"Raksha – Women Safety Application"

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ABSTRACT

Despite considering itself a superpower and an economic center, India is still plagued by the pervasive issue of crimes against women. The use of technology is increasing in our lives rapidly daily. Mobile phones are becoming more popular among everybody and almost every month, the mobile phones are becoming more advanced and much more accessible to the public. But, with the increase in technology, various types of crime have also increased, especially crimes against women. Women security and safety is an issue of growing concern. The problem of crimes against women is a significant issue, and it is imperative for every individual to take action to protect themselves. A survey conducted by the Women and Child Development Department of the Delhi government found that approximately 80% of women in Delhi experience fear concerning their safety. There is an urgent need to understand and solve this problem of women safety so that women can be more confident and don't have to face such traumas. Regarding safety and security,

smartphones can prove to be a powerful tool in the prevention of violence against women. Of all the technologies a smartphone is the most accessible piece of technology and now almost everybody have them too. An app which is available to install in every smartphone can surely be able to make a noticeable decrease in crime rate against women. We aim to develop an Android application named "Raksha" for women who in distress can use our application and alert authorities and their family with location details and messages to prevent any unfortunate incidents.

Keywords: Women Safety, Application, mobile, safety.

I. INTRODUCTION

The term "Violence against women" is a technical term that encompasses acts that are targeted towards women with the purpose of causing them harm. According a survey 53% of Indian working woman doesn't feel safe and secured and are in fear of violence or many worse things. Another statistical data from World Health Organization states 35% women all across the world are facing unethical physical harassment. We are working on an application that we can deploy in large scale, to decrease this rate and bring a difference in society and make woman feel more secured and safe. Every day woman, young girls, mothers and women from all walks of life struggle to be safe and protect themselves from the horrible insensitive men who molest, assault and violate the dignity of women. Women are unable to leave their homes at any time of the day, dress as they desire, or go to work without fear of harassment or assault. These situations not only takes away their sense of freedom but also shatters their confidence and dreams. This is a significant public health problem, as well as a fundamental violation of women's human rights. Women's safety and security is a critical issue, and it is essential for every individual to take action to protect and safeguard them. Keeping in mind the

issues women face related to their safety, we have created an application which can be used in such kind of emergency situations. An application is much more advantageous and in handy than other devices or technology because mobile phones are becoming more advanced and much more accessible to the public. A smartphone is a technology which is carried by almost all women at all times

and thus our application is very easily accessible. The app will ask the user to register themselves when first opened. The app will then request the user to provide mobile numbers and email ids of their parents or family or friends. After the registration stage, the app will directly begin without any login page so that during emergency situations it can give fast access to the user. The app will have a button that when pressed will notify the registered numbers or email ids that the user is in a dangerous situation and that they require help and the police will also be alerted. The application will also have details of emergency numbers like of ambulance, police and fire brigade. All these features aim to prevent crimes on women and to provide help in case they are in a dangerous situation

II. LITERATURE REVIEW

1. Dr. Sridhar Mandapati, et al. focused on the question that whether a woman is safe or not? The mobile application features various options that reveal the current status of a woman, including her location when in danger. It provides features such as phone calls, video forwarding, fake calls, location tracking, first-aid details, and instructions on how to use the application. This application is incredibly useful for women in need of assistance. The I Safety mobile app is a useful tool for women in dangerous situations as it allows them to quickly and easily alert their guardians. By simply touching the app, the

woman can send an alert to her designated contacts that she is in danger.

2. Prof. Sankalp Mehta, et al. shares an app which aims in women safety which will alert the nearby people who having this application by sending alert messages to them and alert sound in the guardian mobile on shaking of victim mobile. The app also sends alert messages and sounds to the contacts saved in the application. Additionally, the mobile application utilizes a GPS tracking system to display the location of the victim. The "Android Application for Women Security System" is an especially helpful application, primarily designed for ensuring the safety of girls. We can send our location to our family members and police stations by shaking mobile. The system also has the capability to send messages to nearby individuals who have downloaded the same application. The system functions to promote the safety of women.

3. Tanusri Dey, et al. shares the details of the application mentioning that there is a Recording Button which will record Video of what's happening at the crime scene. In the absence of an internet connection, the recording will be saved secretly on the user's device for future use. Furthermore, the recording will be sent to the recipient's email address. There Is a De-Stress Button. In the event that the user feels safe, they may press the "De-Stress" button. By doing so, a pre-written message ("I am safe now.") will be automatically sent to the user's emergency contacts. There is a Post/Share Story button. The app offers an additional feature where users can share their experiences and stories on social media platforms, whether they have witnessed a crime or have been a victim themselves. The app also provides a Tips Feed section, which is a distinct and beneficial feature.

4. Dantu Sai, et al. The application is equipped with various unique features, including real-time location tracking and integration with existing systems such as

GPS tracking and SOS. Users are required to register and provide emergency contacts, which can be updated as needed. During travel, the app utilizes dynamic GPS tracking via PubNub's channel to display the user's location on a map. Other users with the same app can monitor each other's location through the dynamic GPS tracking system via the PubNub channel. In case of an emergency, the user can press the SOS button to send an alert message containing the user's name, GPS location, and a help message via SMS. The application also provides access to first-aid information and toll-free helpline phone numbers. All data and information are integrated with Firebase.

5. Bramarambika Thota, et al. This passage describes an Android application called Sauver that is specifically designed to enhance the safety of women with the help of recent advancements in mobile technology. The application has the ability to track the device's location using GPS, which can help law enforcement authorities to quickly rescue someone who is in danger. the anti- social elements. For future development, this application can be integrated with the law enforcement database instead of experimental database used here in the project. Additionally, further upgrades could be implemented for situations when the mobile network is not available for the root device or if the root device is turned off.

6. Abhijeet Singh, et al. shares that even after putting many efforts and using all knowledge, there is not much noticeable decrease in crime rate related to woman and so he developed an application MwithU which aims to overcome all barriers and disadvantages of previous solutions and provide a complete solution with the app. It is a web based technology so the system requirement is very low for the application. You have to login in the app and register your details along with guardian details. While travelling through unsafe areas, keep the app on and if the application detects any abnormal conditions it will send the user a prompt

asking them a security question they have entered in the time of registration, if the user is in some danger and cannot answer it, then after 30 seconds of no response, system will send a message to nearest help center with users exact location and will also inform their guardians via sms. The main advantage of the app is that even if your phone is in your pocket or bag, it will detect any problem by itself and react accordingly.

7. Nishant Bhardwaj, et al. shares that India is still trapped in the clutches of evils like molestations, dowry, and crime against women, worst of all- rape. This paper explains the basic idea of Suraksha which is to flash a warning giving an instant location of the distressed victim to the police so that any crime could be prevented. The device, named as "Suraksha" is a security system specially designed for women in distress. The device is normally locked and to unlock and send distress signal, the user can use three ways- voice, switch and shock. When activated the device will send location to the police and distress message to the registered mobile number through a GSM module. A force sensor, voice recognition software and hardware and GSM modules are used to activate the life saviour device.

8. Elizabeth A. Stanko shares that in recent times women's anxiety about personal safety in public has come to attention by crime prevention authorities as well as the media. The purpose of this paper is to explore the concept of fear of crime, to examine its usefulness for understanding women's concern about personal safety, and to illustrate how crime prevention advice, based upon assumptions about women's excessive fear. The paper states that women take more precautions for safety in their everyday lives than men and are likely to travel less in public or they isolate themselves in private to avoid any kind of danger. After any attacks, efforts are made to make the incident private and women are victim-shamed. The paper ends with the note that the case of fearful women demands that we ask questions about crime and criminality from a real

feminist perspective and solve the problem for once and for all.

9. Navya R Sogi, et al. focus on the present scenario of crimes related to women and share that the streets, public transport and public places in general have become unsafe for women. The paper discusses a security wearable device for women based on Internet of Things. The device is a smart ring (SMARISA) and comprises of Raspberry Pi Zero, Raspberry Pi camera, buzzer and button to activate the services. The main objective of the system is to provide a location and a help message through an app to registered number of contacts and the police, so that unwanted incident can be prevented and to provide evidence for action against the criminals involved. The ring consists of a button that triggers the Raspberry-Pi, which sends the alert message, the current location with a recorded image of the crime and also produces a high frequency alarm to draw the attention of others. The aim of this paper is to develop a device which can protect women in situations where communication via mobile phone is not possible due to any reason.

10. D.G. Monisha, et al. focus on the many crimes against women despite our country becoming so developed in recent years. The proposed product "FEMME" aims to help reduce crimes against women by providing them with a reliable and accessible tool for seeking assistance during emergencies or dangerous situations. By leveraging the capabilities of modern mobile technology, the product offers a comprehensive set of features that can help women feel more secure and empowered. These features include emergency messaging, automated calling, location tracking, and guidance on first-aid measures. However, while the product has the potential to contribute to reducing the incidence of crime against women, it is important to recognize that it is only one piece of the puzzle. Other interventions, such as education, advocacy, and policy change, are also necessary to address the root causes of gender-based violence and to create a safer environment for women.

The device is a security system designed for women to use when they are in any dangerous situation or in distress. . The basic motive is to provide the instant location and a distress message to the cops and the pre-set numbers which are registered in the system. A GSM module is used to the alerts and messages. The system also features a hidden camera detector which works using RF signal interface. The app will also have buttons to record video and audio instantly as to collect evidence of the incident. The main advantage of the system is that it is an all-in-one system and it does not require internet connectivity to work.

11. This is the "Android Application for women security system" this research paper is done by "Kavita Sharma" and "Anand more" they have made an application which is very useful application mainly for girl's safety. The main motive of this application is when the girl feels that we are in emergency situation, for example travelling alone in the Auto/Cab at night time we can use this application. To enable quick and efficient sharing of our location with our family members and relevant authorities, we can implement a feature that allows us to send our location with just one click. This feature would prove to be useful in emergency situations where we need to communicate our location urgently. It can also provide peace of mind to our loved ones as they can track our whereabouts in case of any unforeseen circumstances. However, it is important to ensure that this feature is implemented ethically and with the necessary safeguards to protect the privacy of the user's location data. They have used java for the making of the app and SQL lite for storing of data. This app is quite useful but there are some drawbacks. As they have mentioned in research paper about Gsm not every time in all areas there is full network coverage so due to which the location of the victim could not be located as there would be no sim recognition. Over all the application is good. But they should have provided with some more features in it.

12.This is the research paper of "Android Application for women security system" made by Prof. Sankalp Mehta1, Sachin Janawade 2, Vinayak Kittur3, Suraj Munnole 4, Sandhya Basannavar5 in this research paper they have informed that this is very useful application mainly for girl's safety. We can send our location to our family members and police stations by shaking mobile. the system can also send messages to individuals who have the app installed and are located in close proximity. This feature is designed to enhance the safety of women, as it enables them to quickly notify nearby individuals who may be able to offer assistance in case of danger or emergency situations. However, it is important to ensure that this feature is implemented in a manner that protects the privacy and security of both the sender and the recipient. Appropriate safeguards, such as user consent and encryption, should be put in place to prevent any misuse of the messaging functionality. In this app when she shakes the mobile this system will send message to the all nearby cells which are having that application, plays a sound if the guardian cell in silent mode. The proposed system has a feature that enables users to send an alert message to the nearest police station in case of an emergency or dangerous situation. By leveraging the location tracking capabilities of modern mobile technology, the system can provide the police station with the user's precise location, allowing them to respond quickly and effectively. Additionally, the system can also send a message to the user's designated emergency contacts, providing them with information about the user's location and the nature of the emergency. By combining these features, the system can help provide women with a sense of security and empowerment, as well as facilitate a more rapid response to emergencies. However, it is important to ensure that the system is developed and maintained with appropriate security measures and ethical considerations, to protect the privacy and safety of users .But there are some drawbacks of this application as this says after shaking the device it may alert but it's not that effective because the sensors may not really work sometime if the sensors do not work the application is useless. The application is developed by java sdk which uses sql servers of data base.

13. This research paper named Stay safe app madhe by Indrajeet mane, Jyotsna Babar, snehal Patil, Sarika Pol.The focus of the proposed system is to provide security and safety features to users, including location-based services, SMS messaging, GPS tracking, and a robust system architecture. By leveraging these features, the system can help users quickly and discreetly call for help in emergency situations. The location-based services enable the system to pinpoint the user's location and provide this information to emergency contacts or the nearest police station. The SMS messaging feature allows users to send a message to designated emergency contacts, providing them with information about the emergency and the user's location. The GPS tracking feature enables the system to track the user's movements and provide a more accurate location in case of an emergency. Finally, the system architecture is designed to be robust and reliable, ensuring that users can access the safety features when they need them. However, it is important to develop and maintain the system with appropriate security measures and ethical considerations to protect users' privacy and safety. Throughout the development of the first phase of the project, learned much more new skills ranging from vital experience in working as a team and the new technologies.In today's world, safety and security are essential aspects of any application, especially those that aim to protect vulnerable populations such as women. This application incorporates both safety and security features, including location-based services, messaging, and GPS tracking, to provide users with a reliable way to call for help in emergency situations. However, it is important to ensure that the application is developed in adherence to ethical engineering codes of conduct. This includes implementing appropriate security measures to protect

users' personal information, designing the user interface with clear and concise instructions to avoid confusion, and considering the potential impact of the application on different communities and groups. By incorporating these principles, the application can provide a safe and secure environment for users, promoting their overall well-being and peace of mind. The system here used is java and android studio for making of the application. SQLite has been used to save data and GSM module is been used to track the victim.

14. Dhruv Chand, et al. shows concern for increasing urgency in India and other countries of safety for women. The present paper describes a mobile application, named WoSApp (Women's Safety App), which offers women a secure and dependable means of contacting emergency services such as the police. The application is designed to provide users with a streamlined and intuitive interface that enables them to quickly and easily initiate an emergency call. By incorporating features such as location sharing, emergency messaging, and automated calling, WoSApp aims to provide an effective response to dangerous situations faced by women. It is important to ensure that the application is developed and maintained with appropriate security measures and ethical considerations in mind, to protect the privacy and safety of users. Proper testing and quality assurance should also be conducted to ensure the reliability and functionality of the application. Users can easily and discreetly activate the calling function through various methods, including shaking their phone or interacting with the user interface of the application with a simple press. This feature allows for quick and intuitive access to the application's emergency calling functionality, which can be critical in situations where time is of the essence. It is important to ensure that this feature is designed in a way that is both user-friendly and secure and that it operates reliably under various conditions. Appropriate testing and quality assurance measures should be put in place to ensure that the

application's emergency calling feature is functional and able to provide timely assistance in case of emergencies of a PANIC button on the screen. WoSApp is an attempt to provide women safety by enabling them to place an emergency call to the police in a quick, discreet way. To use the application, there are three main steps involved: firstly, the input of emergency contacts into the application's database; secondly, triggering of the alarm when an emergency situation arises; and thirdly, the transmission of an emergency message and call to the local police. These steps are designed to ensure that the user's emergency contacts are notified of their situation as quickly as possible, while also alerting the local police to the situation. It is crucial to ensure that each step is designed in a way that is both efficient and user-friendly, while also taking into consideration the security and privacy of the user's personal information. Proper testing and quality assurance measures should be put in place to guarantee that the application functions as intended and provides reliable assistance to the user in times of need. The user interface of the application was designed keeping in mind the need for simplicity. The future plans include plan on extending the platform support of WoSApp to iOS, Windows and Blackberry OS (it is currently supported only by Android). The application could also be extended from women and child safety to a generalized emergency SOS broadcast, with support from the police in terms of providing corresponding helplines.

15. Sohini Roy, et al. share that it is high time for the women to give a good retort to the society and raise their voice against the crimes that are taking place regularly. This paper utilizes the ubiquitous nature of pervasive computing to enhance the safety and security of women. By leveraging the constant presence of computing technology in our daily lives, the paper proposes a system that can be easily accessed and utilized by women in times of danger or emergency. This system is designed to provide a comprehensive set of features, including emergency messaging,

location sharing, and calling functionality, which work together to offer an effective response to dangerous situations. The utilization of pervasive computing technologies enables the system to be available and accessible to women at all times, thereby increasing their sense of security and reducing the risk of harm. However, it is essential to ensure that these technologies are used ethically and with the appropriate safeguards in place to protect user privacy and security. The work of this paper aims at designing a pervasive system comprising of a wearable computer that will act as a guardian angel for women in danger. The research states that if a person is afraid, the readings of the sensors will vary from normal readings. This abnormality in the readings detects whether the woman whose contexts are sensed is actually in danger. An alert SMS is also forwarded to the mobile phone at the nearest police station for some immediate action to be taken by them and thus save the woman from the danger. The breath rate sensor [15] is responsible for measuring the respiration rate of the person wearing it.The act of breathing is known to induce changes in various physiological systems, including the cardiovascular, respiratory, and autonomic nervous systems. In the proposed system, the notification module utilizes the Profile table to determine the appropriate messaging option for each type of data. For example, SMS messaging is used for text data, MMS messaging is used for small multimedia data such as photos, and email messaging is used for larger data such as video clips. By selecting the appropriate messaging option for each type of data, the notification module is able to ensure that the user receives the information in the most effective and efficient manner possible. However, it is important to ensure that the selection process is accurate and reliable, and that appropriate measures are taken to protect the security and privacy of the user's data during transmission. The required phone numbers and email ids are obtained from the user.

III. EXISTING SYSTEM APPROACH

There are several mobile applications available that are designed to enhance the safety and security of women in potentially dangerous situations. These applications utilize various features such as location tracking, emergency messaging, and automated calling, to provide women with a reliable means of seeking assistance during an emergency. Many of these applications also allow users to customize and personalize their safety plans, enabling them to tailor the application to their specific needs and circumstances. It is important to ensure that these applications are developed and maintained with appropriate security and ethical considerations, to protect the privacy and safety of users. Additionally, proper testing and quality assurance should be conducted to ensure that the applications are reliable and effective in providing assistance to women in times of need. The disadvantages of using these applications are they only alert the nearby police station, but they do not alert their saved contacts or family. Due to which it was impossible to alert the victim's family at the time of crime. Because of previous systems there is less possibilities of overcoming the dangerous situations of women. Previous applications also have GPS tracking system to track the women location but it doesn't has the proper tracking system. And even it doesn't has long range efficiency. The previous apps were only limited up to the tracking system like in an application "Vanitha". Due to which the police took a bit longer process to handle the crime.

IV. PROPOSED SYSTEM APPROACH

Our proposed application will ask the user to register themselves the first time they open the application. The first time users can register to the app by entering the

basic details of the user like Name, Phone no, Email id, etc. in the Signup Page. Along with their details, the user also has to enter the mobile numbers or email ids of their parents or family or other trusted ones as to when they are in any emergency situation these contact details will also be alerted. This is a feature of our application. The application will have an SOS button and when that button is pressed, the people in the emergency contacts will get a message for example "I am in an emergency; followed by another message, which has the exact or approximate GPS location of the mobile phone. This app also provides details of necessary first-aid measures that should be taken at the time of emergency situations and also provide emergency contact numbers like of the police and of ambulance services.

The features of our application are:

• It will send messages and location details to the saved contact details in the application.

• It will alert the police with message, user details and location details. This will be implemented after the successful accomplishment of Phase-I testing.

• Proposed application also includes a feature that provides users with guidance on the necessary first-aid measures that should be taken in the event of a dangerous situation

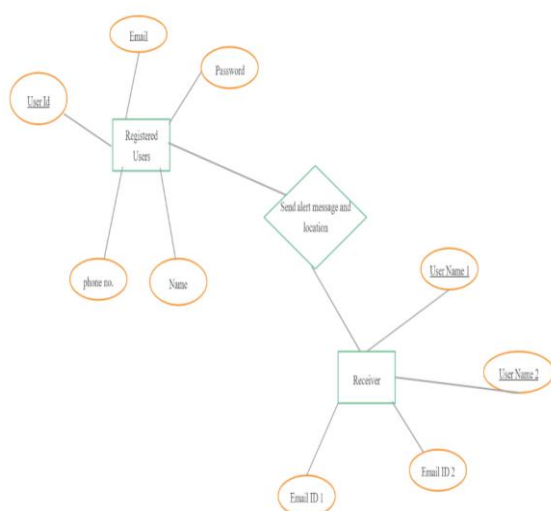• Display a list of contact details of police, firemen and hospitals etc., nearby.

Fig.1- ER Diagram of Proposed System

V. CONCLUSION

This is the "Android Application for women safety" which is a very useful application for women. It can be concluded that our RAKSHA App provides a safe and secure environment to the women in the society, and allows them to work till late nights. The proposed application can act as a deterrent to potential offenders, as it enhances the safety and security of women by providing them with an accessible and reliable tool for seeking assistance during emergencies or dangerous situations. By leveraging the capabilities of modern mobile technology, the application aims to provide users with a comprehensive set of features that can help prevent crime against women. These features include emergency messaging, automated calling, and location tracking, among others. By providing women with a sense of security and empowerment, the application can contribute to reducing the incidence of crime against women. However, it is important to ensure that the application is developed and maintained with appropriate security measures and ethical considerations, to protect the privacy and safety of users. The proposed application is designed to function as a powerful tool for women, offering enhanced safety and security measures that can be accessed from a smartphone with an Android operating system. By leveraging the capabilities of modern mobile technology, the application aims to provide users with a comprehensive set of features that can be used to seek assistance during emergencies or dangerous situations. These features include emergency messaging, automated calling, and location tracking, among others. By utilizing the smartphone's built-in sensors and connectivity options, the application is able to provide users with an effective response to a range of different emergency scenarios. However, it is important to

ensure that the application is developed and maintained with appropriate security measures and ethical considerations, to protect the privacy and safety of users.

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