Harassment Monitoring System using Android

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***Abstract*- The aim of this study was to provide women a platform that is capable of providing help to them, when in danger. Today, in national as well as international society there are serious issues related to women safety and harassment. The only ghosting question in women/girls mind is when are they going to move freely on the streets even in the odd hours of the day/night without worrying about their security. Although there are previous methods/ technologies, android based applications such as VithU, Nirbhaya or SOS based mobile technologies. But these methods prove to be ineffective on providing concrete solution rather than only addressing the problem. The proposed application is capable of providing SOS Service to the user by identifying unsafe zones nearby. A women ecosystem is created.**

Keywords- SOS, Unsafe Zones, Google API.

I. INTRODUCTION

In worldwide situation, the prime inquiry in each young lady mind is about her security and the provocation issues. The main idea frequenting each young lady is the point at which they will have the option to move uninhibitedly on the lanes even in odd hours without stressing over their security. This venture recommends another innovation to secure ladies. This venture centres around a security for ladies with the goal that they will never feel vulnerable. In the modern era of Technology, women security is lacking in all corners. It is one of the initiatives take by us to build a security application which is very handy to women in case of emergency. Nowadays, smartphones have become human necessity, taking note of that we have developed Android Application. Current Android Applications failed to provide SOS Service, we tried to implement it by using GPS, SMS, and CALL module. The application notifies the user, when a user enters an unsafe zone, (Safe and Unsafe zones are drawn by using victims provided data) and also with a safety tip on how the incident can be overthrown. The SOS Service will send an alert message to the specified emergency contact numbers along with the current location. The Police is informed using the SOS Service. The application identifies safe and unsafe zones early in the process, so that the user is notified about it and can use the safety procedures. By using the proposed application, we can:

- Help women travel in odd hours without any hassle.
- Create an ecosystem; connect women to each other.
- Provide SOS Service, when required.
- Provide data collected to Policemen.

II. LITERATURE SURVEY

Many paper had this common gap where the call and message cannot be sent because of low connectivity and inability to transmit signals in network-less areas which eventually leaves the user with no option to communicate while in other paper the message is only sent to police, who further decides the action based on the legitimacy of the call. Some application needs to be initiated manually, which may alert the attacker. In some geolocation is used to get the location of the one in need, which one cannot get if they choose not to share with the application. While one had a gap where the message is sent every 5 minutes, unless and until the user presses the stop button.

The applications basically focused about ways to aware women about violence including emergency call and message system in need of help. Few had the feature of sending a message of current location to all the registered contact and a call to the first number. Few system were hardware (chip) which needs to be sticked to the footwear which gets activated on a particular pattern of movement. Many used GPS to get the location. Some worked on data collection and data analysis of the women crime to distinguish between the safe and unsafe locations. Some can be activated by voice command or SOS key or shake action or a button press. One armband hardware where it has a wireless camera for collecting pictures of surrounding by using Augmented Reality. A device project making use of GPS, GSM modules, a shock circuit and camera, that are interfaced with Raspberry Pi board and Arduino.

In all the above papers mainly they developed a system for the safety of women using various software. Some paper had the one common feature of sending SMS to the registered number while some were hardware and software based system. After studying all the standard papers and few blogs we took various idea to develop our android application. Considering the gaps and future direction of the existing system and by adding new features to the existing system to make it better.

III. PROBLEM STATEMENT

At any emergency situation woman get panicked and, in that situation, they may not be able to find help around themselves, and cannot immediately defend the attacker and protect themselves. The proposed system can be useful for women for security purpose. The proposed application is capable of providing SOS Service to the victim. The SOS Service will send an alert message to the specified emergency contact numbers along with the current location. The Police is informed using the SOS Service. The application identifies safe and unsafe zones early in the process, so that the user is notified about it and can use the safety procedures.

Many women still fear to go outside alone due to number of cases of violence against women. Problems may come from any direction such as women walking on the road after the work, going to super market or many other reasons for which they go alone. People at home are not sure of their return safely. In such situations, the proposed application canbe used.

IV. EXISTING SYSTEM

In the existing system the monitoring is done by fixing tags in different location for identifying the exact position. The android terminal is connected to Bluetooth and wireless LAN and it is limited to shorter distance. The communication link to the management server is managed by wireless LAN which is relatively slow when compared to the 3G network. The dynamic pairing of mobile terminal is mandatory. The network is more complex and it is not reliable. The message is transferred through wireless LAN and it is not secure.

V. PROPOSED SYSTEM

The proposed application is developed using Java language and is capable of identifying safe and unsafe zones using Google API. The data is collected by the incidents reported by others; who have faced harassment in that zone. Using this data, we marked out all the unsafe zones on Google API, and the system tracks whenever the user enters an Unsafe Zone.

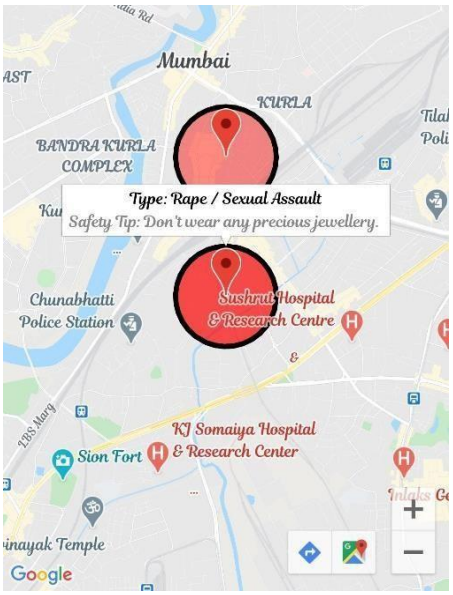

Fig.1 Unsafe Zones

The user is notified when she enters an Unsafe Zones with a safety tip to tackle the upcoming situation.

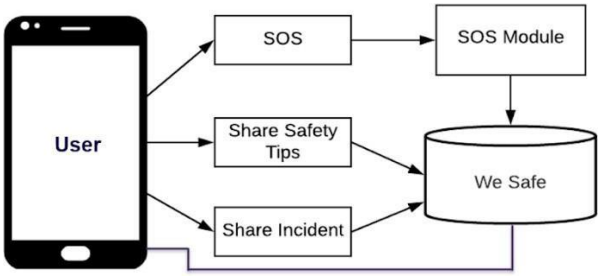

Fig.2 System Architecture Diagram

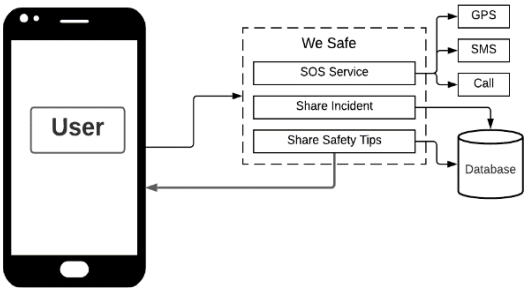

Fig.2 Block Diagram

The System Architecture Diagram identifies various major modules like SOS, Share Incident and Share Safety Tips. Each module can be used by the user whenever required. The SOS module uses the SMS, CALL, and GPS service of the device to run. If the user faces any type of Sexual Harrassment at any location; she can report the incident anonymously on the application by suggesting some safety tips. This data is then used to mark out the location on Google API; hence, creating an ecosystem for Women Safety.

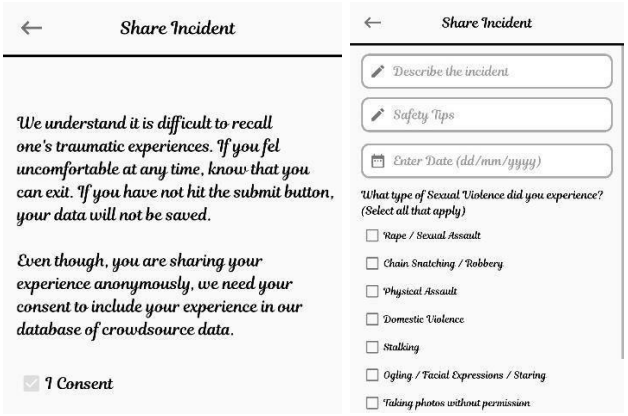

Fig.3 Share Incident Anonymously

Frequency of harassment	Frequency	Percentage
Occasionally	101	42.4%
Seldom	77	32.4%
Frequently	60	25.2%
Total	238	100%
Type of harassment		
Catcalling	53	22.3%
Stalking	46	19.3%
Wolf-whistling	48	20.2%
Winging	14	5.9%
Asking for women's number	67	28.2%

Table.1 Percentage distribution of the respondents that theyencountered by several types of harassment

The victim is made to recall the incident by

Fig.3 SOS Service

VI. LIMITATIONS

The proposed system uses SOS Service which sent SMS to the policemen when the device is shake with a specified intensity. However, if the shake is captured without the user intention then the policemen is notified which results into a bug. The Shake Service is less accurate; future research can be done to achieve accuracy. The application is developed for Android users; hence it can be used on IOS devices. The application can be developed using Flutter, so that it can be used on both the platforms. The application requires internet connection to describing the incident, providing a Safety Tip, Incident Date, Types of Incident, Specifying the Location, etc. The reported incident is stored to Firebase Database. Hence, the complete data collected can be used by Policemen to identify Unsafe zones for women. When the user enters any Unsafe Zone (Safe and Unsafe zones are drawn by using victims provided data); an alert message is sent to him by the application suggesting to use SOS Service whenever required and also with a safety tip on how the incident can be overthrown.

When the user uses the SOS Service it will send an alert message to the specified emergency contact numbers along with the current location that can be used to track the victim. An SOS message is also sent to Police. The application identifies safe and unsafe zones early in the process, so that the user is notified about it and can use the safety procedures The SOS Service is also triggered; when the user shakes the device with the specified intensity. draw unsafe zones from the database.

VII. CONCLUSION AND FUTURE ASPECTS

The application identifies safe and unsafe zones based on victim defined data, which can be less accurate to present. The proposed Application doesn't provide any immediate help to the user, rather act as a way of help. We conclude that by identifying unsafe zones women can be much safer as they can take precautions in that zone provided by others. However, in future the android application can be upgraded by using various other technologies like automatic safe and unsafe zone detection and automatic reaction for the same. Shake Service can be made more accurate. Child Safety Module can be added as a new feature. As Child Abuse is increasing in India, the application be made useful for them in some way as well.

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