Women Safety App

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***Abstract*—The security of women is a critical issue faced by society. Crimes against women such as eve teasing, sexual assaults, domestic violence are increasing in number day by day. When it comes to security concerns, a smart phone can be one the easiest way of gaining help. This project strives to create an android app which can help to protect women in any situation she might face in her day-to-day life. We have created a simple Android application which comprises various safety measures which can be used by women with a few clicks on the screen, to get quick and easy access to help or to avoid and escape a harmful situation. It uses GPS location tracking to provide a simple and fast way for the registered contacts to know that the user is in trouble and for them to reach the user easily. It also provides safety features such as a voice recording which can help a woman or the police for identification or situational evidence , a siren to alert the public of any misbehavior, emergency helpline numbers which can be used to directly connect via call to emergency services according to the situation faced by women for their safety.**

Keywords—Women Safety App; Android; GPS; SOS; voice recording; siren.

I. INTRODUCTION

In today's world , women's security has become a major issue. Women face harassment whether they are in educational institutes, at their work or even at home. Many women are afraid of going outside their safezone. As the rate of such crimes against women keeps increasing, the freedom of women is decreasing. Critical situations can arise at anytime, anywhere. At such times , an android application which can help the women in need to get help or escape a situation as easily as possible.

The basic problem with the police handling of these occurrences is that they are not always able to respond swiftly to distress calls. These limitations include not knowing the location of the crime and not knowing the crime is occurring at all: it is difficult for the victim to call the police confidently and quietly. To aid in the removal of these prohibitions. This article presents the Women's Safety Application, a smartphone app that provides a reliable way for women to call the police in an emergency. Women who are victims of abuse are often denied basic human rights.

Gender-based violence has become a national and global issue as a result of decades of civil society activism, assisted by women's organizations.

Despite the fact that each country has an extraordinary number of laws against domestic violence, sexual assault, and other forms of violence to protect its female citizens from such abuse, enforcing these laws is extremely difficult. As a result, society becomes unjust and insecure for women, with the great majority of criminals going unpunished. We should all strive together to make the world a safer place for all women so that they can live in equality and justice. In a sexual act of aggression, the aggressors feel secure in their power. To protect themselves against oppressors, female defense techniques must be modernized by combining current technology and technologies. This device is dedicated to all women who deserve to live in a safe and secure environment. If the necessity arises, an Android application for women's safety can be initiated with a single click. This program recognises the location of a location using GPS and sends a message to the registered contacts with the location URL, to assist the person in a dangerous scenario. The program's unique feature is that it sends a message to the registered contacts every three minutes until the application's "Stop" button is clicked. Continuous location monitoring information through SMS assists in quickly finding the victim's whereabouts so that they may be safely rescued.

It is dangerous to travel alone at night in today's atmosphere, especially for women; it is dangerous to go alone since women are not as powerful as men. Identifying and utilizing resources to get you out of unsafe situations is an effective way to reduce your risks of being a victim of violent crime. A safety app on your phone can help you lower your risk and receive help when you need it. Unlike other applications that can only be used in an emergency or in a dangerous circumstance, this app may be used for safety or precautionary purposes. Prevention, as the adage goes, is preferable than cure.

The purpose of creating this program was to provide a safe environment through smart phones, as most people now carry smartphones with them everywhere they go. A message is immediately sent to the police, containing the user's geographical location as well as the contact details of a pre-selected list of emergency contacts. This page describes the application, its development, and technical implementation.

II. RELATED WORK

A. ABHAYA: AN ANDROID APP FOR THE SAFETY OF WOMEN

This paper presents an Android application "ABHAYA" for women safety to prevent situations like the Abhaya case in Delhi from happening again. This application uses 3G/2G data connection for tracking the location of the person in trouble and sends a message with the URL of their location from the device to registered contacts. This message gets sent every five minutes to the registered contacts until the "stop" button is clicked. After the application runs whenever the woman presses the "start" button, the application makes a call to the first registered contact and send a message containing the location URL of the device to all the registered contacts. As it sends location message every five minutes, continuous location tracking of the woman is possible.[1]

B. S-ZONE:A SYSTEM FOR WOMEN SAFETY & SECURITY SYSTEM

In paper "S-ZONE: A SYSTEM FOR WOMEN SAFETY & SECURITY SYSTEM", the authors states that "the best way to reduce the chances of becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to identify to help you get out of unsafe situations". This paper describes the program, S- site designed for android platform for women's safety with the help of the latest developments in mobile technology. This program helps to track the root device via GPS which will help emergency services to rescue a vulnerable person as quickly as possible from harmful situations.[2]

C. SHIELD: Personal Safety Application

"SHIELD: Application for Personal Security" as the name suggests is an application which shields, protects, saves, guards oneself from danger. It sends an instant message with the device's location to all the registered contacts which helps in live tracking of the location of the woman and provide needed assistance. The main functionality of the system is based on tracking the location. It depends entirely on GPS location tracking and updating on the site in real time. In SHIELD real-time changes in the user area are determined and updated on the website. The update appears on the website within 0.5 seconds depending on the internet connection.[3]

D. Women Safety Android App

In the paper [4] "Women Safety Android App", the authors explain the motto of developing this application is to provide a safe conditions for smartphones as today most people carry smartphones with them wherever they go. It is explained that in the system instead of pressing the SOS on the screen, the victim should press the power button twice to send a notification to the police and to selected contacts even if they do not have internet or GPS connection. and the system will send the continuous location of the victim after one minute i.e provides a better location, if user or victim relocated from one place to another. It is said to be a key feature of the program is to provide a control panel to the police, so that they have a system where the police and deportees can see any such case or not. When victim press power button then victim's location will highlight, so police nearby to the victim can easily reach to protect the victim.

E. Women Safety Mobile App

This paper [5] the authors illustrate the working of GPS based "Women Safety Mobile App". This system starts when the woman authenticated to the device does a fingerprint scan. The woman then needs to constantly scan her finger print every minute, otherwise the system will send the device's location to the registered number via SMS message and simultaneously sounds a buzzer to alert the nearby people to the situation. The woman does not need to do anything incase of a critical situation except to just stop scanning her fingerprint. The device makes use of GPS, GSM modem, microcontroller based circuit to run the system. This system is very useful in situations where the woman may not be able to press or click the emergency feature. The SMS alert message contains her GPS location and can be sent directly to a few of her registered contacts so that they can provide her with help needed.

III. EXIXTING SYSTEM

Recently developed women's safety solutions come in various types such as smartphone apps, security systems and fashionable devices which can be worn everyday.

One of the solutions suggests sending a notification to the police or selected contacts when the victim presses the power button. The system then sends the victim's live location after 1 minute. Hence provides a better location when the user or victim moves from one location to another

Some systems offer a woman authenticated to the device to perform a fingerprint scan. After that, the woman should always scan her fingerprint every minute. Otherwise, the system will send the woman's location to the registered number via SMS. In the event of a serious situation, the woman does not need to do anything other than simply stop scanning her fingerprints.

IV. PROPOSED SYSTEM

This proposed system contains all the specific capabilities inclusive of live location of tracking and combines all of the functions present in the existing system including GPS tracking and other features which can help in case there is no data connection available. The woman can also use any of the features according to her judgment of the situation faced by her.

The purpose of this project is to develop a portable women's safety software tool, which performs the following functions:

1) SOS: SOS sends an alert message to emergency registered contact containing the GPS location of the user every thirty seconds.

2) Siren: A Siren which sounds a loud police siren. This can alert the nearby people of the situation and in some cases may deter the assailant from proceeding with his malicious intentions.

3) Voice Recording: We have also provided a Recording function that records the surrounding sounds which can be used by the victim incase of a police investigation as evidence.

4) Helpline Numbers: The woman can directly call emergency services through the feature Helpline Numbers in the application.

V. DESIGN AND IMPLEMENTATION

This system uses native type of Mobile Application. At the backend MongoDb is used as a database for storage of information. The proposed layout shown in Fig. 1, shows the direct functioning of the android app. The database information such as the user's personal information, registered contacts and helpline numbers. Location links are sent to the registered user contact in the database.

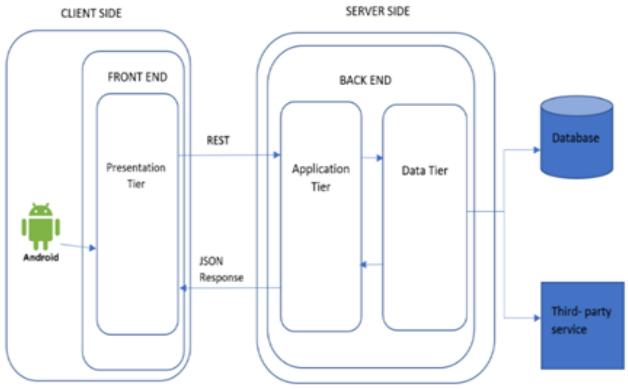

Fig. 1. Architecture of Women Safety App

This android application is useful when the user is in some problem or needs any help. When the user opens this application, can see a registration of user. When user creates the profile then the main activity of application will be visible. There are four modules which we have added in the application for the safety purposes of the user.

Upon installation of the application we can see a shortcut of the application on the device home screen.

Fig. 2. Home Screen of Device

After opening the application the user first needs to create an account by completing the registration process.

Once the registration process is completed we come upon the Home Page . Here the user can see all the features offered by our app and can use them according to the situation requirements.

Fig. 3. Home Page

First feature of the application is SOS. It sends an alert message to emergency contacts containing the GPS location of the user every thirty seconds it sends a predefined message to the pre-registered contact with the URL of their location.

Fig. 4. SOS Alert

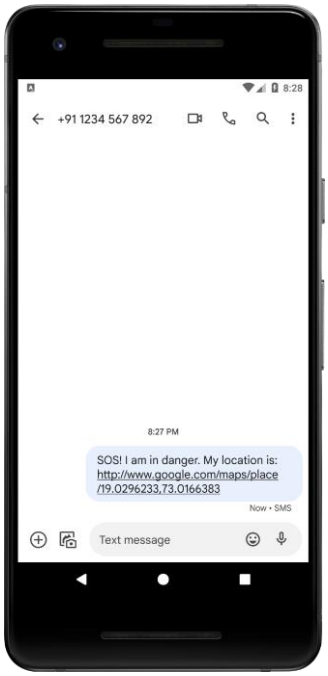

Fig. 5. Message containing URL

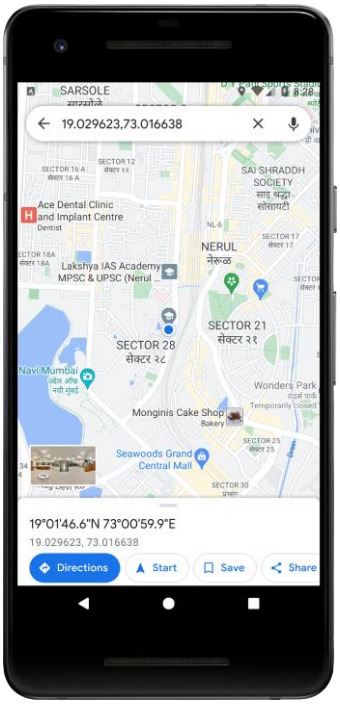

Fig. 6. Google map

Second feature of the application is Siren. In these module there are two buttons i.e. "start" to start the siren and "stop" to stop the siren. When we click on "start" then a siren which sounds like a loud police siren will start . This can alert the nearby people of the situation and in some cases may deter the assailant from proceeding with his malicious intentions.

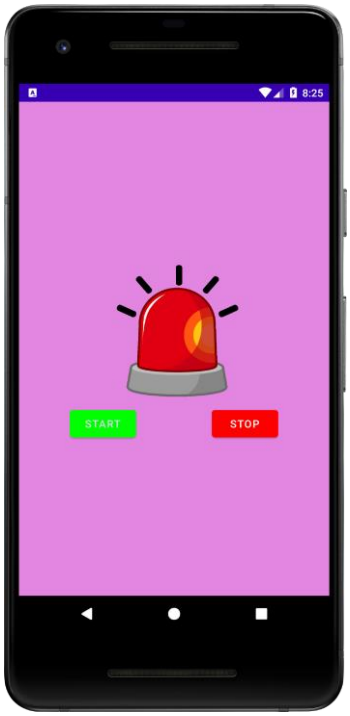

Fig. 7. Siren

Third feature of the application is Voice Recording. In these we have provided the four buttons to start the recording, to stop the recording, after stopping the recording we can play the saved recording and the last one is to stop playing the saved recording. Here, the Recording function will record the surrounding sounds which can be used by the victim incase of a police investigation as evidence.

Fig. 8. Voice Recording

Fourth feature of the application is Helpline Numbers. In these we have provided the helpline numbers of Ambulance, Police, Fire Brigade and Women Safety Department. After single click on any of the helpline numbers which are

provided in these module, the call will be sent and the victim will get the help which is required.

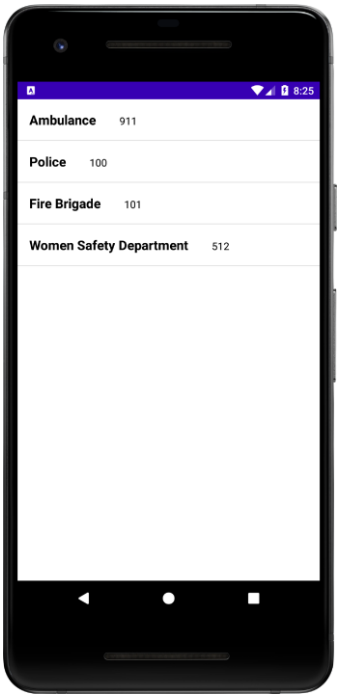

Fig. 9. Helpline Numbers

Fig. 10. Direct dialing of call after a single click on number

VI. Conclusion

In this study, we proposed the design and implementation of a women's safety system in the form of an application. A location tracking subsystem was successfully built in accordance with the objectives, and the necessary findings were reported. The system will be expanded in accordance with the goals outlined in the future scope.

The study also discusses GPS technology, which may be used to monitor the victim's whereabouts using latitudes and longitudes.

To summarize, our software provides a safe and secure environment for women in society, allowing them to work late into the evening. Anyone thinking about committing a crime against a woman will be stopped, and the rate of crime against women will drop. This programme will act as a weapon for women, safeguarding their safety and security, and it will run on any Android smartphone.

With additional research and development, our concept might be implemented on a small wearable device like a watch, necklace, or bracelet that will be made with GPS and GSM modules. When this system is engaged, the GPS module collects GPS data and encodes it into a valid Google maps link, which is subsequently texted to the recruited family and friends.

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