

JANE SAFETY APP

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ABSTRACT:

In today's world, people using smart phones have increased rapidly and hence, a smart phone can be used efficiently for personal security or various other protection purposes. The heinous incident that outraged the entire nation have waken us to go for the safety issues and so a host of new apps have been developed to provide security systems to women via their phones. This paper presents Abhaya, an Android Application for the Safety of Women and this app can be activated this app by a single click, whenever need arises. A single click on this app identifies the location of place through GPS and sends a message comprising this location URL to the registered contacts and also call on the first registered contact to help the one in dangerous situations. The unique feature of this application is to send the message to the registered contacts continuously for every five minutes until the "stop" button in the application is clicked. Continuous location tracking information via SMS helps to find the location of the victim quickly and can be rescued safely.

Keywords – Android; GPS; URL; Registered Contacts

INTRODUCTION

Women are accomplished at mobilizing diverse groups for frequent causes. They often work across racial, sacred, opinionated, and intellectual divides to encourage tranquillity. We are aware of importance of women's security, but we must recognize that they should be well secured. A Woman is not much powerful when compared to men physically, in a crisis situation and needs a helping hand to relieve them. The best way to minimize chances in becoming a victim of violent

crime (robbery, sexual assault, rape, domestic violence) is to identify and call on resources to help you out of unsafe situations. Whether you are in instant trouble or got separated from friends during night and do not know how to get home, having these apps on your phone can diminish your risk and bring assistance when you require it. In the light of recent outrage in Delhi which shook the nation and woke us to the safety issues for our daughters, public are gearing upbeat in different ways to fight back. A swarm of new apps have been developed to provide security systems to women on their phones. Here, we introduce an android app that ensures the safety of women. It reduces the risk and helps us in need by identifying the location of person who is in danger.

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

- 1) Initially, we have to enter the four contact numbers of police, family members and friends in to the application say and click on "save" button.
- 2) While travelling, run the application and whenever need arises, click "start" button.
- 3) As soon as "start" button pressed, it firsts make a call to the first saved registered contact number and also sends the message containing location URL of the victim to all the contact numbers.
- 4) Unique feature of this app is message with location URL is sent continuously to the registered contact numbers for every five minutes until "stop" button is clicked. So, continuous location tracking of victim is possible with this application.

Android is the most widely used mobile OS motorised by Linux kernel. This is the first complimentary platform which is robust and is expected to gain much popularity. It was developed by Google team and allows writing managed code in the Java language. The current system is developed on the basis of android platform. Android utilizes a custom virtual machine that was designed to optimize memory and hardware resources in a smart phone. Android does not differentiate between the phone's core applications and third-party applications. Any application that is built will definitely have equal access to a phone's capabilities providing users with a broad spectrum of applications and services A. Existing Systems As a part of literature survey, we investigated some applications that offer the same or similar services for android and other platforms. [1] The aim is to see how these applications work and to see how they can be improved. Today the cases of atrocities on women are growing. In these types of cases, a smart phone plays an important role for safety of women. Now android is budding on some apps for women security purpose.

These apps are as follows –

1. FIGHTBACK: - This app is developed by Mahindra faction. In earlier days, this app was not complimentary, customer have to compensate for this app. But after Delhi gang rape incident, this app is on hand at no cost. This app sends a message to your friend or contacts that “user is in trouble” through E-mail, SMS and GPRS. This app works on those mobiles that support Android Java Programming. [3]

2. SECUREME BETA: - This app is developed by Think MPI Consulting Private Limited. It helps us to raise alert and we can get help in case of life threatening emergencies. After installing the app, initially we have to give a pin number for security purpose and then after emergency contacts must be registered in the app. By pressing a tap on secure button, it notifies the contacts with location co-ordinates. [4]

3. VANITHA ALERT: - This app is developed by ABC Mobile Learning Communication click on “HELP” button on our mobile's home screen in an emergency situation can deliver a distress text message to the registered mobile number, E-mail id, face book id seeking help and indicating the user's location.[5]

4. RAKSHA – WOMEN SAFETY ALERT: - This app is launched by BJP on May 15, 2014. By clicking on this app, it sends location of the user to the contacts registered and the user can also get the details of the location of the contacts. A distress signal just by pressing a single key sends out a loud buzzer to our near and dear ones. We can add multiple contacts to this app and when there is no data connection, this app alerts the contacts by sending SMS. [6]

5. GLYMPSE – SHARE GPS LOCATION: - This is the recent application developed on January 28, 2015. This app is a fast, free and a simple way to share 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]

6. 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-color, blood group, hair-color, etc. This app is also used in I-Phone, I-Pad, BlackBerry, Windows Phone etc. [8]

7. STREET SAFE: - This application is developed on worldwide Women's day. It will call community to help woman in any situation and has four features for crisis which would be started by just clicking on the button. These features are as – First, it automatically updates on your Face book account with your recent location. Second, SMS will be sent to chosen associates with your locality. Third, an alarm is started with large volume on your mobile. Fourth, call is to be found to your chosen emergency number.

LITERATURE REVIEW

[1] Jijesh J. J, Suraj S, D. R. Bolla, Sridhar N K and Dinesh Prasanna A, "A method for the personal safety in real scenario," 2016 International Conference on Computation System and Information Technology for Sustainable Solutions. (IEEE):

More accidents occur for women, children and elderly people who always feel that they need the support to move around. With the help of advanced technology individuals can make use of a simple gadget which can be used whenever they are in unpredictable

circumstances to establish connectivity between police and family. The device designed is a portable one which can be activated as per the requirement of the individual which will locate the victim using GPS and with the help of GSM emergency messages can be sent to the respective location's as per the design. The gadget provides an alarm system, call for help, and electric shock to get rid of the attacker.

[2] Prof. Basavaraj Chougula, Archana Naik, Monika Monu, Priya Patil and Priyanka Das, "SMART GIRLS SECURITY SYSTEM", (IJAIEEM) 2014 :

This paper suggests a new perspective to use technology to protect women. The system resembles a normal belt which when activated, tracks the location of the victim using GPS (Global Positioning System) and sends emergency messages using GSM (Global System for Mobile communication), to three emergency contacts and the police control room.

[3] Poonam Bhilare, Akshay Mohite, Dhanashri Kamble, Swapnil Makode and Rasika Kahane, "Women Employee Security System using GPS And GSM Based Vehicle Tracking", international journal for research in emerging science and technology, volume-2, issue-1, january-2015

This paper describes a GPS and GSM based vehicle tracking and women employee security system that provides the combination of GPS device and specialized software to track the vehicle's location as well as provide alerts and messages with an emergency button trigger. The information of vehicle position provided by the device can be viewed on Google maps.

Related Research

Nicole Westmarland et al [4] discussed on protecting women's safety? The main purpose of their study is to explore the use of smartphone's in relation to domestic and sexual violence. In report [2] violence against women is a global public health problem, 35% of women worldwide have experienced either physical and/or sexual intimate partner violence or non-partner sexual violence. The report also details the effects of violence on women's reproductive and mental health. In

[5] the authors seek to place questions of surveillance technologies into a theoretical framework that foregrounds the challenges that new surveillance technologies pose to antiviolence movements. Specifically they address the impact of surveillance technologies in the practice of violence and some proposed solutions, and consider the ways that surveillance technologies are used disproportionately in the criminalization of marginalized groups. By placing violence against women at the centre of analysis aim to complicate concerns related to surveillance technologies. In [6] the author discussed that the technology is used in circumstances of intimate terrorism. It will examine how technology is used as a batterer's tool in exerting coercive control over a victim. It will also look at the changes in the laws as the legal system strives to keep pace with the rapid advancement of technology. In particular, the recent use of GPS monitoring of intimate terrorists will be analyzed. This analysis will identify some of the problems associated with the on-going legal changes. However, the same advancements may also allow perpetrators to adapt and/or escalate their offending behaviour [7]. In a US study on domestic violence and information technology, Dimond et al [8] found that users of mobiles and social networks were making trade-offs between potential harm (e.g. continued abuse) and benefit (e.g. support). Worldwide, the sales of new smartphones are forecast to reach 700 million by 2015 [9]. In the UK, 92% of adults personally own or use a mobile phone and 39% use their mobile handset to access the internet [10]. Furthermore, 40% of UK adults own a smartphone, and tablet ownership jumped from 2% to 11% in just 12 months. Based on the advanced mobile and software capabilities, the smartphone has become a ubiquitous everyday communication device, offering access to powerful computational software that is often a multiplatform and sensor rich [11]. In the study [12] provided insight into the opportunities and challenges involved in delivering health related behavioral interventions through smartphone apps. The findings suggested a number of valued features and characteristics that app developers may wish to consider when creating health behavior apps. Findings also highlighted several major challenges that appeared the need to further consideration and research to ensure the development of effective and well-accepted behavior change apps. In report [13] by Vodafone on Connected Women, How mobile can support women's economic

and social empowerment. The use of mobiles improves the women's access to literacy, banking, health, empowerment and business opportunities.

Methods And Materials

There might be a situation in which the person has to travel alone a long distance at an odd hour and perhaps even by public transport and may face some danger. At such a time, a personal safety app might not only be wise to have easy access to, it might also give you a lot of confidence needed. There might be a situation that when women had an accident in the late night and there are no one to help and to take care of them. In such situations the person will not be able to tell the situation that he/she facing. And they do not know the basic first aid details and to know the person where the incident has happened. To escape from the un-wanted meetings we do not know the way to escape from that meeting because we do not know the fake calls working. There are no mobile applications for the person's safety, if the person is in danger the people have to make a call to his friends or relatives and have to be explaining the position and problem and generally we do not know the first aid details. Some drawbacks in the existing system are discussed below:

- The person who is in danger (he/she) can't explain and show his/her position and situation.
- The person doesn't know the first aid details. In proposed system with the push of one button, people can alert selected contacts that the person is in danger and share the location. With this personal safety app, you'll never walk alone!! There might be a situation in which have you to travel alone a long distance at an odd hour and perhaps even by public transport and may face some danger. At such a time, a personal safety app might not only be wise to have easy access to, it might also give you a lot of much needed confidence. The personal safety application requires the name and number of the person who is to be contacted in times of emergency. Users can add multiple people in the emergency contacts list. These are the people who will receive notifications or SMS in case of an emergency. All it requires is the user's action to trigger an SOS button provided and it shoots messages as fast as the device can manage. Once the SOS button is hit, the people in the emergency contacts will get a message like: I am in an emergency; followed by another message, which has the

exact or approximate GPS location of the cell phone. The user can also make audio or video call. This app also provides necessary first-aid measures that should be taken at the time of emergency situations.

Features: • Let the family and friends know that you are in danger and where you are? Declare an emergency whenever you sense a danger, when you can disengage the emergency.

- Provides necessary first-aid measures that should be taken at the time of some dangerous situations.
- Let your family and friends know your path to the destination.
- Creates emergency contacts that will be notified by default of all the actions you make in the application. Also display a list of detail contacts of cops, firemen, hospitals etc., nearby your location.

Methodology

Working:- The motive of this application is to define each major task, estimate time and resources required and provide framework for management review and control. The user has to install this application in her device, register themselves select the contacts to whom she wants to keep as guardians and whenever she feels that she's in danger she has to shake her phone 3-4 times and a message will be sent to her guardians with her live location through GPS. In this way they can take action against the culprit and save the women who is in danger.

Hardware requirements:- It needs a processor of snapdragon, dual core and 512 mb-ram also 50 mb memory space and GPS enabled android phone.

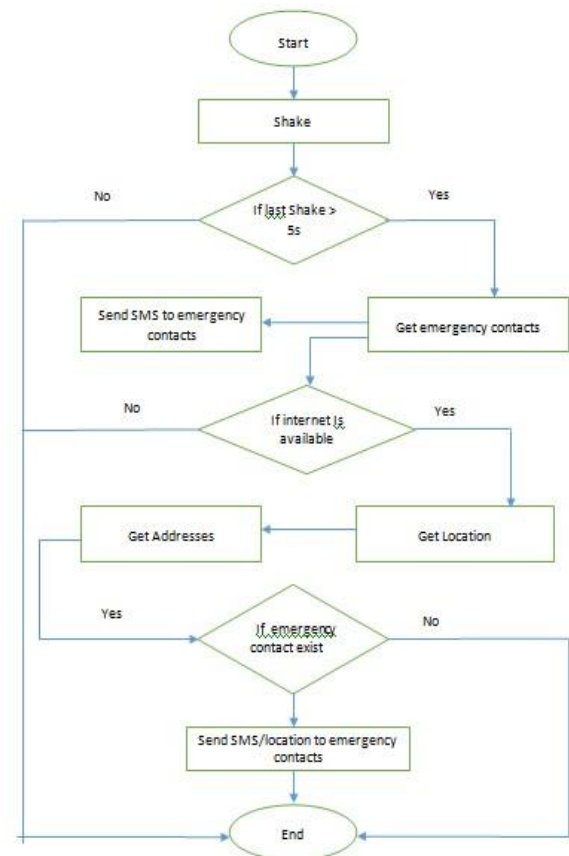
Software Requirements:- Make sure that there is availability of android operating system and api level must be 14 or higher and the disk usage should be 20 to 50 mb. This app will be built using android and java platforms as we java is platform independent.

Use of the app:- This is user friendly application which operates with and without an internet connection once installed in user's device. There is loud alarm option so they can alert the nearby people that something wrong and unusual is happening in the surrounding and the nearby people could also help them. There is also a fake call option so user could cause interrupt in the danger situation and make herself little safe. Also there a fake

police alarm function in the app so in case there is a group of delinquents who are in the intension of harming the user she could just click on the fake police alarm and the people who are trying to trouble the user may afraid and go away. As we know that nowadays women are working in all the sector but they face the security issues sometimes they feel uncomfortable or they feel they are in danger and these situation may occur anytime without informing women's safety application will make assure that the user could get help if they are in danger. First of all the end user have to install this application in their device and then follow the steps to register themselves on the app. After this process the end user must choose the contacts to whom they want select as guardian as an SOS message will be sent forth on their guardians device. Then whenever the user feels that she is unsafe or they may get in trouble then they just have to shake the phone 3-4 times so an emergency SOS message will be sent on guardians device with live location. So the guardians could take quick actions to help the user and remove them from the trouble. As there is global positioning it sends live location of the end user which makes easy for the guardian to identify in which area the user is there currently. This application is 100% compatible on all the android devices.

Need of the app:- Most of the women's stepping outside alone are not feeling safe. Because of financial problems they have to work in night shifts so this application will prove very useful as it will make sure that the women could get help from her guardians. This app provide many features like Scream alarm which will generate fake male cream voice or fake police alarm. Also, there is fake call timer so the end user could get away from undesirable situation by giving the reason that she has to attend the call. The end user could also skip from unwanted events by using this function of app. Nowadays security is main concern so app like this will ensure security and make the user comfort in any situation.

Flow chart of Application:



EVALUATION RESULTS & UNIQUENESS

The total evaluation can be done in three major steps which are described individually. Evaluation describes the whole working of the application in three major steps. The first major step 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. 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 step is to send the GPS information (GPS information can 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, Nokia etc) to the registered contacts at danger times or when the person is needed to be rescued. This step is followed only when the rescue button is pressed in application. The whole process of this step is done only when the

device is connected to the proper mobile network and location service in the device is switched on (GPS).

The third major step comprises of work done in sending the message containing location URL continuously to the registered contacts. Here, we have set the time interval as 5minutes, so for every five minutes of time-lapse, SMS is sent to the registered contacts. Therefore the exact location of the person can be tracked by the application continuously which is the primary aim of the proposed system and the person can be rescued. A. Uniqueness In the existing systems, we have mentioned many Android applications having similar feature to my application. In all those applications, victim's location is sent only once to the registered contacts in different forms like SMS, EMAIL etc. But in practical situations, the victim may not be kept at one place standing, she may be moving around. So, in all those applications, we can know only one location immediately after the start of the application, but practically after sometime she may not be present at that place. The unique feature of my application is location is sent continuously for every five minutes till "STOP" button in the application is pressed. So, even if the woman is made to move around in the city, because of this feature of continuous location tracking, she can be rescued quickly and safely. Also, one of the contacts will be receiving a call, sometimes there may be chance for people not seeing the SMS, but after receiving the call they get alert and can look at the SMS and can identify that their near ones is in danger quickly. B. Results The following figures are the screen shots of Abhaya application initially from the starting of it. r application immediately after opening the Abhaya app on the root device (device on which the application is installed). It contains four contact numbers to be filled of which first phone number receives call and SMS, the other three phone numbers receive only SMS. Also, the layout contains three buttons "Save Config", "Close App" and "Start" buttons. After filling the phone numbers, "Save Config" button must be clicked such that all those contact numbers will be saved in the Abhaya application and these given phone numbers are called Registered Phone numbers.

CONCLUSION

To develop a system for android users for keeping track through several applications. This application uses GPS for identifying the location of the person in trouble and the system can be divided into two modules: 1. First module can be the victim's phone i.e the root device which uses 3G/2G data connection for tracking the location of the victim through GPS. Initially, when we click on the app, it first checks whether the location settings, data connection settings in the application are on or not. Then, it tracks the location of the victim via GPS and sends these location co-ordinates in the form of URL through message to the registered contacts. Here, registered contacts means the contact details that are saved in the Abhaya application during its initialisation. Now, at the received device, by clicking on the URL in the message, it spots the exact location of the victim. Also, as the message containing victim's location is sent for every five minutes from the root device, the victim can be tracked wherever she goes and can be rescued safely and quickly.

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