"DIA(light) it's personal safety application on android platform"

[1]PROF. NILIMA NIKAM, [2]RAJESH TANK, [3]NEELAM DHALE,

[4]SHEETAL SHENDE

[1234]*Yadavrao Tasgaonkar Institute Of Engineering And Technology*

[1234]*Dept. Of Computer Engineering,MAHARASHTRA,INDIA*

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Abstract —*The most critical problems in INDIAN society specially for women is personal security such as Dowry, sexual harassment, Rape, imprisonment, and abuse. Due to the popularity of smartphones which has become a necessary device for our daily life, several mobile applications have been developed to provide a solution for the personal security problem. This idea suits very well for the personal security situation since most people usually carry their mobile devices all the time allowing them immediately use the applications. We propose the DIA application as an alternative solution to mitigate personal security problem. Our application provides a new SOS service that can automatically send an SOS notification to nearby users in addition to the normal SOS service that sends an SOS notification to his/her emergency contacts along with the current location of the user. It also sends emergency messages to WhatsApp contacts through WhatsApp application. And also Facebook message on one click button for emergency we can use it . It also sends message to the nearby users using DIA application.*

Key words- *Mobile Application; Android Platform; Personal Security; SOS **Application;**WhatsApp;Facebook; DIA;*

I.Introduction

In this project we are presenting Personal security application for women in android operating system. It is an SOS application called DIA; that can send a message to the users contact and along with that it can trace the location of user in danger. In addition, WhatsApp service is also used in our application. And also Facebook service is available for emergency contact. The main purpose of DIA application is to help users acquire assistance as fast as possible.

As reported by the National Crime Bureau, In India has been ranked number 30 from 75 countries for the most physical violence and number 38 from 71 countries for the most sexual violence. This report also shows that in 2014 there were thirty thousand rape cases which imply that a woman was raped in every fifteen minutes. Number of top three types of problems has increased 5.9 percent in 2015. This situation clearly shows that the insecurity problem has become worsened over the years. In this paper, we propose the use of technology to help address this problem. There are many applications developed to reduce the harmful situation using smart phone devices enabling them to become a personal safety device. This helps reduce risk and bring assistance and help us to identify the location of one in danger.

Safety of women matters a lot whether at home, outside the home or working place. Last few crimes against women especially rape cases were very dread and fearful. Because of such crimes, women safety in India has become a doubtful topic. According to the statistics of National Crime Records Bureau, highest rate of crime against women was recorded in the Chennai in 2000 (around 4,037 incidences). Chennai is the capital of southern state of Tamil Nadu however has been marked as city with high rate of crimes against women. However, it was seen some decrease in the crime rate against women in the subsequent years (around 838 by 2013). It has been recorded as the largest fall in the crime rate than other cities in India. It was just opposite in the capital of India, Delhi. Crime rate against women in Delhi was 17.6/100,000 females in 2000 (2,122 incidents) and 151.13/100,000 females in 2013 (11,449 incidents) .2 Some of the most common crimes against women are rape, dowry deaths, sexual harassment at home or work place, kidnapping and abduction, cruelty by husband, relatives, assault on a woman, and sex trafficking.

In the last few years, crime against women in Delhi has increased to a great extent. According to the statistics, it is found that every two out of three women have suffered around two to five times sexual harassment in the last year. According to the survey of women, it is found that women are losing their confidence in police. By the survey of Delhi government's Women and Child Development Department, around 80% of the women in national capital have fear regarding their safety. Women are harassed not only in the night or evening but

also in the day time at their home, working places, or other places like street, club, etc.

"In October 2014, WhatsApp crossed 70 million monthly active user in india, which is 10% of its total user base(700MM) . in February WhatsApp crossed 200million monthly active users in india.As of February 2017,WhatsApp

has over 1.2 billion user globally."-By the report from the WhatsApp(Facebook inc.)

"Facebook has 69 million daily active users in india. IANS. Updated:March 3,2016,10:07 AM IST. The platform also boast of having in India 142 million monthly active users(MAU),including 133 million accessing it on mobile."—BY the report from Facebook inc.

This mainly two reason which think that connect with the application,so users can easily touch with friends or relatives

II. EXISTING SYSTEM

There are few domestic SOS applications that are developed. First, "Police I lert U" is the SOS application that sends photo and text as an evidence directly to the police institution. Another application is "AunJai I lert U" which allows users to send alert to rescue units.

SafeZone feature that alerts users when they are in dangerous or risk area is developed in Watch Over Me application. Fake call feature in bSafe application that triggers a fake phone call to users as a stratagem to disentangle from the unsafe situation.Use a Bluetooth device to activate an SOS application allowing users to immediately send emergency notification without unlocking the mobile device is deployed in the Reactmobile application.

 DISADVANTAGE

- There is a lots of application for security purpose , like bSafe , watch over me ,I lert U ,Aunjai I lert U , etc. and this are different application , if install all this application can be take a large space in smartphone. and will be confuse as well , which application give which features.
- It cannot contact with nearby person .
- There is no guardian in application features.
- It is limited to only the selected number of users.
- Facebook messaging and WhatsApp messaging is also free of cost in emergency.

LITERATURE SURVEY

A. Women's Security: The app is developed by AppSoftIndia. The key features of the app are the user has to save some details. These details include: Email address and password of the user, Email address and mobile number of the recipient and a text message. Then, app is loaded as a "widget", so that when the user touches the app, it alerts the recipient. Another key feature of app is that it records the voice of surroundings for about 45 seconds and this recorded voice, text message containing location co-ordinates of the user is sent to the recipient mobile number.

B. BSAFE- PERSONAL SAFETY APP: This app is developed by Bipper Inc. On March 6, 2015. The app's motto is "Never Walk Alone". This app helps the user to create a gang of 'Guardians' and SOS message will be received by them when the user is in trouble. Also another good feature of this app is one of the guardians will also be called. The SOS message also includes location of user via GPS. The user can also enable the GPS tracker and let the friends know location at any time.

C. WATCH OVER ME APP: Watch Over Me™ is the app where you can press your phone button and help will be called instantly. The members of your personal safety network will receive a notification, and they'll be able to track your location on a map. Depending on the situation they can talk to you, or contact the emergency services.

Once activated, the app periodically asks you to confirm that you're safe. In case you don't confirm your safety, the members of your safety network will automatically be alerted. Continuous Safety Monitoring is perfect for walking home, exercising at night, or visiting dangerous parts of town.

D. Police Nearby - The app is developed by Big Systems in 2013.The police nearby scanner android app is built with the aim to connect citizens & students to their nearest police stations city wise at one click and will permit the community to become more involved right from your Android Smart phones. Any local, state, or school, College police department as well as other law enforcement agencies can use Police scanner Android App to provide you with enhanced service and get better communication. Police nearby app is free to download without signup.

E. Amrita Personal Safety System (APSS) -   a new technology to protect women from potential rapists and sexual offenders. APSS is an inconspicuous, wearable and easy to-operate electronic device that will help women in establishing communication with family and police at the first sign of trouble. The device will remain invisible to the criminals and yet can easily be triggered by the user with multiple options, to ensure steady and secure communication.

F. VithU - It is an emergency App that, at the click of the power button of your Smartphone 2 times consecutively begins sending out alert messages every 2 minutes to your contacts that you feed into the app as the designated receivers or guardians.

G. Jivi 2010 - It is a feature of Jivi mobile with a fully dedicated SOS button aimed at women. In case of any emergency or unfortunate times, user needs to long press the SOS button and the phone starts calling 5 pre-stored numbers one after the other. In case any of the numbers is busy or does not take the call, a SMS is sent to the number. After this, the phone automatically dials other numbers on the pre-defined list – thereby ensuring immediate help.

H. **FIGHTBACK**- Fight back ,the women safety application, sends SOS alerts from your phone .Fight back uses GPS,

SMS,location maps, GPRS,email and your Face book account to inform your love done sin case you are in danger.

I. GUARDLY- This application places phone calls to the predefined contacts along with the name , real time location, type of emergencies and enables to identify different locations.

J. ON WATCH - This application is developed especially for college students. It allows the user to easily alert friends and emergency responders and police when needed with the GPS location.

K. FAMILY LOCATOR - This application notifies about the near and dear ones about the trouble. It provides the useful information about the criminals in the neighbourhood, tracking the most visited locations and so on.It also keeps connected with the family members with the support of GPS.It informs others about the exact location through messages , calls, emails with the press of a button.

L. **SENTINEL** - It is a smartphone application used to serve as a virtual security guard for women. The users can press a button once they feel they are being stalked or harassed. It sends out instant alerts to let friends, family or police know about the trouble and save them.

M. STREETSAFE - This application has a feature called "WALK WITH ME" which gets the details of the situation and stays online until they ensure the users gets back home safe. In case the call is cut, the safety advisor connects the user to the local police for further help and guidance. In case of emergency situations, a feature called "SILENT ALARM" enables to get local help from the real time location using the GPS and the physical description of the user.

N. CIRCLE OF 6 - This application intends to add 6 members to your circle which is developed for college students which lets 6 friends know when you are facing a trouble in some situations. With two taps, the app sends one out of three predetermined alert messages to six contacts of your choice including a call for help connecting home that automatically includes the real-time location. The app also consists of pre-programmed hotline numbers and a local number that can be customized for police or 911.

O. b SAFE - The bSafe app works as a guardian that sends an emergency message to the chosen contacts with a push of a single button and its slogan is "Never walk alone". This application offers two levels of safety; a Risk mode with real time GPS which tracks the position and a Timer mode with an automatic alarm activation. It's a user-friendly app which just needs a single tap to inform the chosen contacts.

P. CAB 4 ME - Cab4me, as the name suggests, is a mobile cab finder app that helps get a cab anywhere at anytime. It works based on the location. The phone's GPS shows the location on the map and one can choose the pickup destination or a nearby taxi stand based on the available stand .I find case the database has no cab company for the specific area, a local web search is performed to get a result.

Disadvantage: Only the selected contacts will be notified. Whereas in DIA app , WhatsApp as well as facebook users will also be notified through message.

II. PROPOSED SYSTEM

We introduce an app which ensures the safety of women. This helps to identify and call on resources to help the one out of dangerous situations. These reduce risk and bring assistance.
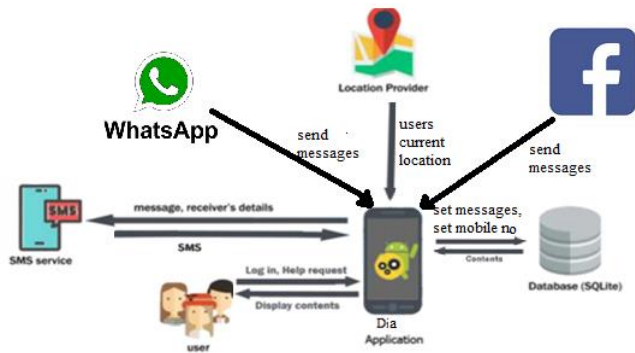
when we need it and help us to identify the location of the one in danger.This app designed to provide security to women main purpose of this app to provide the awareness on the time of critical situation for women.

Generally you can active this service by clicking on ACTIVE SERVICE BUTTON. When you clicking on this button service get activate and know whenever you click on SERVICE BUTTON it open a new window and send SMS to those contact which you saved at the time of registration the SMS contain your message and your current location.This app also provides deactivate service.when we fill secure, this app is mainly required correct information to fill otherwise this app will not work correctly. To develop a system that uses short messaging service to instantly send our location which can be determined using GPS provided in the smartphones.The application can help us to rescue from a hazardous situation by sending location to our friends.Our solutions to this problem definition are use Google maps to trace the location and in one click the location is sent through the SMS.Instead of calling someone and asking for help this is more preferable and can get help in short time.Storing a number and the message with the latitude and longitude of our present location can also be send.

METHODOLOGY

In this project we are presenting Personal security application for women in android operating system. It is an SOS application called "DIA" that can send a message to the user's contact and along with that it can trace the location of user in danger. In addition, WhatsApp service is also used in our application. And also Facebook service is available for emergency contact. The main purpose of DIA application is to help users acquire assistance as fast as possible.

SYSTEM ARCHITECTURE:-

1) Users: There are two types of users that are
- help requesters who use Dia application to ask for assistance and
- notification receivers who receive the help requests from the help requesters either via Dia application or via SMS.

2) Android device: The devices which installed DIA application running on android platform.

3) DIA Application: This part provides several functions of the application. It consists of User Authentication, SMS feature, Adding the contacts, Sharing location, Location tracking.

4) Database: Android application uses SQLITE as a database of the system. The database is used to store bodyguard list.

5) Server: It also uses a server. The server is used to collect all information of users and respond some information back to the users.

6) Location provider: The location provider determines the user's location.

7) SMS service: It is used to send help request messages to the bodyguards who do not use the application and to the bodyguards in case there is no internet connection.

8) WhatsApp service: It is messenger and used for quick messaging services with n number of persons.

9)Facebook : It is social networking site connection with number of person you can connect with it and you can messaging also.

III.   IMPLIMENTATION

SYSTEM REQUIREMENTS:
1. Hardware Requirement:
1.1 Smartphone - running Android operating system version 4.3 or higher.
2. Software Requirement:
2.1 Android studio

2.2 Android SDK
2.3 SQLite

MODULE DESCRIPTION:
1. Starting page of DIA App –
There are mainly two button, one is SEND MESSAGE and another is SHARE WITH WHATSAPP button click to SEND MESSAGE than you have currently not stored your contacts so the messages not sent to anyone, but after set your message and contacts than click to SEND MESSAGE than it will respond and will be sent your messages to your contacts. If you click to SHARE WITH WHATSAPP (require install whatsapp messenger) than it will goes to your personal contacts and mark to number of person for emergency messeges.
Enable/Disable security alert:
You can enable/disable security:
• OFF- Unable to send a message to your configured contacts.
• ON- Sends a message to your configured contacts
Note: Message (SMS) cost will be based on your mobile network.

2. Set Contacts & Message –
You can Set a message and contact numbers :
•Primary mobile Number – Mandatory
•Secondary mobile number – Optional.

3. Use Button to send messages –
One click to send an alert messages.
GPS status:
• GPS is ON – Message will deliver with your current location along with your configured message
• GPS is OFF – Only the configured message will be delivered

4. Receive messages with locations –
In that part opponent or our contacts (which is set for emergency contact) receive the message
" I am in emergency. and I am at http://#### "
After Click that link or brows it, than you know that proper location of that persons , where person is?

5. Click to SHARE WITH WHATSAPP -
On click to SHARE WITH WHATSAPP button for send messages on WhatsApp for numer of person there is no limitation for emergency messages.

6. Click to SHARE WITH FACEBOOK -
On click to SHARE WITH FACEBOOK button for send emergency messages on Facebook for number of person there is no limitation emergency messages.

SOFTWARE DESCRIPTION:

1. Android Studio:

Android Studio is the official integrated development edition (IDE) for Android platform development. Android Studios Instant Run feature pushes code and resource changes to your running app. It intelligently understands the changes and often delivers them without restarting your app or rebuilding your APK, so you can see the effects immediately. The Android Emulator installs and starts your apps faster than a real device and allows you to prototype and test your app on various Android device configurations: phones, tablets, Android Wear, and Android TV devices.

2. Google map API:

Google map APIs for sending the current location using GPS. It is a web mapping service developed by Google. It offers satellite imagery, street maps, 360° panoramic views of streets Street View, real-time traffic conditions Google Traffic, and route planning for traveling by foot, car, bicycle in beta, or public transportation.

3. WhatsApp API:

WhatsApp APIs for sending the emergency messages.

There is no limitation for messages or connect with n number of people through WhatsApp.

4. SQLite:

SQLite is an in-process library that implements a self-contain serverless , zero-configuration transactional SQL database engine. The code for SQLite is in the public domain and is thus free for use for any purpose, commercial or private. SQLite is the most widely deployed database in the world with more applications than we can count, including several high-profile projects. SQlite is a embedded SQL database endine. Unlike most other SQl databases, Sqlite does not have a separate server process. Sqlite reads and writes to ordinary disk files. a complete SQL database with multiple tables,indices,triggers,and views is contained in a single disk file. The database files format is cross-platform.

5. Network provider support:

Network provider has got the important role, by sending the commands through the short message type to the different applications.

6. GPS (Global positioning system):

GPS is a Global positioning system which is used to track the location by receiving the LOC, ENABEL command from the Control and monitoring application. And it stops working by giving command as DISABLE using the network provider support.

7. SMS Manager Module:

Text messaging, or texting, refers to the exchange of written messages between fixed-line phone or mobile phone and fixed or portable devices over a network. SMS Manager contains a powerful rule editor which can be used to automate message processing. This allows deploying common scenarios such as SMS voting polls, but also much more complex schemes.

- React to events like message being received or connection going down.
- Reply to messages.
- Create contacts and add them to distribution lists.

FEATURES:

1) Users have to register by entering their email address, mobile phone number, and identity card number and also have to set a password for authentication.

2)Bodyguard - Users can choose their bodyguard from the mobile phonebook and from the users who installed the DIA application. To successfully ask someone to be a bodyguard, those contacts must accept it by clicking the link contained in an SMS sent after choosing to confirm that they agree and understand the conditions of the DIA.

3) SMS - This process is called when users request help for untoward incidents. It will send a notification that contains user & current location to their bodyguard and nearby users automatically.

4) Getting Location - When the SOS feature is called, the system will retrieve user's current location from the Location Provider and find the bodyguards that are around the user.

5) Sending notification - The system will immediately broadcast notifications when the users request help.

6) I'm here - Users can check their own current location and share it with their selected friends.

7) Guardian - This function allows users to invite other users called guardian to follow their journey. Again, to become a guardian, an acceptance is needed from the selected users. The Guardian function updates the users current locations to their guardians to keep track on the users until they reach the destination safely.

8) WhatsApp messaging - During emergency we can send WhatsApp messages to all the WhatsApp contacts in the phone. Thus, it reduces the risk and more number of people will be informed about user.

9) Facebook chat - During emergency we can send Facebook messages to all the contacts in your accounts. Thus, it reduces the risk and more number of people will be informed about user.

FUTURE SCOPE:

Once developed the application will act like a weapon for women that will ensure the safety and security. This works on the smartphone with the android operating system. The application acts as a rich tool for sending predetermined message to the registered contacts including a call for help that automatically includes an address and exact location, the victim can access the pre-programmed hotline numbers along with the location and contacts of local nearby police station and hospitals. Thus this app will go a long way and reduces the risk of becoming the victim. As the technological changes or new requirement from user to enhance the functionality of product may requires new version to introduce. Although the System is complete and working efficiently, new modules which enhance the system functionality can be added without any major changes to the entire system. By keeping this ability of the product I mind, an incremental process model has been used to design and develop the system.

The future scope of using DIA app is that by using this app security of women can be prevented and the violence against women can also be lowered. We are looking forward to make this application more user friendly. We are working on creating a service through our application which will send message to all contacts in phonebook if no contact is selected in peril conditions. Also we are looking to connect social media like instagram etc.

CONCLUSION

We have developed a DIA application for woman security purpose. DIA is a personal security application packed with significant features for everyday safety and emergency cases. When users confront in an unsafe situation, a fast requesting and helping are important. Thus, we use the security on/off to activate the SMS function. Notifications provided by the SMS function will be also sent to primary and secondary users along with WhatsApp Facebook users and to increase chances of rescuing the sender faster. The motto is to provide help to the user in danger as soon as possible.

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