

Handling Android Application using SMS (Short Message Service)

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Abstract - In today's world where the Security of the Mobile Devices play an important role, so keeping it in mind it is also important to keep track of it at the same time. With this topic it will help the user to keep track of the device. With this being an android application no requirement for an active Internet Connection, it will be an extra added benefit for the user to use it. The User will be able to perform actions such as changing the profile status of the phone for ex. Silent to Ringer, Vibrate to Ringer and other actions like wiping the data of the data just by sending a SMS (Short Message Service).

Key Words: Track, Active Internet, Profile Status and SMS

1. INTRODUCTION

Today the people are ready to pay ton of money to retrieve their data or to destroy the data of the stolen phone. According to Lookout, which worked with IDG Research to conduct the study, between 50% of phone theft victims would pay \$500 to get their devices back. It's not that the device is that important to them but the data on the device is very important. According to the same survey one-third of the people are ready to pay \$1000 retrieve their stolen phone and 68% of the polled victims would put themselves in danger to regain the control of their device. [7]

Losing the hardware is bad, but what data can the thief get from the storage? This question is very important. Thieves can always erase the data and use the cellphone/device. [6] So if the data storage is encrypted the thieves won't get your personal storage data. In modern Android phones since Nougat 7.0 are encrypted by default. Encryption is only on those on phones that came with Nougat but not on devices which are updated to Nougat. Encryption only helps if the device is protected with a secure PIN. If the PIN is 1234 the thief can easily guess and access all the data. The data shown on the notification tray can also be helpful for the thief to get around the data. So the solution for this is to hide the notification contents.

One of the more crucial elements of owning a Smartphone is security. Of course, security doesn't just lie in the hands of platform developer —it's also the responsibility of the device owner. Why? People lose phones. What do you do to prevent this kind of situation from happening to you?

Simple — to create an Application with this, you can remotely control your Android either via an SMS. Here are several things you can do with this tool:

- i) Wipe Phone Date. [5]
- ii) Change Phone Profile State.
- iii) Get Current Location.

2. OBJECTIVES

- To create an Application used to perform operation that will change current state of the phone even when the phone is locked.
- To Wipe Data of phone of by a text message.
- To get the IMEI number of the device.
- To use GPS (locates the phone and returns an SMS).

3. PROBLEM STATEMENT

Creating an Android Application that will be used to change the current state of the phone, get the current location of the device using Short Message Service (SMS).

4. LITERATURE SURVEY

[2] The aim of developing an android application which will be used to send the current location of the device to the server database and the phone numbers stored by the user via a Short Message Service. In case of emergency the user can just press the emergency button and the location will be send to the stored numbers. One other way to track the device location is by the web server database which keeps updating the current address continuously of the device.

[1] One of the major issues while accepting the permission is that, are the users paying attention to permissions which they asked of. A survey which was conducted gave a result that only 17% of the people paid attention to the permissions while installing and only 3% of the user could correctly the three comprehension questions. An application must obtain permission in order to use sensitive resource like camera, microphone, etc. For example an application must have READ_CONTACTS permission in order to read the entries in users Contacts.

[3, 4]The purpose of permission is to protect the privacy of an Android user. Android apps must request permission to access sensitive user data (such as contacts and SMS), as well as certain system features (such as camera and internet). Depending on the feature, the system might grant the permission automatically or might prompt the user to approve the request. If your app lists dangerous permissions in its manifest (that is, permissions that could potentially affect the user's privacy or the device's normal operation), such as the SEND_SMS permission above, the user must explicitly agree to grant those permissions.

Table 1

Permission Group	Permissions
Calendar	<ul style="list-style-type: none">•Read_Calendar•Write_Calendar
Sms	<ul style="list-style-type: none">•Send_Sms•Receive_Sms•Read_Sms•Receive_Wap_Push•Receive_Mms
Storage	<ul style="list-style-type: none">•Read_External_Storage•Write_External_Storage
Location	<ul style="list-style-type: none">•Access_Fine_Location•Access_Coarse_Location
Phone	<ul style="list-style-type: none">•Read_Phone_State•Read_Phone_Numbers•Call_Phone•Answer_Phone_Calls•Add_Voicemail•Use_Sip

Table 1 contains the permission group name in one column and the permissions under that group.

Android makes the decision as to whether an app might need the permission based on the value provided for the targetSdkVersion attribute. If the value is lower than the version in which the permission was added, then Android adds the permission.

5. PROPOSED WORK

The Android Application is used to change the state of the phone, get the current location of the device, wipe the data of the device etc. All these actions are performed even when the device is locked. The only requirement for this is application installed in the device and the user has to give all the required permissions that will be required. The general permissions required are the 'READ SMS' and 'SEND SMS'.

The 'READ SMS' allows an application to read messages. The 'SEND SMS' allows the application to send the message. [3]

5.1 Flow of the System

The flow of the system is as follows according to the flow chart below i.e. Fig 1.

Initially the user will have to install the application in the device itself. At the first start of the application the user will have to accept all the permission required for the actions to take place. The general permissions that would be required for the actions are the 'READ SMS', 'SEND SMS', 'ACCESS_FINE_LOCATION', etc. [3]

After accepting the permission the user will login or Register. Then after registering the user will have to set the PIN. This PIN would be required for verifying and performing the actions. If the PIN read by the application is incorrect or doesn't match the PIN set by the user initially, then the action won't be performed.

If the PIN read matches the PIN set by the user then the other half of the message will be read. As the message will contain only two strings, first will be the PIN and the second string will be the name of the action itself. The actions that are possible are wiping the phone, getting the current location of the phone or make the phone alarm.

5.2 Functional Module

There are three functional modules made in the project. These are as follows

i) Design the User Interface and Requirement Gathering

This is the first module which includes the requirement gathering and the Design User Interface for the android application. The requirement gathering process involved gathering all the required information.

ii) Reading and Sending SMS

This is the second module, in this the message that is received will be read and the counter message will be send. This module involves the java logic of Reading and Sending of Messages. As the message has two strings the PIN will also be checked in this module. And will be verified to the PIN set by the user in the application.

iii) Performing Actions based on User Requirements

The third module is used to perform the actions that are requested by the user. In this the second string in the message i.e. the action name will be executed. Actions included such as change the phone profile to Ringer, Wipe Data [5], etc.

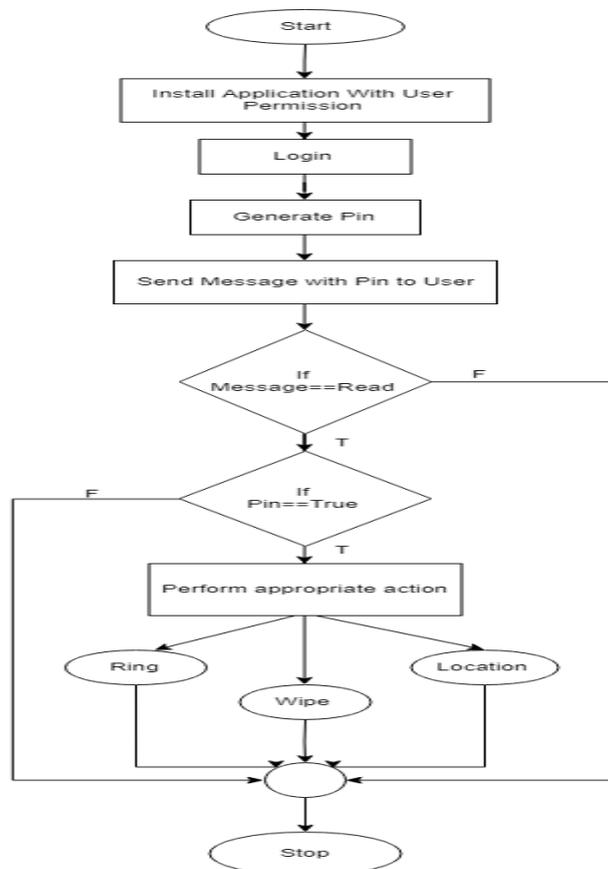


Figure No 1: Flow Chart of System

6. CONCLUSION

In this paper we have analyzed a new way to perform the actions of Android i.e. using SMS (Short Message Service). The range of Android Application is vast and there are many developers who are ready to take advantage of the open source of android. This will help the user get information of their device without the use of an Internet connection.

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