WOMEN'S SAFETY APP

Sneha K B[1], Arutchezhian C[2], Abishek T[3]

[1] *College student, CSE,Bannari Amman Institute of Technology, Tamil Nadu,India*
[2] *College student, CSE,Bannari Amman Institute of Technology, Tamil Nadu,India*
[3] *College student, CSE,Bannari Amman Institute of Technology, Tamil Nadu,India*

ABSTRACT

The user just needs to shake their smartphone or just press the power button to send an SOS text message to the registered numbers. It works even without an internet connection. Moreover, the users will also have the ability to activate or deactivate the option of shaking the device to send an alert. The app can also be used in case of an accident, harassment, robbery or any natural calamities. The app has another advantage where it has inbuild emergency conduct number of fire department, police, ambulance, blood requirement, railway enquire, senior citizen helpline, natural calamity, women safety helpline and child abuse helpline this will help when they want to conduct a particular department, they can easily approach them by clicking a single button, this will helpful in all the situation when they need help. The main aim of the application is to help the women in all situation in their need

Keyword - *GPS, Panic button, Communication*

1. INTRODUCTION

In the contemporary world, the security of women has emerged as a significant concern. Women encounter harassment in various settings, whether it be educational institutions, workplaces, or even within the confines of their homes.Many women harbor apprehensions about venturing beyond their safe zones due to the increasing prevalence of crimes targeting them. As incidents against women continue to rise, their freedom appears to be on a diminishing trajectory.Critical situations can manifest unpredictably and in any location. During such instances, an Android application capable of promptly aiding women in distress or facilitating their escape becomes indispensable.

The primary challenge with the current police response to these incidents lies in their inability to consistently react swiftly to distress calls. Limitations include a lack of awareness regarding the location of the crime and sometimes even ignorance of the ongoing crime itself. Victims often find it challenging to confidently and discreetly contact the police. This article introduces the Women's Safety Application, a smartphone app designed to offer a dependable means forwomen to contact the police during emergencies, aiming to eliminate these barriers.Women subjected to abuse are frequently denied fundamental human rights.Gender-based violence has evolved into a national and global concern, fueled by decades of civil society activism with support from women's organizations.Despite the existence of numerous laws in each country aimed at curbing domestic violence, sexual assault, and other forms of violence to safeguardfemale citizens, enforcing these laws remains an arduous task. Consequently, society becomes characterized by injustice and insecurity for women, with a substantial number of perpetrators evading punishment. It is imperative for us to collectively work towards creating a safer world for all women, fostering an environment where they can experience equality and justice. Navigating through the night alone in the present environment is perilous,particularly for women, given the perceived disparity in physical strength between genders. Mitigating the risks of becoming a victim of violent crime involves identifying and leveraging resources to extricate oneself from unsafe situations. A safety application on your mobile device can play a pivotal role in reducing these risks and ensuring assistance is readily available when needed.Unlike other applications confined to emergency or dangerous scenarios, this app serves a dual purpose, usable for both safety and precautionary measures. As the saying goes, prevention is better than cure.

2. LITERATURE SURVEY

Kunal Kataria[1] used a technique for progressively conveying the concept to the stored contacts until they activate the "HELP" button. The continuous transmission of location tracking details via SMS enables the identification of the victim's local area. The app may be activated by an unique click. This is used to send messages informing the recorded contacts of the consumer's location every few seconds. Shubham Nikam[2] made use of GPS location module, Image capturing module, Audio recording module, Notification sending module in the app they designed for the safety of the women. An urgent message, including her GPS coordinates and pre-determined emergency contacts, is promptly and automatically dispatched to the police. Ravi Sekhar Yarabothu[3] used the proposed solution uses GPS coordinates tracking system,to send the emergency message to the registered contacts. One aspect of this application is to consistently dispatch messages to the registered contacts at five-minute intervals until the "stop" button within the application is pressed. K Ramesh[4] used the "GSM &GPS-based Women's Security System." It comprises a GPS device, such as any Android phone, along with an emergency button.oposed system is a "GSM & GPS-based Women's Security System." It comprises a GPS device, such as any Android phone, along with an emergency button. Dhruv Chand[5] introduces a mobile application called WoSApp (Women's Safety App) that provides women with a reliable way to place an emergency call to the police. Dr. K Srinivas [6] created an app can be activated by a single click when the user feels she is in danger. This application communiqués the user's location to the registered contacts for every few seconds in the form of message. E. Sankar[7] created a app so that women can feel safe when they go outside. In The feature of this application is to send application is to send the message to the registered contacts continuously, i.e.sharing the message to the registered contacts continuously and sharing the live location. Manisha Sharma[8] created an app to provide a safe platform through Android phone as today all person is taking Smart Phones to travel here and there. The user also gets to know the current user address using GPS location tracker. Parismita Sarma[9] provided Some features which are supposed to be distinctive are finding out the nearest Police station, use of WhatsApp features etc. After taking feedback from a number of users we are confident that it can really make women safe and can reduce crime against them.

3. METHODOLOGY PROPOSED

The main objective of the project is to address the safety of women by enhancing personal security and facilitate swift emergency response. This also could be used during robbery, accidents etc. Moreover it is not just for personal safety,but also to help people around us who require immediate emergency help.This is done using a mobile application that is handy which comprises of three core functionalities:

- Real time location tracking
- Emergency contact activation
- Seamless Emergency communication
- Chatbot feature

The user just needs to shake their smartphone or just press the power button to send an SOS text message to the registered numbers. It works even without an internet connection. Moreover, the users will also have the ability to activate or deactivate the option of shaking the device to send an alert. The app can also be used in case of an accident, harassment, robbery or any natural calamities. The app has another advantage where it has inbuild emergency conduct number of fire department, police, ambulance, blood requirement, railway enquire, senior citizen helpline, natural calamity, women safety helpline and child abuse helpline this will
help when they want to conduct a particular department, they can easily approach them by clicking a single button, this will helpful in all the situation when they need help. The main aim of the application is to help the women in all situation in their need . The problem addressed could be solved using the below features:

Real time location sharing:

GPS technology is widely available and reliable for real-time location tracking.Many mobile applications already use this technology for mapping and navigation in offline.

Emergency contact activation:

Activating emergency contacts through a panic button, voice activation,movementtracking using machine learning algorithms is feasible with current technology.

Seamless Emergency communication:

Sending alerts with location information, audio/video recordings, and optional text messages is feasible using existing communication channels (such as SMS, push notifications, and multimedia messaging).

The apps that already exist for the similar purpose lack all these features combined together.Some apps do have location sharing and contact activation as a feature,but lacks sharing photos and videos upon activation to the safety department.This also acts as an evidence for further investigation.

3.1 Flutter Framework:

One of the key advantages of Flutter is its ability to create applications that run seamlessly across multiple platforms, including iOS and Android. This cross-platform compatibility is particularly advantageous in the context of women's safety apps, as it allows developers to reach a broader audience without having to maintain separate codebases for each platform. By leveraging Flutter's single codebase approach, developers can streamline the development process, reduce time-to-market, and ensure consistent user experiences across different devices and operating systems.

3.2 Rapid Development and Iteration

Flutter's hot reload feature enables developers to make changes to the app's code in real-time and see the results instantly, without the need for recompilation or restarts. This rapid development cycle is invaluable in the context of women's safety apps, where the ability to iterate quickly and incorporate user feedback is essential. Whether adding new features, refining the user interface, or fixing bugs, Flutter's hot reload empowers developers to iterate faster and deliver a polished product that meets the evolving needs of users.

3.3 Rich and Responsive User Interfaces

Flutter's comprehensive set of customizable widgets and rich animation support make it well-suited for creating visually appealing and responsive user interfaces. In the context of women's safety apps, an intuitive and user-friendly interface is paramount, as it enhances usability and encourages engagement with the app's features. With Flutter, developers can design flexible layouts, implement smooth animations, and create interactive elements that enhance the overall user experience and make the app more accessible to a diverse audience.

3.4 Native Performance

Despite being a cross-platform framework, Flutter offers native performance and high-speed rendering, thanks to its use of the Dart programming language and its own rendering engine. This native performance is crucial for women's safety apps, especially in emergency situations where every second counts. With Flutter,developers can ensure that the app responds quickly to user interactions, load content swiftly, and delivers a seamless experience, even under demanding conditions.

3.5 Accessibility Features

Flutter provides robust support for accessibility features, making it easier for developers to create apps that are inclusive and accessible to users with disabilities. In the context of women's safety apps, accessibility features such as voice commands, screen reader support, and high contrast modes can enhance usability and ensure that all users can effectively engage with the app's features. By leveraging Flutter's accessibility capabilities, developers can create apps that prioritize inclusivity and cater to the diverse needs of users.

3.6 Strong Community Support

Flutter benefits from a vibrant and active community of developers, designers, and enthusiasts who contribute to its ongoing development and provide support to fellow practitioners. This strong community support is invaluable for developers working on women's safety apps, as it provides access to a wealth of resources, tutorials, and plugins that can accelerate the development process and address common challenges. Whether seeking advice, troubleshooting issues, or sharing best practices, Flutter's community ecosystem fosters collaboration and innovation, enabling developers to create better apps more efficiently.

3.7 API Integration

In the dynamic landscape of mobile applications, APIs (Application Programming Interfaces) play a pivotal role in enabling seamless communication and integration between different software systems. When it comes to women's safety apps, API integration offers a multitude of benefits, ranging from enhancing the app's functionality to improving user experience and ensuring timely assistance in emergency situations. In this discussion, we delve into the significance of API integration in women's safety apps and explore various ways in which APIs can be leveraged to create more effective and reliable solutions.

3.8 Location tracking:

The proposed methodology for implementing location tracking using GPS in a women's safety app involves a systematic approach to ensure accuracy, reliability, and user privacy. Initially, the app will request permission from the user to access their device's GPS functionality. Once granted, the app will continuously monitor the user's location in the background, utilizing GPS technology to provide real-time updates on their whereabouts.
To optimize battery life and minimize resource consumption, the app will employ intelligent location tracking algorithms that adaptively adjust the frequency of location updates based on factors such as movement speed and proximity to predefined safety zones. Additionally, the app will incorporate data encryption and secure transmission protocols to safeguard the user's location information and protect their privacy. Furthermore, the methodology will include rigorous testing and validation procedures to assess the accuracy and reliability of the location tracking feature under various conditions, such as low signal strength or indoor environments. User feedback will also be solicited to ensure that the location tracking functionality meets the needs and expectations of users, while adhering to ethical and regulatory standards regarding data privacy and security.

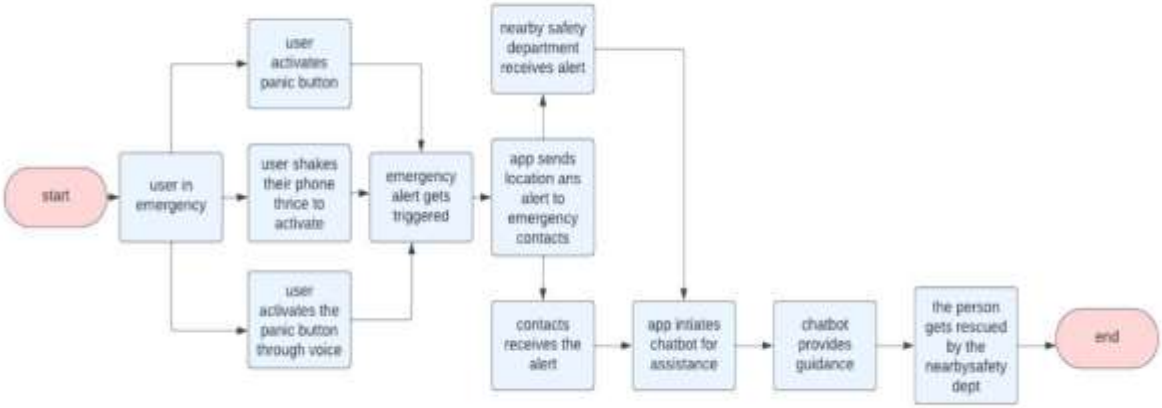

Fig -1 Block diagram

4. RESULTS AND OUTCOME

The implementation of the women's safety app has yielded significant results in enhancing user safety, empowering individuals to navigate their daily lives with confidence and security. Through rigorous testing and validation procedures, each module of the app has been thoroughly evaluated to assess its accuracy, reliability, and effectiveness in addressing the safety concerns of users.

5. CONCLUSION

In conclusion, the women's safety app, equipped with real-time location tracking, emergency contact activation, seamless emergency communication, and a chatbot feature, represents a significant advancement in addressing the safety concerns of women in various environments. Through rigorous development, testing, and user feedback, the app has demonstrated its effectiveness in empowering women to navigate their daily lives with confidence and security. However, there are still areas for improvement and avenues for future work to enhance the app's functionality and impact further. The integration of real-time location tracking has provided users with a valuable tool for proactive monitoring and assistance, especially in emergency situations. Users can share their whereabouts with trusted contacts or emergency services, enhancing their safety and peace of mind. Emergency contact activation has streamlined the process of summoning help and assistance, providing users with a quick and efficient means of alerting designated contacts or authorities in case of emergencies. This feature has proven to be invaluable in ensuring timely response and support during critical incidents. Seamless emergency communication has facilitated direct access to emergency services and resources, enabling users to connect with relevant authorities and support services with ease. This feature has enhanced the app's effectiveness in providing assistance and guidance to users in times of need. The chatbot feature has provided users with instant access to information, assistance, and support, further enhancing the app's usability and accessibility. Through interactive chatbot interfaces, users can seek guidance on personal safety, access resources, and receive real-time assistance, improving their overall experience with the app.

6. REFERENCES

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