Anti -Theft Application for Lost or Misplaced Android Phones

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Abstract: *The purpose behind developing this project is to provide the user to track their lost or misplace device. A simple command from friends mobile will make the users phone ring even it is in silent mode if the phone is placed within the reachable range. Sometimes user loses his mobile he/she may not be able to locate it through ringing because mobile may not be within the reachable range, at that time a simple command from friends mobile will help user to receive phones GPS location information on friends mobile as a URL. Also the camera of the phone works in the background without knowing the person captures the pictures and sends this to the actual user.*

Key Words: *Android, Internet, Multimedia, Snapshots, Email.*

1. INTRODUCTION :

The latest mobile phones such as android based mobile phones, called smartphones, are changing the way we live our lives and have become a very important part of our life. Smartphones change the ways of communication unlike fixed line phones, it provides an advantage of communicating with anyone virtually through video-conferencing ,emails, etc. and it also provides a facility to store contact numbers, email, in phone memory which reduces the concept of File-System to store personal contacts. Now a days, smartphones are acting like a computer, it can be used to store information, documents etc., and can be shared with anyone through internet. These latest smartphones are very helpful for doing business. Company related information and documents can be viewed anywhere and can be shared with anyone. These days android based mobiles phones/ devices are very popular because it provides a large number of utilities for hand-held devices through which it acts as a computer in a pocket. Because of its open-source nature a large number of utilities has been developed and android operating system is getting used in many mobile phones.

We present an android-based approach for the design of Anti Theft Application for the smart-phone. Android environments provide several benefits to all the Common peoples of the society as android phones are the new trend of Society. As there are various chances of misplacing the phone or losing it is not affordable in day today scenario. In this fast moving world, peoples are always in rush .peoples usually carry few necessities with them, and we can't separate mobile phone out of it. For one or the other reason peoples looses or misplaces the things and one cannot easily afford loosing things like mobile phone. People always want mobile to be with them. The purpose behind developing this project is to provide the user to track their lost or misplace device. A simple command from friends mobile will make the users phone ring even it is in silent mode if the phone is placed within the reachable range. Sometimes user loses his mobile he/she may not be able to locate it through ringing because mobile may not be within the reachable range, at that time a simple command from friends mobile will help user to receive phones GPS location information on friends mobile as a URL. Also the camera of the phone works in the background without knowing the person and records the video as well as captures the pictures and sends this to the actual user.

The organization of this document is as follows. In Section 2 gives detail of existing system. In Section 3 presents proposed approach. Section 4 gives research findings and your analysis of those findings. Section 4 concludes the overall work.

2. LITERATURE SURVEY :

A. Related Work Done

1. Location Based Service.

With the facilities of Android that provides LBS (Location-Based Service) components for retrieving information about where a mobile device is located, a system that retrieves the location of lost mobile and displays its position on the map was developed. In order to track mobile device in indoor areas, cell identifier of GSM network is applied, instead of GPS. In contrast with GPS, cell identifier uses information from base station which uses radio frequency signals to track mobile device. One of the most interesting things about cell phone is that it is really a radio an

extremely sophisticated radio, which uses some band of frequency that has the basic working similar to the ordinary cordless phone. The mobile cellular communication has been appreciated since its birth in the early 70s and the advancement in the field of VLSI has helped in designing less power, smaller size but efficient transceiver for the purpose of communication.

2. Geographic based tracking system.
This application is of interest to the parents and police department to restrict the roaming of a mobile user to predefined geographical boundary. If mobile user breaches this boundary, then an alert message containing mobiles current location is sent to register mobile phone numbers and email ids.

3. IMEI Based Tracking.
In this system discussion of problem of misplacement or loss of mobile phone and the probable solution that can be done. Once the mobile is reported as stolen, the IMEI number is a special number that is embedded in the mobile phone , blocks the calls made by unauthorized person but here we use it effectively only for the purpose of detection.

4. Vehicle Tracking system.
Vehicle tracking system is a miniature model of Global Positioning System (GPS). GPS is used to find out the position or location of the vehicle around the world. This implementation introduces an Android based tracking and theft prevention system .The proposed security system is designed to track and monitor vehicles that are used by certain party for particular purposes, also to stop the vehicle if stolen and to track it online for retrieval, this system is an integration of shows an implementation of several modern technologies to achieve a desirable goal of fleet monitoring and management.

5. Sniffer Tracking system.
For the detection of lost mobile SNIFFER plays a vital role .The sniffer device has to be designed precisely and size should be reduced for easy mobility for the purpose of detection. The device can be called as a mobile Base station that includes Sniffer Base station, unidirectional antenna, tracking software. The sniffer is a small base station that includes transceiver section. It should operate at a frequency which is much different from the frequency of the current cell in which the operation of detection is being carried out.

6. Biometric Tracking.
The vital concept behind BATS is the Biometrics. The convenience of biometrics is obvious to anyone who accesses a secure computer or network on a regular basis. The ability to replace existing password based systems with a biometric (fingerprint, eye scan) would allow for a more secure computing environment, while also reducing the very real and documented cost associated with maintaining a password system.

B. Conclusion from Literature Survey

From the given survey we found that GPS is the main backbone of any tracking system and it gives accurate coordinate in terms of latitude and longitude. While GPS is widely used in outdoor localization, it does not perform well in indoor localization. This is because it lacks the ability to penetrate through building wall and requires custom infrastructures for every area. Also GPS is of no use when the device is misplaced within the vicinity when it could be found by simple ringing. So we finally concluded of using GPS for tracking also some related techniques such as Mobile Camera and Ringer which will help us in locating the device (Mobile Phone).

3. PROPOSED SYSTEM :

A. Problem Statement
As there are various chances of misplacing the phone or losing it is not affordable in day today's scenario. We present an android-based approach for the design of Anti Theft Application for the smart-phone. The purpose behind developing this project is to provide the user to track their lost or misplace device.

B. System Architecture

1. **Misplaced mobile**: A simple command from a friends mobile will make users mobile to ring (even if it is on Silent mode) if phone is misplaced within reachable range.
2. **GPS:** A simple command from friends mobile will help user to receive his phones GPS location information on friends mobile as a URL.
3. **SIM Change Notification**: If SIM change takes place on users mobile, application will notify about this SIM change activity by sending commands to friends mobile numbers.
4. **MMS and Pictures:** This app enhances new technology like MMS where you can send video clips and picture to any other mobile phone. It gives information about the thief by sending the snapshot and small video. Works even if the GPS don't give the actual link.

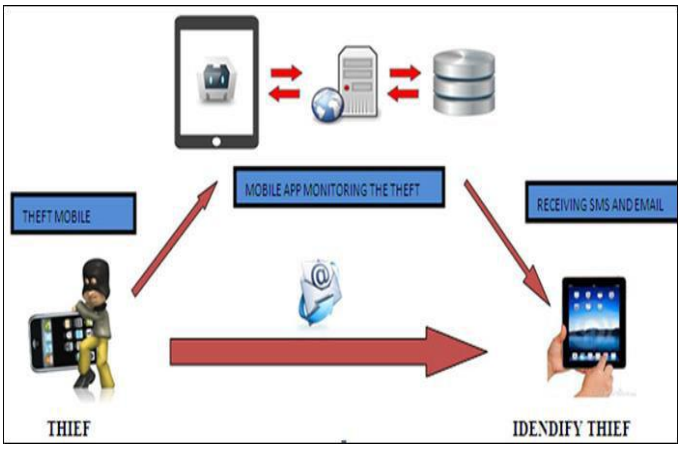

Figure 1. System Architecture

C. Encryption Algorithm:

1. After Image will be captured by camera, image will encrypted by us-ing Improved AES Encryption technique then image will be stored in storage available on the device.
2. First we process image using base64 encoder to convert it in byte array.
3. Then this byte array will be encrypted using AES technique.

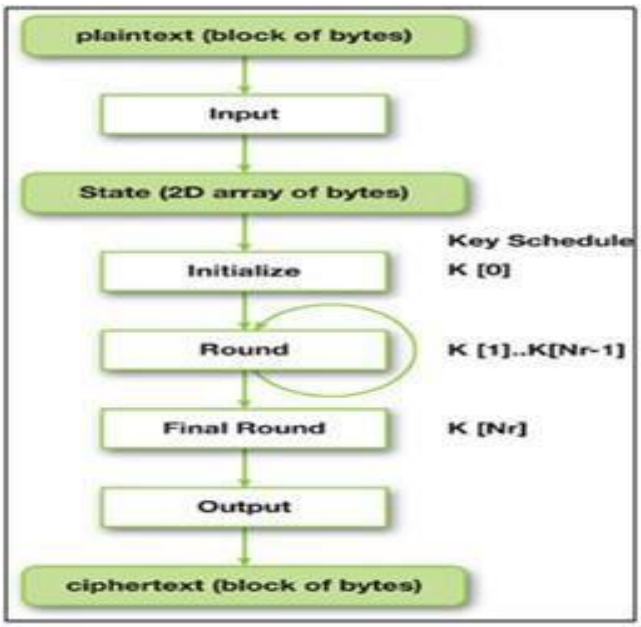

Figure 2: Encryption Algorithm

D. Models of Project

1. Client and Device registration Module:
   - Input: User Details eg. Name, email, sim no, tracker no.
   - Output: All the data will registered to web server and user successful registration message will appear.

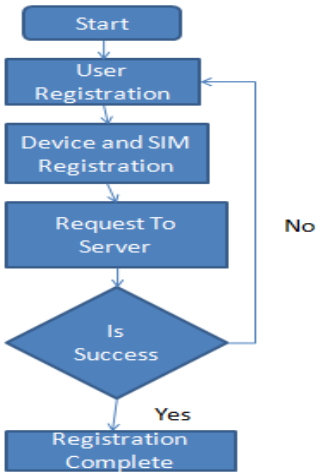

Figure 3: Client and Device Registration Mode.

2. Theft Mode Detection and Activation Module:
   - Input: SIM Change
   - Output: Theft Mode Activation

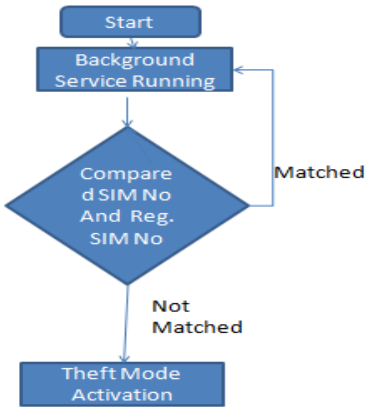

Figure 4: Theft Mode Detection and Activation Module

3. Location Tracking in Theft Mode Module
   - Input: Theft Mode Activation
   - Output: GPS Location Available on Registered Tracker

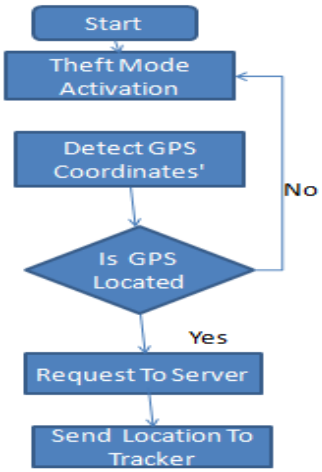

Figure 5: Location Tracking in Theft Mode Module

4. Biometric Image Capture in Theft Mode Module
   - Input: Theft Mode Activation
   - Output: Auto Image Capture

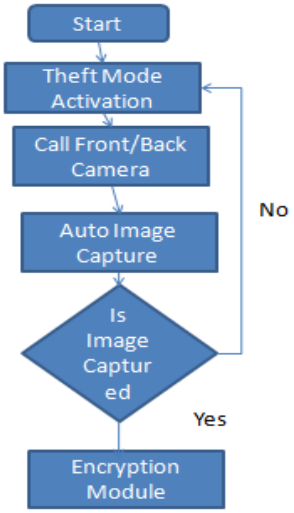

Figure 6: Biometric Image Capture in Theft Mode Module

5. Encryption And Server Content Registration Module:
    - Input: Captured Image
    - Output: Encrypted Image available on Tracker

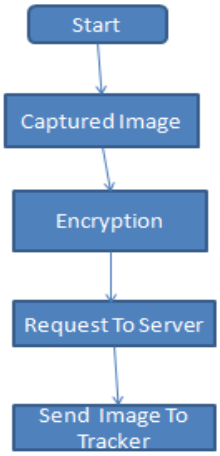

Figure 7: Encryption and Server Content Registration Module.

6. Geographic based tracking system Module:

    - Input: GPS Co-ordinates From theft Mode Activated Device
    - Output: Location Tracking Using these coordinates on map

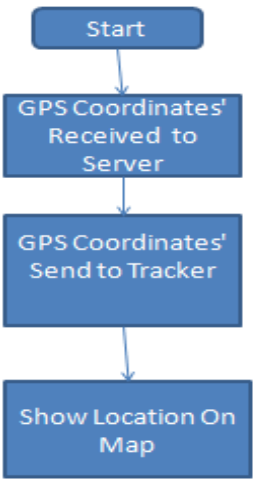

Figure 8: Geographic based tracking system Module

7. Biometric Content Decryption Module:
    - Input: Encrypted Image From theft Mode Activated Device
    - Output: Decrypted Image

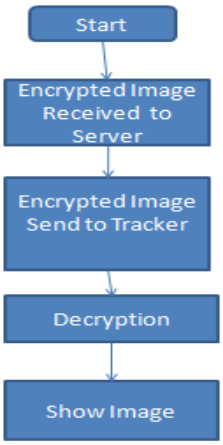

Figure 9: Biometric Content Decryption Module.

4. RESULTS :

The user has to run the program Application.apk and have to fill the information in the textboxes. Once it will be submitted, it starts running in the background.

Camera Control: Android SDK provides a framework API which gives an in built application of camera where you can request a picture from an already existing camera application. To use camera device, we have to declare camera permission in manifest file.

</userpermission android : name = "android:permission:CAMERA"/>

First of all, we should check for camera whether it is available or not, and also number of cameras available (front and rear). The android framework pro videos Camera API and Camera Intent to capturing images an d videos. Camera intent is used directly Camera intent is a fast way to use camera application, it provides an intent action type to request a picture from a camera To send an Image and location to server we have to set permission for internet services in manifest file to open a network socket for an application.

</userpermission android : name = "android:permission:INTERNET"/>

Following are some screenshots of proposed application.

Figure 9: Initial Screen

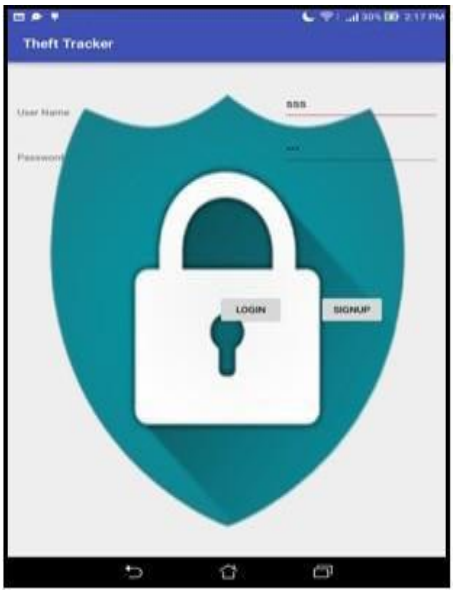

Figure 10: Login Window

Figure 11. Homepage

Figure 12. Add Tracker

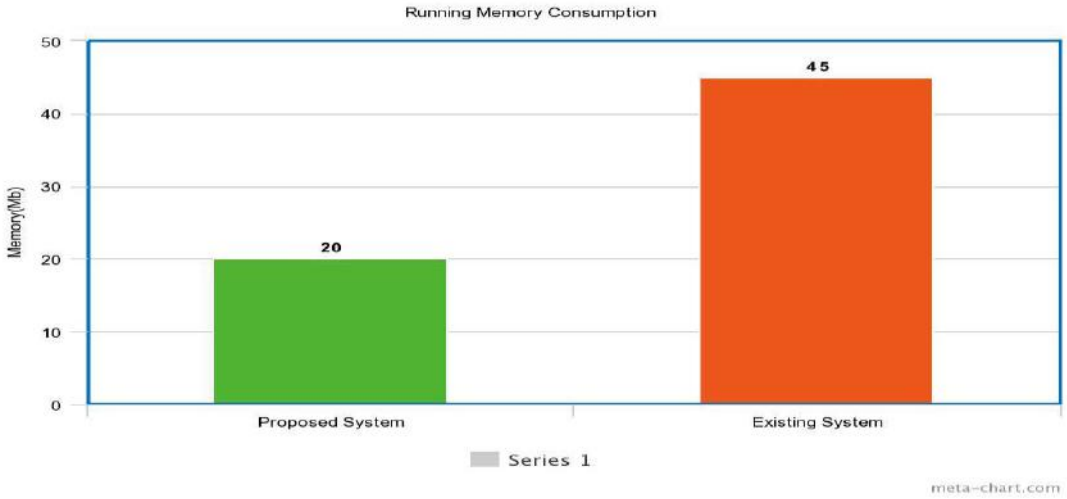

Figure 13.

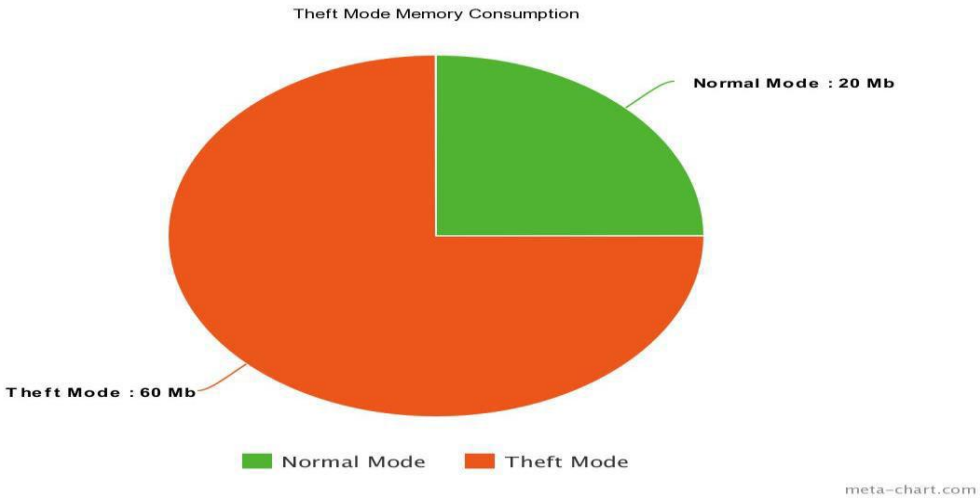

Figure 14:

5. CONCLUSION:

This is An Android Application to Locate and Track Mobile phones ,This is an unique efficient application which has a variety of features that enhances the Current mobile tracking system as we are using a totally new technology of multimedia message and camera functioning which will surely provide certain ease in tracking the Mobile Phone.

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