

People Safety APP - Belief

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ABSTRACT

“BELIEF” is a smartphone application which can be used to promote personal safety. Such apps receive increased prominence in the media after the 2012 Delhi gang rape case and consequent protests against "brutal rapes, molestation and mistreatment of women". we have to use today's technology in better ways and reduce the crime. Crime against women are increasing day by day and they need to be alert to threat situation or they need to inform their family, friends or colleague if they are with any threat, for that they need to share their information, and we simplify this exchange of information using our application. BELIEF is the security app which comes with feature like Calling and sending the message of Geo location, sending recorded audio and the surrounding pictures in a threat situation to get the help. We are using the in-built GPS technology, which comes in-built nowadays in all of the android phones to fetch the location of the user in terms of latitude and longitude.

Keywords: — Panic button, GPS (Global Positioning System), Hard key trigger, Audio Recording, Tracking System, Take pictures, Registered Contacts.

I. INTRODUCTION

BELIEF is a safety application for android smartphones, which informs the trusted people about the threat and danger if any.

Nowadays the crime increases where people are alone at most probable and the group of attacker attack them with intention of robbery, threatening, kidnapping and other threat. When they are alone they can't get help of anybody, in this kind of scenario the technology will play the major role. What if just after pressing a panic key victim will get the help from their friends and relatives.

Today's Smartphones are as powerful as the super computers in 1990s. In India, many people have the Smartphone. They come with various in build powerful tools like compass, accelerometer gyroscope, fingerprint sensor, barometer, GPS (Global Positioning System) and ability to connect communicate. In old days' people need the bags for keeping up the mentioned device but today's Smartphone is small in size and have the all the ability to do many things. By using these technologies in android Smartphone, we can easily provide some security to people who are alone and needed help.

A. Ease of Use

The key features of our app that makes it different from other apps designed till now are as follows:

1. Initially if you install “BELIEF” for the first time, it shows a tutorial which will guide the user how to use the app

2. Once the user knows how to use the app he/she will redirected to main screen. On main screen, the user can access all the features of the app

3. Initially the user need to enter the contacts which are trusted people. So later on, when user press the Panic button the trusted contacts will receive the message of location as well as recorded voice and captured images which will alert the trusted contacts that there is some kind of threat and user's life is in danger.

Android is the most popular OS in world with market of 80% of worldwide market and growing much faster. The development of application is simpler than any other platform. It is platform independent, lots of tools available, follow the OOP concept. This platform provide independence to their user to use all the great hardware ability completely and get the best result where on other platform it is not possible using hardware without the proprietor is not possible.

B. Existing system

The practiced present existing system is done as paper work in many colleges where the changes to implemented are decided but never coded in the android application or the device which is manufactured. Currently there are hardly up to 30 apps available in the market for your safety. The main problem is that most of these apps are packed with very less features and some of them features don't even work properly.

These apps are as follows:

1. ABHAYAA: It tracks the location of user when user select the option then it performs the activities like send the messages to registered contacts continuously.
2. WOSAPP-- WOMEN SAFETY APP: It sends the message containing location of user as well as emergency

contacts list to police. it can be activated by shaking the phone

3. SURAKSHA-A WOMEN SAFETY APP: Send the message containing location of the user to the police.
4. SCIWARS: Provide basic feature add contact, start the app track location using 2G/3G data connection and send SMS.
5. I SAFE APP: SOS alert from user's phone will use GPS, SMS, GPRS and Facebook account to inform your loved ones.
6. GLYMPSE – SHARE GPS LOCATION: This is the recent application developed on January 28, 2015. This app is very simple, fast and easy to use it shares our location using GPS tracking in real time with friends and family. This app does not need any sign up and do not need any contacts to manage.
7. GUARDLY: This app is developed basically for women safety intention, to put a phone call by your name, instantaneous location, and emergency hit to your selected friends. In this app, you have to give your details in profile sheet e.g. birth date, tallness, weight, eye-colour, blood group, hair-colour, etc. This app is also used in I-Phone, I-Pad, BlackBerry, Windows Phone etc.

II. PROBLEM AND SOLUTION DESCRIPTION

A. Motivation

Every day, women are assaulted, molested and violated on the streets of their own cities. Violence against women happens all over the world, particularly in developing countries. This violence can take many forms: physical, sexual, or psychological. Physical assault on women involves the use of force to injure or endanger them. Forms of sexual assault include rape, human trafficking and forced sexual exploitation, genital mutilation, child marriage and intimate partner violence. Psychological abuse results in psychological trauma, which could manifest as chronic depression, anxiety, or post-traumatic stress disorder. The above all have severe consequences on a woman's physical and mental well-being. A United Nations report in 2014, surveying previous findings, revealed that over 1 in 3 women worldwide have been victims of either physical or sexual assault. 4.5 million people are victims of forced sexual exploitation, of which 98 percent are girls and women. It went on to report that women in cities, primarily in developing countries, are twice as likely to be attacked in any form than men. Even in the European Union, about 50 percent of women have been sexually harassed since the age of 15. In India, a study conducted by the National Crime Records Bureau from the Ministry of Home Affairs of the Indian government showed that over 44500 women and 33500 children were assaulted in 2012.

B. Problem Statement and Choice of Solution

The aim of this project, therefore, is to effectively build a strong platform for woman and child empowerment in our society. We endeavoured to achieve this by creating a mobile application that:

- 1) Has a straightforward user interface for speedy use
- 2) Ensures the alert message is sent to the trusted people
- 3) Allows the user to activate said alert discreetly
- 4) Monitors locations where crises are taking place and reports the same to the trusted people (who in turn notify the user's emergency contacts)
- 5) Record voice and capture images automatically in panic situation and mail these details to trusted people.
- 6) There is not much time for unlocking the smartphone, open the app and then press the panic button so to provide some easy panic trigger techniques.

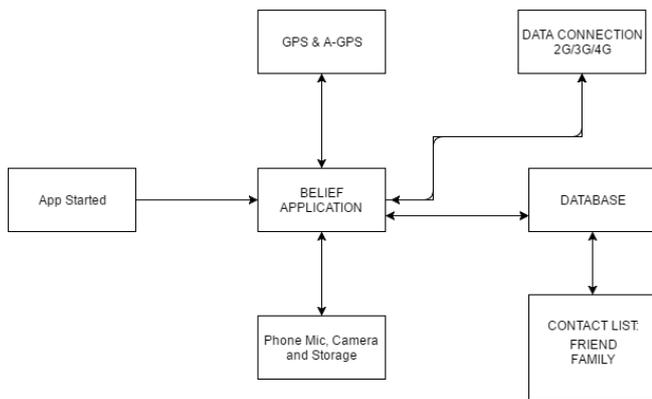
The choice of creating a mobile application to achieve the problem statement was due to the fact that a mobile phone is normally carried on one's person, more so than a separate hardware device that could be misplaced.

III. PROPOSED SYSTEM

To develop a system for android users that will track their location, record audio and take pictures. which will help to identify the last location user was present if he/she was in some sort of danger. This application uses GPS for identifying the location of the person in trouble, camera to take pictures and mic to record audio. The app will also provide hardware based trigger which will help the user in such situation where the user does not have much time to open the app and click on some panic button. The system can be divided into four modules:

1. First module can be to build the app which uses 2G/3G/4G data connection for tracking the location of the victim through GPS and record voice and take pictures with help of mic and camera respectively.
2. Second module is to make database for storing contacts information such as name, mobile number and e-mail address of trusted people.
3. Third module can be the hardware trigger to be implemented on the device which would activate the panic alert in the app
4. Fourth module is to make a simple, easy to interact user interface which would facilitate speedy use of app.

BLOCK DIAGRAM:



IV. APPLICATION DEVELOPMENT

A. Interface Design

The user interface of the application was designed keeping in mind the need for simplicity. The use of the application was intended to be straightforward, as it would be accessed primarily in times of crisis, apart from the initial entering of emergency contacts. The home page of the application has PANIC BUTTON. Action Bar on home screen of app consist of Fake call and Set up contact button and menu button which consist of Help and About us option. On the set-up contacts screen name, phone number, and the email address of their emergency contacts is to be entered. The simple form allows the user to easily enter the required details. In Fake call the victim will receive call from helpline number 100. The bright, clear-cut buttons on the home page, colour coded for emphasis, facilitate speedy use. It is worth noting that in most use cases, the user would not open the application and press the PANIC button on the user interface, but would instead press the power button certain number of times to activate the application on the mobile phone.

B. Technologies used

The development of Belief made use of the technologies below:

- Java, XML and Android Studio Framework for the front-end user interface
- Java for native platform code to enable waiting for the trigger
- SQLite for management of the database
- SQLite for communication between front-end and backend of the application
 - Android SDK to build an application supported by Android.

C. Technical Implementation

The user interface of the app was coded in java/xml and android studio framework. The android services were used for implement the existence of the application as a background service, to enable Power key press detection to send the

emergency message consisting location to the trusted contacts as well as recorded voice and captured images. For the trigger mechanism, native java code was used. The back-end of the application was implemented using SQLite and MySQL for database querying. Fake call was also implemented using java code which makes the fake incoming call when the fake call button is pressed. An open-source model was followed while developing this application, allowing rapid implementation and deployment elsewhere of the platform developed without the need to reinvent the entire system.

V. EVALUATION RESULTS & UNIQUENESS

The complete evaluation can be done in 3 phases. The first major phase is to enter the contact details in the application created. Those contacts can be our relatives, friends and chief cop of the particular city the person we live in in short trusted people. When the application is installed in the smart phone for the first time the above contact details should be provided. The application will save the given information. The second major phase is to send location of the user be in the form of the Co-ordinates or the URL which leads to the location of the person any stock map application in the likes of third party application like Google, Mymaps etc.) as well as recorded voice and captured pictures via mail to the registered contacts at danger times as soon as when the person activates panic alert. This step is followed only when the panic button is pressed in application or power button is pressed certain number of times when the phone locked. The whole process of these phases done only when the device has in-built GPS and a proper mobile network is a must too.

A. Uniqueness

In the existing systems, we have mentioned many Android applications having similar feature to our BELIEF application. In all those applications, victim's location co-ordinates is sent only once to the registered contacts in different forms like SMS, EMAIL, MMS etc. But in practical situations, the victim may not be kept at one place standing, she may be moving around. Currently there are hardly up to 30 apps available in the market for your safety. The main problem is that most of these apps are packed with very less features and these features don't even work properly. All of these apps are totally depended on the panic button which is provided in the application homepage. But in our app, we use PANIC Button feature in form of hard key trigger which means the user has to press power button certain number of times and the application will be activated and do what its intended to do.

VI. CONCLUSION

In this paper, we have described BELIEF, an Android Application for the safety of people. This application not only helps in live tracking of the location of the victim through GPS but also alerts the trusted contacts mentioned in contacts list in the app. The merit of this application is the trigger button which will activate the app once it is pressed specific number of times. As a future scope, this application can be

integrated with the law enforcement database, which includes all the phone numbers of regional cops. Some use cases such as rescuing victim, when the mobile network is not available, after initial alert or switch off condition. Further, it can be developed for IOS and Windows mobile platforms. Thus, this application can not only help women but anyone anywhere in a big way from unsafe conditions.

REFERENCES

- [1] World Health Organization Global and Regional Estimates of Violence against Women.
http://apps/who/int/iris/bitstream/10665/85239/1/9789241564625_eng.pdf
- [2] National Crime Records Bureau (Ministry of Home Affairs), “Crime in India 2012 Statistics,” Government of India Press, June 2013
- [3] Jou-Chih Chang; Pi-Shih Wang; Kang-Hsuan Fan; Shih-Rong Yang; De-Yuan Su; Min-Shiung Lin; Min-Te Sun; Yu-Chee Tseng, “iMace: Protecting Females from Sexual and Violent Offenders in a Community via Smartphones,” Parallel Processing Workshops (ICPPW), 2011 40th International Conference on, vol., no., pp.71,74, 13-16 Sept. 2011 doi: 10.1109/ICPPW.2011.57
- [4] VithU: V Gumrah Initiative on the Google Play Store: <https://play.google.com/store/apps/details?id=com.startv.gumrah>.
- [5] Nirbhaya: Be Fearless: <http://www.nirbhaya.mobi>.
- [6] Android App developed by Canvas M Technologies, 26 June, 2013, “FIGHTBACK”,
<http://www.fightbackmobile.com/welcome>.
- [7] Android App developed by Think MPI Consulting Private Limited, 29 September, 2014, “SECUREMEBETA”
<https://play.google.com/store/apps/details?id=com.thinkmpi.app.secureme&hl=en>.
- [8] ABC Mobile Learning Communication, 23 January, 2014, “VANITHAALERT”,
<https://play.google.com/store/apps/details?id=org.srvan.ntv.save.vanitha&hl=en>.
- [9] Panic Button developed by PanicInitiative, 4 Sept, 2015
<https://github.com/PanicInitiative/PanicButton>