Remote Control Of Android Phone Using SMS

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Abstract:
Android app that lets you “remotely” perform various tasks on your phone from any other phone via simple SMS commands. The other phone, that is sending the commands, need not be running Android – even the basic Nokia 1100 would do just fine – and either phones don’t require GPS or data plans (Internet). The workflow is easy. You send an SMS command from a friend’s phone to your own phone in a given format and the app reacts accordingly. For instance, a command like “ringer” would turn on the ringer while “silent” would put the phone to silent mode. An Android Application to Locate and Track Mobile phones which is embedded with a lot of features such as location tracking, SIM card detection, call monitoring, profile changing, sending the images to the predefined email address and deleting the project specific incoming and outgoing messages.

Keywords: GPS: Global positioning system, API: Application Programming Interface, SMS: Short Messaging Service, URL: Uniform Resource Locator

INTRODUCTION
It was yesterday when I almost wasted half an hour in searching my Samsung Galaxy S phone, which is an android phone at my home. So exactly what happened was that my cell phone was on silent mode and I left the phone in some place at home and was unable to find it. When I tried calling the my number it was ringing but I was unable to hear the ring tone, my first impression was perhaps it was stolen but I kept on trying and it was ringing, so from this I felt that if it was stolen then the person could have switched off it but it wasn’t. So then I remember I put the cell phone in silent mode some time back. After searching all places finally I found it, but at the cost of wasting half an hour. After this incidence I searched on Google to find any application which can remotely switch from
silent mode to general mode. I did find an application which is capable of remotely controlling your Android phone using SMS. We are going to develop this app only as our final year project. We will also add another app in the same app that is an Android app to locate and track Android phone.

**HOW DOES IT WORK?**

After installing the application you need to create a PIN and save it. This PIN is used to unlock the application on your Android phone as well as used to send and receive commands. When you want to send some command to your cell phone you need to follow the below steps: (You can also find all these instructions after installing.)

**STEP1:** Send the PIN to your number as SMS.

**STEP2:** You will receive the list of commands which are valid for 1 hr only, after which those commands will be invalid.

**STEP3:** Send one of the commands from the list and check the result.

**STEP4:** You will receive a confirmation SMS.

It’s that easy and very useful. This application is really very cool and useful for the Android users. The data which could be fetched includes the below:

1. **Contacts** (Fetching contact number from your Address book).
2. **Call Logs** (Checking Missed Calls/Received Calls/Dialed Numbers)
3. **IMEI Number**
4. **Phone Profile** (Changing profile mode to Ringer or Silent)
5. **SIM Number** (Retrieving SIM Number)
6. **SMS logs** (Checking SMS’s received on your phone).

Here’s a complete list of SMS commands that you can try on your Android phone:

- **SILENT** – Turn off the phone’s ringer.
- **RINGER** – Turn on the ringer.
- **IMEI** – Get the IMEI number of your phone.
- **LAST MESSAGES** – Retrieve the last 5 text messages received on your phone.
- **LAST CALLS** – Know the last 5 missed/received/dialed numbers.
- **CONTACT** – Fetch the contact number of a person from the address book. The IMEI number can help you block a misplaced (or stolen) phone from accessing mobile networks (type *#06# to know the IMEI of your existing phone). The app can not only turn on the ringer of your phone remotely but will also send you the phone’s current GPS location by SMS. On a related note, if you aren’t allowed to carry cell phones in your office, you should grab the SMS to Gmail app as it will auto-forward all your incoming text messages and missed calls list to your work email address.

**1. TRACKER**

This application uses Android OS which demonstrates a system that uses a regular mobile phone equipped with a GPS receptor and connected to a global system for mobile (GSM) network that takes advantage of these technologies in behalf of the user safety. App is a useful mobile application that combines several features which aims at the user’s security. The Application development includes the requirements of this
application, the application features and the technologies required for its development.

A. System Requirements

This application is directed to two user profiles, the client and the server to be tracked. The server side requires any android based Smart phone starting from version Android 2.2 having App installed in it with GPRS and GPS enabled. The client side requires any other OS based mobile phones for sending and receiving SMS. If there is any error in sending the message from the operator, there won’t be any message sends to the operator by the application, instead no action takes place at the server side. The SIM card detection feature allows only authorized SIM cards in the device. If there is an unauthorized SIM card in the device the application will send a warning notification via SMS to a predefined emergency number with the current GSM cell id and also the phone number of the unauthorized SIM card. The camera feature requires the front or back camera and internet connection in the android smart phone. For the user’s safety, the application will allow the sending of distress calls via SMS to a predefined emergency number. The application fetches the location through GPS and the GPS values along with address is send to the predefined number. To activate this feature the android Smart phone where this app is installed must be GPS enabled.

The figure shows App requirements:

B. Application Features

Each SIM card is identified by its Integrated Circuit Card ID (ICC-ID). ICC-IDs are stored in the SIM cards and are also engraved or printed on the SIM card body during a process called personalization. When started, the application compares the ICC ID of the current SIM card and the predefined ICC ID to detect unauthorized SIM card in the device. Immediately after the SIM replacement we will get notification about the IMEI/IMSI number and details of new SIM inserted. The user is expected to hardcode a mobile number in the application which enables the application to send notification to that number. The call monitoring feature provides all call registry details like incoming, outgoing calls which are made from the lost android mobile. It records the numbers and names which are known to address book and sends in the form of an SMS to the predefined number. Thus, we will get more
information about whom the cell phone thief has close acquaintance; we can call them in turn to know more about the theft. If the GPS data shows the mobile phone very much close to us but, we are unable to trace it as it is in silent mode or if the person who flicked the mobile phone is still around and has put it in silent mode. Then the profile management feature in the application convert the profile of the phone from general to silent and silent to general as per our requirement by just sending an SMS. We can activate the front / back camera of our mobile phone by just sending an SMS in a predefined format. Upon receiving the SMS the application activates the camera, captures three images (service that runs in background), automatically composes a mail to our email ID, attaches the three snapshots taken, and sends it automatically as a mail to our email account. We can check our mail; view the attached pictures to check out whether we can extract more info about who, how, where etc. Here we assume the new SIM card inserted to our lost cell is GPRS enabled too. We retrieve the location string by sending one SMS to the lost Smart phone in a particular format. We can retrieve the location in two ways. One is single value, which fetch the GPS value and sends only once. The other is continuous fetching, where various values of location can be obtained and send every 1min or for every 5mtrs displacement. The application automatically deletes the incoming and outgoing messages from the Smart phone where this app is installed such that the new owner of the cell is clueless about it all.

II. ALGORITHM

Step 1. Start of process.

Step 2. Install the application. After installing the application on the Smart phone, it will be set to start running in background every time the device operating system restarts.

Step 3. Restart the Android Smart phone.

Step 4. If the SIM is flipped the application sends SMS regarding the details of new SIM to the predefined mobile no.

Step 5. The application auto starts every time the mobile boots up. Then it goes to running mode and will start the main service which continuously listens for the incoming SMS messages.

Step 6. Whenever it gets a new SMS, it checks the content of the message and if the message is in a particular pre-defined format, application reads the same, performs the expected task and replies back to the previously number.

The application installed will be running in the background & won’t be shown in the task manager as well. Once the mobile phone is lost, this application enables the user to track a mobile device and to receive notification via SMS to a predefined number.

TECHNOLOGIES

This app is developed in Java programming language using the Android software development kit. The development tool chosen for this application was the Eclipse SDK.
EVALUATION AND RESULTS

The role of the user in this application is to send SMS to the lost Android Smart phone having application installed in it.

The syntax of SMSs that can be sent by the user and its functionalities are as follows.

1. If the SIM is flipped, the hardcoded numbers receives the SMS containing the IMEI/IMSI number of the lost cell and details of new SIM inserted.
2. If SMS is of the format TRACK-calls-phone number, the operator receives the SMS containing all call registry details like incoming and outgoing calls.
3. If SMS is of the format TRACK-profile-general@phone number the operator receives the SMS containing the profile changing information from silent to general mode.
4. If SMS is of the format TRACK-profile-silent@phone Number the operator receives the SMS containing the profile changing information from general to silent mode.
5. If SMS is of the format TRACK-singlelocation-phone number the operator receives the GPS value of the lost cell in the form of SMS. This value is sent only once.
6. If SMS is of the format TRACK-continuouslocation-phone number the operator receives the update of GPS value of the lost cell every 2 minutes once/for every 5meters displacement.
7. If SMS is of the format TRACK-images-phone number the operator receives the images through predefined email-id.

CONCLUSION

An Android Application to Locate and Track Mobile phones is a unique & efficient application which has a variety of features that enhances the existing mobile tracking system. This App stands different from the existing system as it is not only the GPS value it makes use of but it works on GSM/text messaging services which make it a simple and unique one. This application doesn’t work if the phone is switched off. For future work, it is proposed to implement some algorithm where the phone itself identifies that it is being lost. Whenever, the phone is off for more than 48 hours it should make it switch on automatically. Android app that lets you “remotely” perform various tasks on your phone from any other phone via simple SMS commands. The other phone, that is sending the commands, need not be running Android – even the basic Nokia 1100 would do just fine – and either phones don’t require GPS or data plans (Internet).

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