



ANTI-THEFT APPLICATION FOR ANDROID SMARTPHONE

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Abstract- Smart phones are multipurpose electronic device mainly used for communication. When the phone is missing to the owner or some theft occurs, it is usually a cumbersome process for the owner to go to police station or start searching for it. To search for the lost smartphone efficiently and reduce mental stress of being overconcerned towards it, a project has been initiated. This project aims at developing an android application that helps to track your phone through other smart phones belonging to a person who might be your acquaintance, neighbour or your family member. Each device has an option to either be a user or administrator or both. The administrator monitors its users who have registered through it's id. At each interval of time users send signals to its administrator that they have not been stolen. But, once it is stolen as it is the nature of thief to change the sim card user transmits signal to admin and notifies with subsequent location and the new sim card IMEI number. To develop this application Android technology is used. Android studio and Java programming are used to code for the application. Whereas to contribute for the database to store location Firebase Realtime Database technology is used.

I. INTRODUCTION

Android based mobile phones and smartphones are changing the way we live our lives and has become a very important part in our life. In recent days phones/devices are very popular because of the open-source nature and a large number of utilities are developed and android operating system is been used in many mobile phones. Since ancient times theft has been there and still it is present in society in large numbers which shows human nature can rarely perish. According to Norton Mobile Survey 2011, 53% of adults in India have been victimized by mobile phones and only two in five Indians have a password protection on their mobile phones. Surprisingly, the survey finds that more than half the victims were willing to pay Rs 3,692 to get their mobile phone back, but they ended up paying three times the amount [2]. In India, one of two mobile phone users have been victims of the theft, a survey by e security has revealed that in Bengaluru alone with 200 pieces is being lost every day.

Statistics that is compiled by City Crime Records Bureau has revealed that the financial implications are also huge [8]. According to market survey which is done by a firm in private, the average spending on a smartphone is around Rs10,000. Based on this average spending the total value of mobile phones lost from 2016-19 accounts for 200 crore [7]. This has been a motivation to make an android app to extend the lifestyle in saving the android phones from being theft. To solve this problem, a model analogous to client-server architecture has been used which helps by monitoring the users who want to safeguard their smartphone devices. A person who downloads the app can either register as administrator or as user

alone. In administrator role the person's smartphone device monitors other devices which communicate with it. Once the sim card is changed in the course of stealing a notification is sent to the admin who later alerts the user. Usually the user chooses admin whom he/she knows in their neighbourhood. Whereas in the user role the user after choosing the admin with whom he/she has acquaintance has to give his/her alternate email-id to receive notification about the location of phone stolen and its new sim IMEI number .The background services of a user account keep sending the admin the status of sim card

i.e. is its original IMEI number .The sim card manager in the android helps in retrieving the status of sim card.

II. LITERATURE SURVEY

The purpose of this research work is to feature necessary for securing auto mobiles against threat. Android Operating System is the main source which will be used in the system. open

source mobile platform [1]. Chiefly among them is the location-based service and short messaging service functionality that is used.

The project highlighted the challenge of owning a car in a developing country such as Nigeria and the uneasy feeling the theft of such valuable possession usually has on the owner. This project, therefore, uses information system standard of software development life cycle (SDLC), Android Station,Java and N- SQL was used to develop this project. This project, therefore, using information system standard of software development life cycle (SDLC) and object-oriented analysis and design, set out to develop a simple system which when installed on the

smartphone, possibly concealed in a vehicle that will report its location of such device and the vehicle [3].

The point made here is to begin the GPS administration to track the area, front camera to catch pictures and information association when it is insinuated by communicating something specific with the goal that it lessens the battery utilization and afterwards the picture of a man is caught and send by means of Email [4].

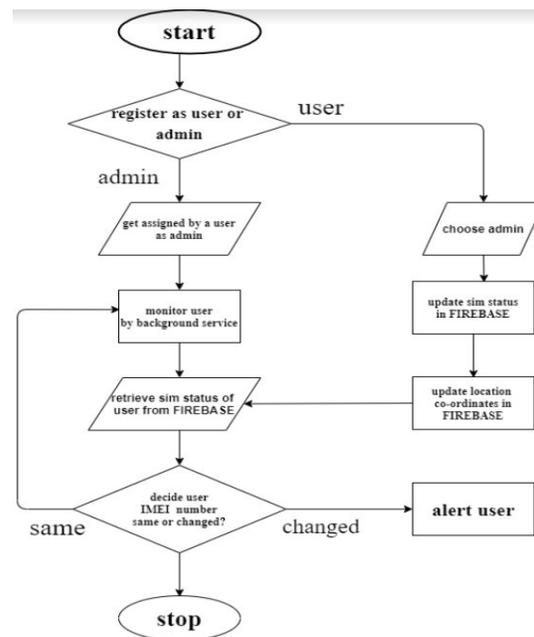
In the application the user has to login and the user will be able to enter the details in the application. There are also options for editing and deleting the already existing details. The user will also be able to enter the contact details, and the other numbers registered in the app will receive an SMS from the new SIM number that is entered in the app and live location can be tracked Proposed system is to start the GPS service to track the live location .In this application, the user also has the ability to delete the confidential information when the mobile phone is lost. The app also make sures that your mobile is immediately enabled upon receiving predefined message from the previously registered mobile numbers. During a SIM card change, the location will be automatically shared to the server. The task of the user in the application is to set the mode to safe mode when he changes the SIM card and to send an SMS to the smart phone having this application installed in the device [5].

The purpose is to design and implement such automated system that uses a mobile phone to detect accidents and report it to the nearest available responders who can help to counter these problems and to reduce casualties as much as possible .Here the login system and the use of firebase real-time database has been shown and how the user logs in and creates a node in the database. The JSON tree format used in this database helps in giving insight as to how the user and admin coordinate their activities and Apache Tomcat server has been used [6].

The system uses a technique to improve the application by using different services like tracking the SMS,and camera. This Application is installed in user’s android mobile. If in case a mobile phone is lost and also when a SIM card has been changed, our application works in the background and will track the SIM Card ID. This will help the mobile to trigger the camera automatically .

The app continuously tracks the location of the Invalid user and will initiate the Google Earth which will indicate the current location of the mobile phone. The Firebase here solves the major problem where the location instance at every interval and the status of sim is saved of the user and admin. Here the admin has own ACTIVITY LOG where he/she gets notification of the current location of the user and SIM STATUS.5 notifications are posted and deleted after the SIM STATUS remains safe .When the sim of the user smartphone device is changed an

INTENT is send to admin through FIREBASE real-time database by updating the Database with the sim status. As mentioned at every interval the admin goes through the newly created NODE in the Database .Each time the user goes through update it creates a new node in the database of its current status regarding its location and simcard. The user and admin both are connected to the FIREBASE real- time database. So the admin enquires with it for the new node and retrieves the current status.



III. SYSTEM DESIGN AND ANALYSIS

IV. METHODOLOGY

Using Android SDK:

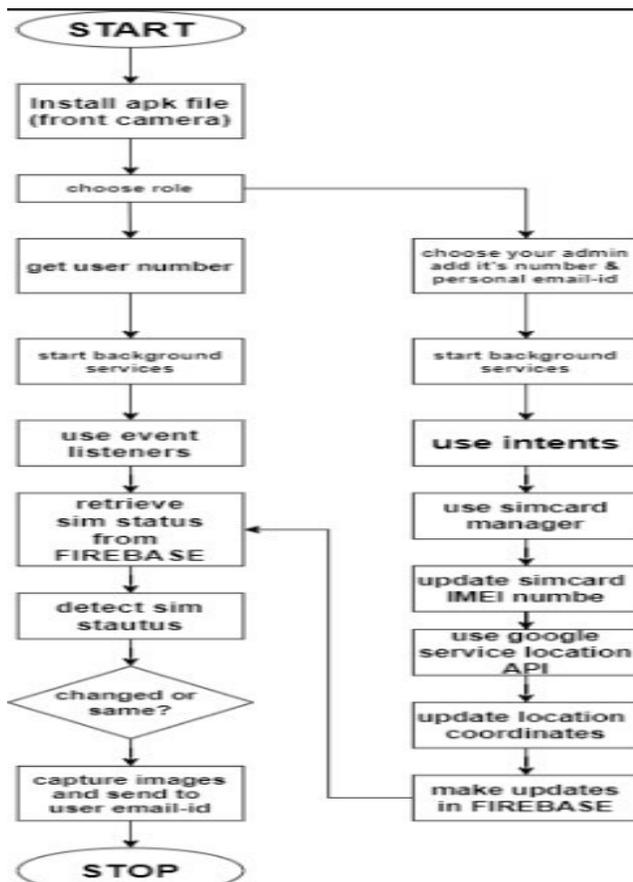
SDK (Software Development Kit) provides tools and a long list of APIs to develop an application on android platform using JAVA.

It provides you all the hardware features that any mobile device have including a display screen.

The Android SDK Manager contains the code of Android kernel, native libraries written in C/C++ and other packages to communicate with hardware .

Using packages to mobile hardware: Android Hardware package gives us support for hardware feature like Camera & Sensors by providing different interfaces. Android name specifies the hardware you are going to use in your application.

Before declaring the use of hardware in <use-feature> you have to request for appropriate permission. When the permission is granted then your application accesses appropriate hardware with proper compatibility.



Uses of Activity and Services

An ‘Activity’ is a component of an application which provides an interface to the user to communicate with the

application like taking pictures, selecting songs to play. Android will make sure it gives the screen to each activity to utilize the User Interface.

Service is a component of an application that performs the operation on the background without any user interaction, and this task is not included in the activity life cycle. The service can be started by any component using the application by creating an intent and also it can be started by own. Once the service has been started, user has the ability to switch to any other application but the main application will be running continuously.

Step 1:
Install the .apk file in any android phone with front camera .

Step 2:
Register giving any alternate number that is the admin’s and your own email-id, this information will be stored in the database using FIREBASE real-time database. Either you can register as only user or simply admin or both.

Step3:
USER ROLE:After having registered you will choose the admin whom you know very well and give the number in admin TEXT VIEW.

ADMIN ROLE:After having registered as admin it is the user’s wish who is your acquaintance will use your number and u will monitor his/her device.

Step4:
USER ROLE: the background services are running even after exiting the app .The SIM Card manager in the android retrieves the IMEI number and updates it to the Firebase database where a new node is created initially and then IMEI number is saved in it. Similarly the google services location API is used to get location of the device and enter in the same node created.

ADMIN ROLE: Here the background services are running irrespective of whether the app has been opened or closed. The admin uses EVENT LISTENERS which are attached to the firebase database to listen continuously to the updates at certain intervals.

Step5:
If supposing the phone is stolen and since it is in the nature of thief to change sim. Automatically

the simcard manager in android respond to the change and gives the newly inserted sim's IMEI number which later is send to the user node in the FIREBASE database and the user phone's corresponding location in longitude and latitude. The location of the new(invalid) user is forwarded as a message to the alternate email-id.

Step 6:

The application will capture the image of the thief periodically but it doesn't mean that is used after stealing. Sometimes when user losses the phone in the house they could log into their email id and see the image where they last kept their phone.

The application which is installed will be running on the background and will not be shown in the task manager. Once the mobile phone is lost, this application enables the user to track a mobile device and to receive notification via SMS to a admin number.

V. CONCLUSION

An Anti-Theft Application which tracks and locates mobile phone that is lost or has been stolen. The application uses GPS tracking and captures image of the unauthorized user. The application deploys security solution that meets user's immediate requirements by providing the images of the thief via email, which makes easy for the user to identify the thief. Therefore helping to find the lost or misplaced mobile phone.

VI. FUTURE ENHANCEMENTS

The application will be further developed and be improved. By rather sending the images to another email id it will be made sure that it will be sent to the admin's account and have a log. Few videos will also be sent apart from sending the pictures and by recording the voices. Alarm triggering mechanism will be implemented after the admin's phone reaches the vicinity of the user's smartphone device.

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