we accept our shared duty to create conditions that support equity, fairness, and a feeling of inclusion for all.

Since the women's safety application can exclusively focus on women's safety, girls can benefit much from it. We are able to notify our contacts, the hospital, and by shaking a cell phone at police stations. Additionally, the app's messaging feature notifies those in the vicinity of one another. The application as a whole promotes women's safety

## XI.FUTURE SCOPE

It has room for further development in the future. Every day, computer technology discovers new techniques and advancements in technology. It doesn't seem static; it's dynamic. In a few days, the abilities that are in demand now will become outdated. In order to stay up with technological advancements, the system might be further enhanced. Thus, it remains unresolved. However, with more improvements, it will continue to improve better. It is possible to do augmentations in an efficient way. We can even inform them of these modifications and integrate them with little to no modification. Because of this, The endeavour may continually evolve with novel, innovative functions since it is flexible.

This smartphone application comes in handy in the future in case of any travel-related issues or other situations. With the advancement of technology, the system can be upgraded to accommodate a desired the surroundings. Since object-oriented design is its foundation [18], any additional modifications can be readily upgraded. Emerging technology can enhance security in light of potential safety concerns.

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20. Android App for Women Safety Dr. K Srinivas\*1, Dr. Suwarna Gothane1, C. Saisha Krithika2, Anshika2, T. Susmitha2

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