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SAVEME 360: A Women Safety App

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Abstract: Violence against women is one of the rising concerns in today's world. But with the leap in modern technology, crimes rape and attacks on women can be prevented. This paper present SAVEME360, an android application designed for the safety of women. This app works by making use of GPS. An alert message with the precise location of the user along with images taken from camera of device is sent to all the star-marked contacts as well as to nearest police stations. The app also gets activated automatically on sensing some critical words spoken by the user.
Keywords: Women Safety, Android, GPS, Alert, Star-Contacts.

I. INTRODUCTION

Introduction of our "SAVEME 360" is a security application especially designed for women in distress and emergency. In today's world, women are very adept with the age-of-technology. But, with the rise in cases in crimes against women, there is an urgent need to look about such incidents and to take preventive measures. The best way to minimize chances in becoming a victim of violent crime like theft, rape, robbery or an attack is to identify and call on resources to help you out of unsafe situations. On the wake of Delhi-Gang Rape Case, and ever-increasing number of cases under crimes against women, there is a rise in number of apps regarding women safety. Here, we introduce an android application that would help in ensuring the safety of women and get them the required help in the time of distress.
The key features of this app will include the following:

A. Taking the details of the user and saving the emergency contacts by star-marking them
B. Permitting the app of data usage, SMS, camera, microphone and location access
C. Creation of a widget on the home screen for emergency situations
D. Nearest police stations and details of how safe the present area of user is

II. LITERATURE SURVEY

Safety has always been a big concern so a lot of preexisting work is there which is part of our survey. The aim is to look for the ways of improvement in the current system. Some of the applications are as follows:-

1) *Secureme Beta[1]:* It simply raises an alert to registered contacts and is uses a button for the same.
2) Fight Back [3]: Developed by Mahindra faction, sending emails and messages to the contacts is the work and supported by phones having android java programming support.
3) *Glimpse-Share GPS Location[2]:* As the name suggests, it ends up sending our GPS location with friends and family.
4) Street Safe [4]: It has a mixed support of Facebook access, alarm, emergency call and message alert to our friends.

The whole study shows that there are a variety of applications and services with mixed supports and functions . The aim is to get something that does all the goods and provides a stronger security and touches all the aspects like GPS, Messages, call alerts, image sharing on internet availability and voice detection too.

III. PROPOSED SYSTEM AND UNIQUENESS

The current security systems are way to capable but the motive is to develop a security system that gives our family an overall protection in every respect. The targeted app is a total combination of all the voice controlled apps, GPS security, messaging and calling systems. The main idea is to ensure the security of women and children. The app will be friendly with all the android platforms and very easy to handle with a descent GUI to give the users a nice experience. The system can be said to have multiple nodes, the nodes may include all the contacts that the victim has on the contact list and as well the victim. The contacts are the passive nodes as they will be reached only when needed by the active node that is the victim.
The victim can trigger the whole process when needed. The aim is to give a smooth experience to the user and proper information to our contacts. The structure is as follows.

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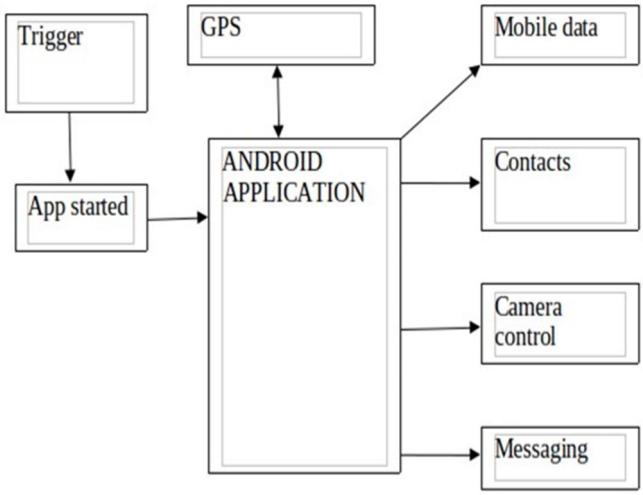

Fig. 1. Block diagram of the system

Many of the existing systems have the messaging facility or the GPS or the instant messaging service or may have discrete functions , but there is a chance that the contacts that are getting the messages don't see or miss the message or the alerts are missed, if this happens than there will be no use of the whole process and our victim will get no help.

The basic functions that it supports are:

1) Messaging
2) Calling
3) Snap Capturing
4) GPS location
5) App gets activated by the special words sensed.

If these special words like "help", "save me", "danger" are detected by the application twice or more than that in a short period of time, then the application will perform it's task. Keepingg together, all these can give an instant alert and suddenly grab attention of the person and the motive will be fulfilled. Also they may get some important hint of the current situation of the victim if the called person picks up the call and records the same or get an idea of what the matter actually is. The reason of getting the snapshots is that the person the on otherside of the phone will get to know the criticality of the scene. it's very crucial as there may be some mistake by the person holding the phone, so any misunderstandings will be avoided by this initiative.

IV. TECHNOLOGIES

A. Android[5]

An operating system that comprises of modified linux kernel which Is mostly used in touch screen phones. It was developed initially by android inc. But later on bought by google. Basically android app is coded in java or kotlin and rest features are supported with different technologies like as for database sql is used , for interface javascriptetc[5].

B. JAVA

Java is a general purpose object oriented language. Its open source and works on different platforms. The framework and classes makes it to use for android development.

C. MySQL

For storing,retrieving and manipulation of data in a database we require a software which can perform them all. MySQL comes in two editions they are :

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Some features of mysql are:

1) Their Cross platform support.

2) MySQL uses standard SQL.

3) It can be compiled multiple platforms 4) MySQL is free and easy to download and use.

These are the main technologies that are going to be implemented in the application and some of more may be later on depending upon the requirements for the betterment of it.

V. WORKING MODEL

To understand the basic functions and the flow, here is a flow chart apart from the automatic activation on speech recognition:-

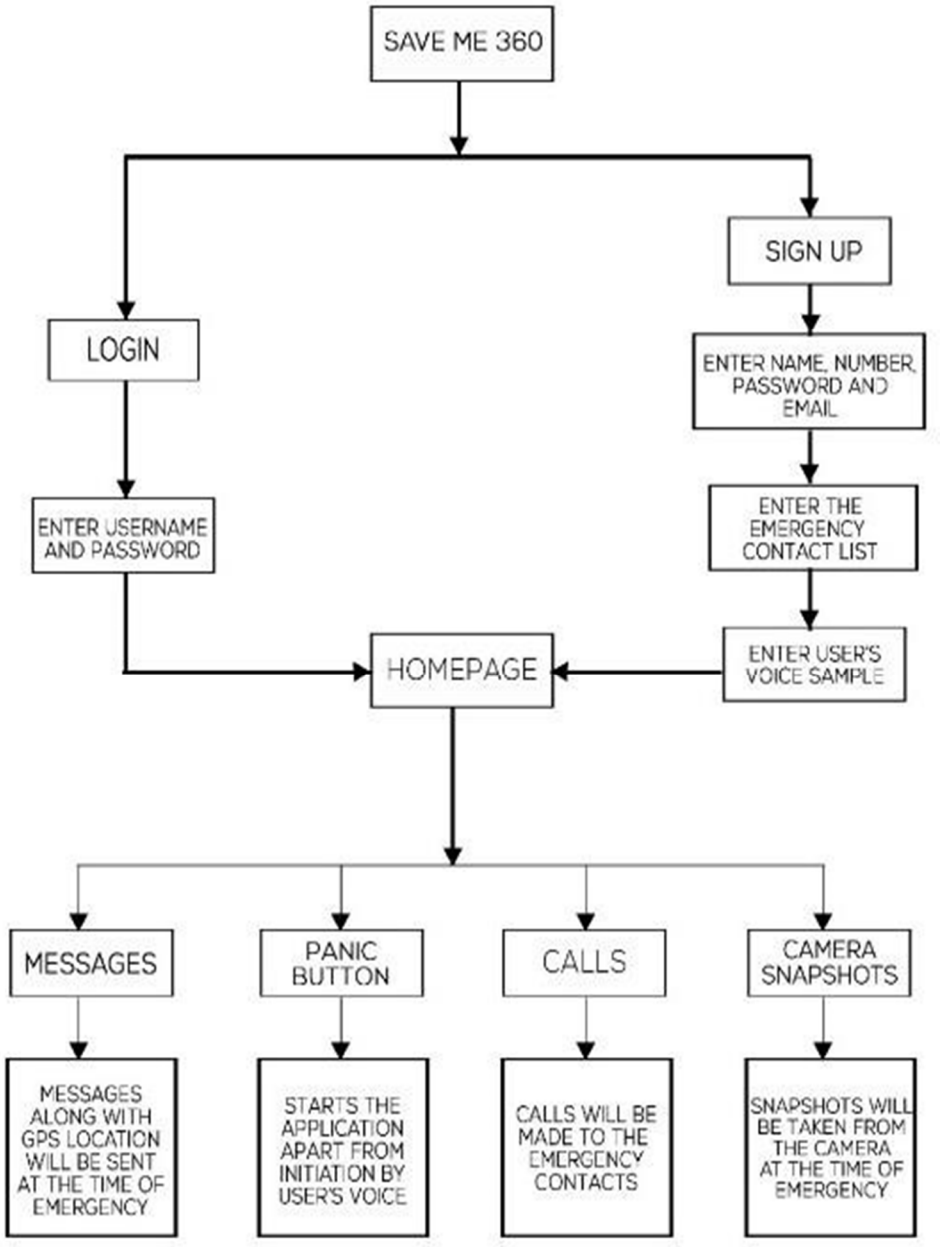

Fig.2. Flow chart of the system

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Thee app will be controlled by different modules of code which are:-

A. .Sign-Up/Login

The sign-up/login module will be controlling the user sign up where the user's voice and other necessary details such as given below will be recorded in database.

1) Username
2) Password
3) Phone Number
4) Email Id

Fig.3.Signup/login page

In this module, the user will also have to enter five contacts from their contact list. These five contacts will receive the alert message and call at the emergency.

Fig.4.Contacts selection

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B. Voice and Sound Identification

When in danger or critical situation, there is a human tendency that the person speaks some words that are asking for help. The application will simply identify those words and make the work simpler. The basic idea behind this is the voice-to-text or speech recognition in android. In cases when the user is unable to open the application and ask for help, this will help automating the things and get help as soon as possible.

C. Messaging

The first and foremost work that will be performed by the app at the time of emergency will be sending of the alert messages to all the five contacts which the user had chosen at t he time of sign up. This message will be consisting of a common message such as "HELP ME!! I AM IN DANGER" along with the GPS location of the user at that particular time. This message shall alert the person and they may take the necessary actions. The class Sms Manager has the responsibility to manage SMS operations, such as sending text. To get this object, get Default () method is called. Instance of Sms Manager is created by calling get Sms Manager For Subscription Id(int). This instance is associated with a specific subscription Id.

D. Voice Calls

Voice calls along with alert messages will be sent to the selected contacts at the time of emergency.

E. GPS

The latest model smart phones have the GPS chipset built into their motherboards which when combines with the source of maps provides the capability of GPS features. There are many sources of maps such as Google (Most Accurate), NavTeq or TeleAtlas.
To use the location services, the app must request location permissions <manifest ... > <uses-permission
android:name="android.permission.ACCESS_COARS E_LOCATION" />
</manifest>

F. Panic Button

The app will also be consisting of a panic button. Apart from the initiation of app by voice of victim, if the panic button is pressed the app will start. If the panic button is not pressed, then the app will work on its own by taking voice inputs

G. Camera Snapshot

1) Capturing of images through the android framework is supported by the following API's

a) Android.hardware.camera2:- This API is the primary package for controlling device cameras. ii. Camera: This package is the older disapproved API for controlling device cameras which were used in earlier android versions. iii. Intent: MediaStore.ACTION_IMAGE_CAPTURE. An intent action of these API's can be used to capture images or videos without directly using the camera object.

2) *Manifest Declarations[5]:* The demonstration is given appropriate declarations for allowance of the use of camera hardware and other features.

a) *Camera Permission*: The application must request permission to use a device camera
<uses-permission android:name="android.permission.CAMERA"/>

b) *Camera Features:* The application must declare use of camera features <uses-feature android:name="android .hardware.camera"/>

c) *Sorage Permission:* If the application generates images and saves them to device's external storage (SD Card), then it must be specified in the manifest
<uses-permission
android:name="android.permission.WRITE_EXTERNAL
_STORAGE"/>

d) *Location Permission:* If the application tags the images generated with GPS location information, it must request the ACCESS_FINE_LOCATION permission.
<uses-feature android:name="android .hardware.location.gps"/>

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VI. CONCLUSION

Here with this applications, the intension is to give an overall solution to the society for the security of women. The technologies used are in demand and this makes it easily accessible. Another merit can be image capturing capacity of the application that can helps to analyze the current situation of the victim .The performance of this application can be judged by the fact that it supports multiple functions to ensure 360° security.

As a future scope, Google Maps can be integrated in the application making it more precise and widening the involvement of other features and involving the application in the databases of police departments so as to keep the record of the vulnerability of those particular areas, also what could be done as an improvement is adding language options but that is a part of research first of all but can increase the level of performance.

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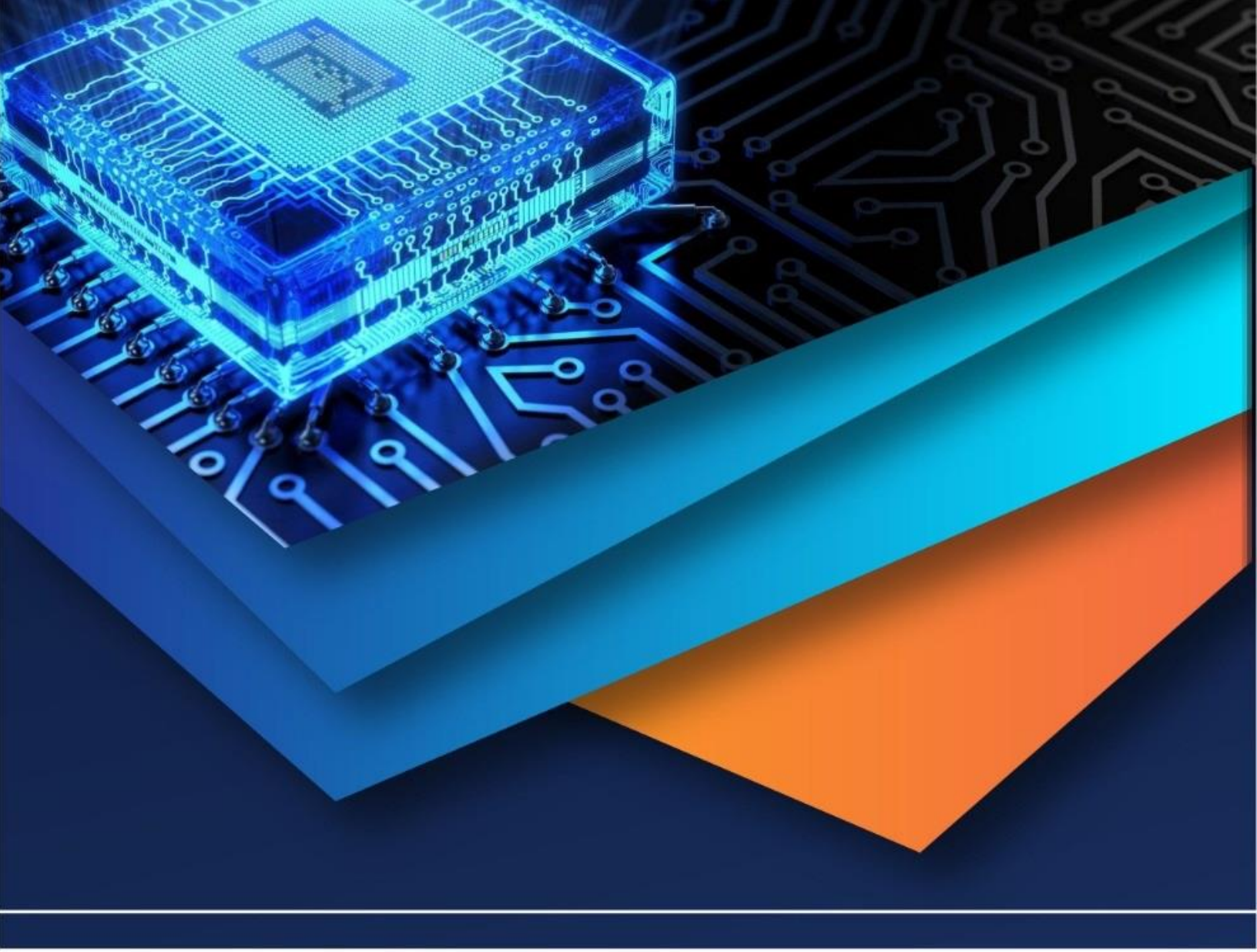

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