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Women Safety Android Application

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Abstract: ***Atrocities against women are becoming more common today. In these sorts of situations, a smart phone application can be quite helpful in ensuring women's protection. These applications are known as SOS applications which can built using the Android Studio which is an Integrated Development Environment (IDE) specifically designed for Android Application Development. Global Positioning System(GPS) is used to determine the victim's location. These SOS applications plays a crucial role in conveying the emergency situation of the victim to the person whose contact information is already saved in the application by the user.***
Keywords: Android, Android Studio, Integrated Development Environment, SOS application.

I. INTRODUCTION

The security of women at night and even at day times when travelling alone is a concern. In many cases, it has been observed that the lack of instant communication about the emergency situation of the victim is the problem. To help enhance the communication instantly android applications are becoming prevalently important. Android is a mobile operating system for smartphones and tablets based on Linux kernel.

This application aids the individual in escaping harmful circumstances. This will lessen risk, provide support when we need it, and help us in locating the person in danger. We suggest our software since it has certain unique features that set it apart from others. This paper explains about an SOS android application. SOS applications are applications that can save you and/or your loved ones if you or they are in a life-threatening situation and need immediate assistance.

II. LITERATURE SURVEY

The application in the existing system has authentication mechanism by authentications we mean login systems. These login systems can vary from application to application. Some application may have username and password as their login credentials whereas some application Login system using Email's. In some other applications the login system can have a phone number and OTP verification type of authentication. In the previous applications the feature is to call option. The most basic SOS feature in existing system is an emergency call option.

III. PROPOSED SYSTEM

Our project purpose is to develop an SOS Android Application. Global Positioning System (GPS) is used in this application to determine the location of the individual in distress. At a situation of emergency, the user has to shake their mobile device, with this gesture, the application will send a direct message consisting the user's location in the form of a Google map link and another message stating the emergency situation to a person whose contact information is given by the user in the application. We used Android Studio to build this app.

Java and XML are the programming and mark up languages we have used to develop the application. Once the application is installed and opened.

The user has to enter the mobile number to which SMS need to be sent. A mobile number given by the user will be stored in the Internal Database of the application. Whenever the user want to start the service of the application ,the user need to ensure that Internet Connection and Location are On. Once the service is started, we will get a notification from the application which specifies the instructions to enable the service of the application. In order to send the emergency messages, user need to shake the device or can swipe sideways in the application. Automatically an emergency message stating "I am in Trouble" and a message containing the Google map link are sent. Application also a feature to call the mobile number to which the emergency messages need to be sent in the application.

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IV. FUNCTIONS USED

A. Fused Location

The Fused Location Provider is one of the Google Play Services location APIs. It maintains basic location skills and provides a simple API to select high-level criteria such as accuracy and battery consumption. It also extends the battery life of your smartphone. The method getLastLocation() obtains a location estimate faster and reduces battery use associated with your app. However, if no other customers have utilised location recently, the location information may be out of current.The method get CurrentLocation() consistently returns a more recent, more accurate location. This strategy, however, may result in active location computation on the device.

B. Connectivity Manager

The Connectivity Manager system network class controls your network devices and connections, attempting to keep network connectivity active while it is available. Ethernet, WiFi, and mobile broadband are all managed by it (WWAN).This class responds to questions concerning network connectivity. When network connectivity changes, it also alerts apps. Sending a broadcast intent when the network connection changes is one of the main tasks of this class. If the network connection drops, try “switching” to another network. Provides APIs that allow programs to query the status of accessible networks at a coarse or granular level. Provides APIs for programs to request and select traffic networks. ConnectivityManager. NetworkCallBack() It is a base class for all the network request callbacks.

C. Shared Preferences

Android saves Shared Preferences settings as an XML file in the Shared Preferences folder in the DATA/data/package directory of the application. You can use the environment to get the DATA folder.To utilize shared preferences, we need to use getSharedPreferences() function, which produces a Shared Preference class that directs to the file containing the preferences values. The getSharedPreferences() function has two arguments. Mode is the first parameter.We have used private mode which restricts access to the file to the calling program. The editor methods we have used are Apply() that commits our modification made in the editor to the shared preference object we're working with and PutString (String Key, String Value) which is used to store an string value in the preference editor.

D. Location Manager

This class gives you access to the system's location services. These services allow apps to receive regular updates about the device's location or to be notified when the device enters a certain area. A timestamp, velocity, altitude, latitude, or longitude may all be found in the Position object, which represents a geographic location. The method getLatitude() produces a double result indicating the degree of latitude and get Longitude() is used to produce a double value indicating longitude in degrees. The method on Location Changed is used for receiving alerts from the location client when the location changes.

E. Android Notification Builder

A notification is a message that we may show to users outside of our app's user interface. Notifications are initially displayed as icons in the notification box. Both the notification panel and the notification area are system control areas that users can access at any time. The NotificationCompat.Builder class enables the creation of notifications. The following are the most commonly used methods in the NotificationCompat.Builder class:

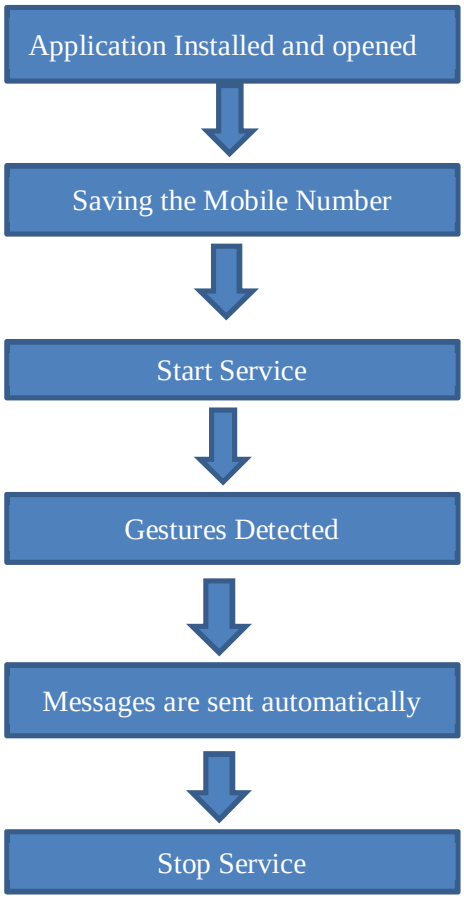
- construct() :returns a notification object by combining all of the provided values.
- setContent(): Instead of the normal view, it returns remoteViews.
- setContentInfo(): This method is used to set the huge text in the notification's right side.
- setContentTitle(): This method is used to set the text for a standard notification's first line.

V. APPLICATION WORKFLOW

Once the application is installed and opened. The user need to enter the mobile number to which SMS need to be sent.The mobile number given by the user will be stored in the Internal Database of the application. Whenever the user want to start the service of the application ,the user need to ensure that Internet Connection and Location are On. • Once the service is started, we will get a notification from the application which specifies the instructions to enable the service of the application.

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To send the emergency messages ,user need to shake the device Automatically an emergency message stating “I am in Trouble” and a message containing the Google map link are sent. There is also a feature to change the mobile number to which the emergency messages need to be sent in the application.

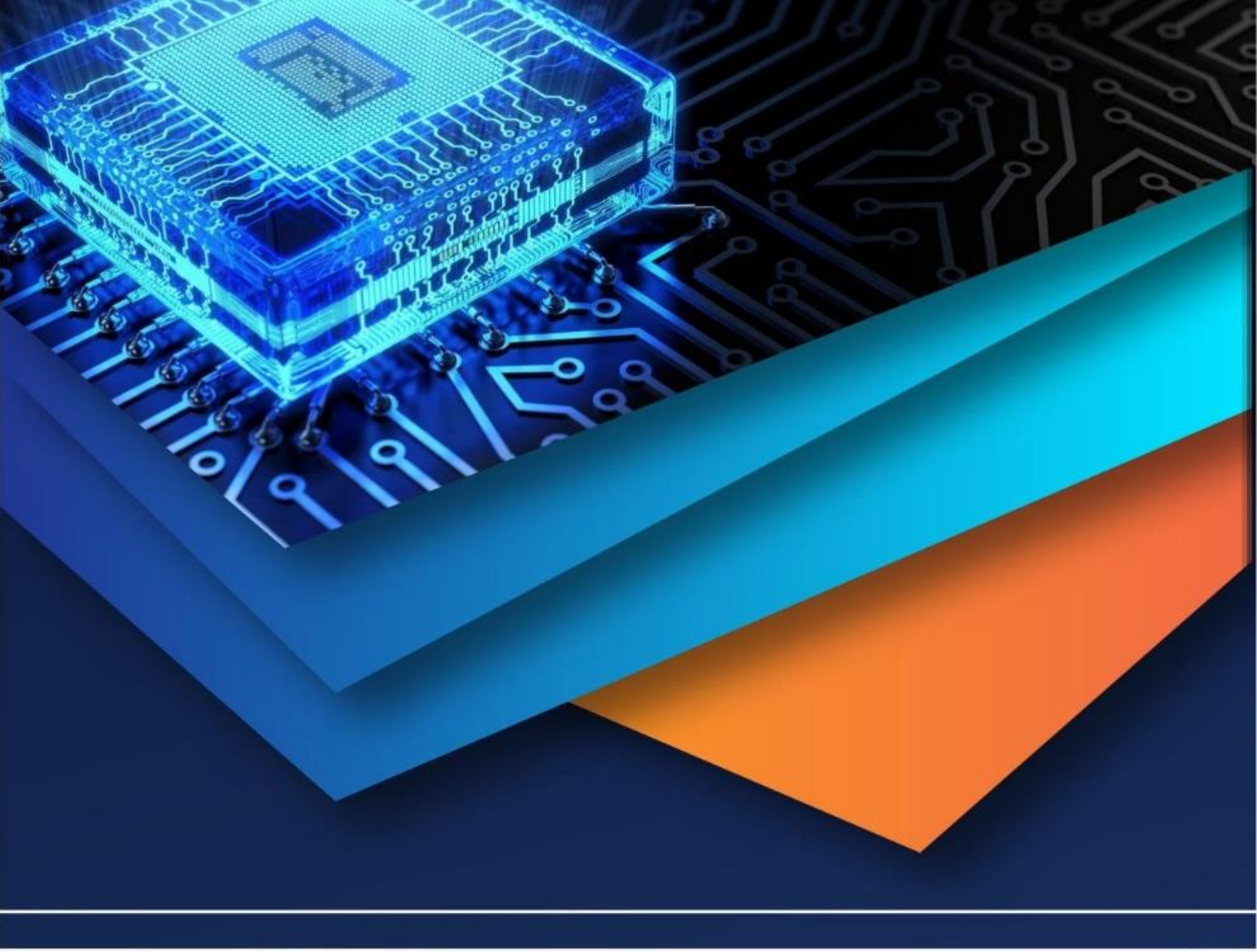


VI. CONCLUSION

Women and solo travelers are the most likely to use the SOS app as they are the people most at risk in today's society. Troubled users can use technology such as video, alerts, alarms, GPS, and SMS to communicate their situation to close friends and family.Our application will be user-friendly i.e., easy to interact and very easy to understand to use its service. So, here by we conclude saying that our application can be used to aid personal safety.

VII. ACKNOWLEDGMENT

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