



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirccce.com

Vol. 7, Issue 5, May 2019

Mobile Anti-Theft Security

Akshay Chechare, Abhishek Adkitte, Neharika Razdan, Pramod Mhetre, S.N. Firame

B. E Students, Department of IT, SITS Narhe, Pune, India

Professor, Department of IT, SITS Narhe, Pune, India

ABSTRACT: This project aims to find stolen or lost phone with the help of different GPS location, IMEI (International Mobile Equipment Identity) Number of phone. When the application is installing it will work in background. This application stores the unique user id & password, SIM Number, alternative phone number, E-mail id, phones current location. Smart mobile phones are considered as the most important devices currently used in everyday life, human beings use devices to save some personal and necessary information either in work or in public life. The aim of this study is to keep the mobile phone from theft or loss by certain characteristics, such as locate it when loss and transform the situation to normal mode to facilitate finding device location by making call, and many other characteristics such as making a backup copy of the essential data.

In this application we used screen monitor concept i.e On and OFF. First user register and login the application. If user switches on- off the mobile then system will ask us for id and password then authenticate user put correct ID and password if its match then he can used mobile if it's wrong then alert msg and mail sending automatically to register no and email with location details of theft.

KEYWORDS: Mobile tracking, SIM tracking, latitude and longitude, user registration, SMS, email.

I. INTRODUCTION

Smart phone is a mobile phone which offers advanced technologies with functionality similar as a personal computer. With the growing speed of technological advancement, smart phones have become the essential components of our daily performance. These smart phones today can do almost everything. Faster networking systems, attractive and powerful applications and the technology literate users are making these smart phones very powerful these days. Smart phone are the best digital devices of present which provides what a human needs. Today everyone has a smart phone instead of having a simple phone which provides features of only doing calls or text messages but having a smart phone is beneficial by this we can do our office work on MS Office, can check our mails any time anywhere and there are a lot of more things that we can do.

1.1 BACKGROUND

Mobile phone has the personal information. If the phone is stolen then there is possibility of misuse of this information. There may be any personal or financial problems can be happen. So finding stolen phone is very important task. There are some technology and technique available. Using that we can find out the stolen phone. In India if the phone is stolen or loss then finding that phone becomes very complicated process. We need to file a case in police station and follow a lengthy procedure. So to make this process easy and comfortable. We have developed an android application. [2] In this application we can find the smartphone by the help of IMEI (International Mobile Equipment Identity) numbering system, which is a 15 digit unique code that is used to identify the GSM (Global System Mobile) phone. This application uses the latest technology like SMS, Internet (Short Message Services) through using it you can send thief's picture which will be captured using front camera and current location of the IMEI number. It gives the exact details about the thief and his/her last location. If the SIM is changed then the location will be sent to email id or the alternative number of the user which is given by user at the time of installation of this application. [3]



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 7, Issue 5, May 2019

1.2 MOTIVATION

The mobile cellular communication has been appreciated since its birth in the early 70's and the advancement in the field of VLSI has helped in designing less power, smaller size but efficient transceiver for the purpose of communication. But however the technology has not yet answered the loss or misplacement of the lost mobile phone which is significantly increasing. The mobile phone is lost there is possibilities for misuse of data stored in it. As there is no mechanism in place which can help the owner to recover his mobile phone. Mobile tracker which is autonomous and intimates with the owner via SMS and Email when it detects SIM change. Geo code technique is used for detection of the theft mobile and it can be done in efficient manner. The IMEI number is a unique number that is embedded in the mobile phone. The main purpose of which is the blocking of calls that is made by unauthorized person once the mobile is reported as stolen but here we use it effectively for the purpose of detection of lost mobile. The GSM Mau's IMEI (International Mobile Equipment Identity) numbering system is a 15 digit unique code that is used to identify the GSM (Global System Mobile) phone.

When a phone is switched on, this unique IMEI number is transmitted and checked against a data base of black listed or Grey listed phones in the network's EIR.

A subscriber identity module or subscriber identification module (SIM) is an integrated circuit that is intended to securely store the international mobile subscriber identity (IMSI) and the related key used to identify and authenticate subscribers on mobile telephony devices (such as mobile phones and computers).

A SIM card contains its unique serial number (ICCID), international mobile subscriber identity (IMSI), security authentication and ciphering information, temporary information related to the local network, a list of the services the user has access to and two passwords: personal (PIN) for ordinary use and a personal unblocking code (PUK) for PIN unlocking. GPS is a system used for the purpose of finding the position of particular object. This system receives satellite signals and determines the location of mobile device. The system can be classified under two types of data transmission.

- i. SMS data transmission.
- ii. GPRS (General Packet Radio Service) data transmission.

1.3 SMS DATA TRANSMISSION

This system requires user to send request via SMS on a device of which a GPS tracking device is installed. After that, the device will send the co-ordinate of its respective position and identity to the recipient mobile via SMS. This co-ordinate can be represented on a map software by using Google Map. GPS tracking system which sends the position of the tracking object every single minute from SIM card of lost mobile to the respective mobile. Because this system is a 24/7 service, GPS is widely used in outdoor localization system; it does not perform effectively in indoor location. This is because it lacks the ability to pierce through building wall and requires custom infrastructures for every area in which localization is to be performed. Android is a platform for mobile device developed by Google. It gives a wide set of software development operating system, tools and APIs necessary to build applications. Android is recently used in developing mobile application. Furthermore, Android service was created for retrieving mobile particular information and running the data monitoring process from the lost mobile as background process, which will not be identified by the thief. The advantages of android are given below.

1.4 OBJECTIVES:

1. Track and find out the location of thieves' phones.
2. Enable user to control SIM card.
3. Enhance and secure connection between android applications and web applications.

1.5 SCOPE:

This research targets any one has android device, helps tracking and controlling devices remotely when lost or theft.



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirce.com

Vol. 7, Issue 5, May 2019

1.6 PROBLEM DEFINITIONS

There are many existing applications to track the lost mobile. It is not possible to find location of unknown user where they currently present. Identity of the unknown user is not identified to find the theft mobile. Location Tracker application is to track the android mobile using GPS.

Disadvantages:

1. Identity of the mobile thief is not determined.
2. User location cannot be tracked without the permission of the mobile user.
3. The current location of unknown user is not updated within 5-seconds.

II. LITERATURE SURVEY

K. Subha et al. The mobile phone is lost there is possibilities for misuse of data stored in it. As there is no mechanism in place which can help the owner to recover his mobile phone. Mobile tracker which is autonomous and intimates with the owner via SMS and Email when it detects SIM change. Geo code technique is used for detection of the theft mobile and it can be done in efficient manner. The IMEI number is a unique number that is embedded in the mobile phone. The main purpose of which is the blocking of calls that is made by unauthorized person once the mobile is reported as stolen but here we use it effectively for the purpose of detection of lost mobile. The mobile moves from one place to another place the value of the latitude and longitude is taken and stored in the memory. Only the latest value is stored in the memory. If SIM card is inserted then the application compares the owner's SIM card number and current SIM number. If SIM card number match, it should be in idle. If there is a mismatch, then the present latitude and longitude value of the mobile is sent as the SMS to the specified phone number and without the knowledge of the person. The application takes snapshot of current mobile user and send picture via Email to mobile owner's Email id. Thus proves to be different from the existing mobile tracker applications.

Asmita P. Walimbe et al. smart phones today can do almost everything. Faster networking systems, attractive and powerful applications and the technology literate users are making these smart phones very powerful these days. Smart phone are the best digital devices of present which provides what a human needs. Today everyone has a smart phone instead of having a simple phone which provides features of only doing calls or text messages. This project aims to find stolen or lost phone with the help of different GPS location, IMEI (International Mobile Equipment Identity) Number of phone. When the application is installing it will work in background.

Merlin Monisha .A et al. Smart phones are acting like a mini palm computer, it is used to store documents, information etc., and also can be shared with anyone through internet. Smart phones provide a large number of functions and utilities for hand-held devices through which it acts as a mini computer in our pocket. Because of its open-source nature a large number of useful functionalities has been developed an android operating system is getting used in many mobile phones. This Anti- Theft application presents a technique to track the location of stolen android based mobile devices by using additional services like URL link Short Message Service (SMS) instead of MMS along with voice recording feature. The scenario proposed in this work is totally dependent on the hardware of your Smartphone like camera (front &back) and support for URL link messages. Once this software is installed, it will work in the background, stores the current SIM number in a variable and keeps checking continuously for SIM change, whenever SIM gets changed from mobile, it will take snapshots without the permission from the invalid user and then it will send an URL link message of the snap shots to the alternate mobile number and email id, which was provided during registration. The enviable advantage of this software is that it is very easy to configure and keeps running in the background without interrupting the user which aids in identifying the invalid user.

Deebika.T et al. The system is filled on with features like SIM card detection, location fetching through GPS and transfer of images to email address and delete important data from mobile phones. All these features work on the SMS



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirccce.com

Vol. 7, Issue 5, May 2019

basis. So, incoming SMS format plays an important role. The android application running in the Smart phone monitors all the incoming messages. If the SMS is received in a predefined format it reads the SMS and performs the expected task. This paper describes a tracking application, which is embedded with a lot of features such as location tracking, SIM card detection, capturing of images, sending of message. An application for android mobile to find a lost mobile, deals with login of mobile user when mobile owner switch on the mobile the application will automatically started and it takes a snapshot of mobile owner. Also application gets the latitude and longitude value of the mobile by using the inbuilt GPS in mobile. The mobile moves from one place to another place the value of the latitude and longitude is taken and stored in the memory. Only the latest value is stored in the memory. Once the SIM card is removed from the mobile it wait for the other SIM card to be inserted. If SIM card is inserted then the application compares the owner's SIM card number and current SIM number. If SIM card number match, it should be in idle. If there is a mismatch, then the present latitude and longitude value of the mobile is sent as the SMS to the specified phone number and without the knowledge of the person. The application takes snapshot of current mobile user and send picture via Email to mobile owner's Email id. The proposed intelligent android Anti-theft application provides the safe and alert mode options (to avoid unwanted notifications). It is embedded with a lot of features such as SIM tracking based on location, detecting change in SIM card, application enabling at the time message sending and also delete important data from mobile phone. Thus proves to be different from the existing mobile tracker applications.

ShirinSalim et al. The 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. The app is able to enable the GPS when a non-authorized SIM card is detected in the device by comparing the Integrated Circuit Chip Card Identification (ICC ID). The ICC ID number is unique for each SIM card. Mobile phones become very import for every human being. But almost everyone might have experienced with misplacing or losing of their mobile phones. So, the security of mobile phones are becomes more challenging one. To detect and monitoring of thefted or misplaced mobile phones, this paper develops an unique and efficient android application. The features of this technique are quite different from the existing tracker applications which would be helpful in tracing the lost mobile phones without the help of any protecting agency. The tracking application has the capability of SIM card detection, call monitoring, image capturing etc. based on some predefined SMS. The application installed will be running in the background and 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. Some specified formatted messages can be used to control the mobile phone.

Vigneshwaran.K et al. In automobile field, the security and theft prevention are one of the main areas in current scenario. The security goals are achieved by the GSM, GPS technology. But it is commonly used the four wheeler and not in the two wheeler. Using these technologies, we can only track and monitor the vehicle. Previously, GPS is used to get the vehicle current position of the two wheelers and that data will be send to the user mobile phone through the GSM. In this system, we implement for theft prevention in two wheeler using GSM, GPS and Android technology. We can track, monitor and stop the stolen two wheelers too by this system. The two wheeler position is obtained by the GPS module, which is send to the microcontroller, which then sends the message to the user smart phone through the GSM module. In this implementation we use Atmel microcontroller, air solenoid and water solenoid valves are interfaced with GSM modem and GPS module which will be fixed in the two wheeler. User can stop the two wheeler when the vehicle under theft by android application. The objective is to track the stolen two wheeler and to stop it using Air Solenoid and Water Solenoid. The main advantage of the application is that security will increase in the two wheelers and theft will directly be prevented by the consumer using low cost technology.

Newton Lwanga et al. The goal of this paper was to investigate and propose a design mechanism which we called Integrated Phone Locator (IPL) aimed at achieving an all-time active anti-theft phone tracking capability on mobile devices, either on or off, online or offline. The paper explores various anti-theft designs in mobile devices and applications currently offered by the industry and identify areas for improvements. It is expensive to replace and puts user's important information at risk. Mobile devices/Smartphones are small and portable, users always move along



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 7, Issue 5, May 2019

with them everywhere they go and very often they tend to pay little attention to them as they carry along with them and hence become targets for thieves.

ShwetaDhanu et al. smartphones are acting like a computer, it can be used to store information, documents etc., these documents can be shared with anyone through the internet. These latest smartphones are very helpful for doing business work. 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 for android operating system and it is getting used in many mobile phones. This project aims to improve anti-theft for android based mobile phones by using different services like MMS instead of SMS. The scenario proposed in this project is totally dependent on the hardware of your smart phone like front camera, back camera and support for multimedia messages. Once the installation of this software is complete, it will work in the background, it will store the current SIM number and keep on checking continuously for SIM change, whenever SIM card gets changed from mobile, it will take few snapshots and record a video in the background, without taking permission of the user and then it will send a multimedia message, and number of snapshots, to an alternate mobile number and an email id provided by the particular user, during installation of the software.

Mrs. Sharmila K. et al. This paper presents a technique to improve anti-theft for android based mobile phones by using different services like MMS instead of SMS. As the use of smartphones, tablets, pallets based on android operating system is increasing, many scenarios related with anti-theft have already been proposed and much software based on anti-theft have also been developed, but most of these software are not freely available and it's difficult to identify the thief by using these software's e.g. GPS Tracking. We put forward a new scheme, which enhances the present scenario, based on new technologies like Multimedia Messages. The scenario proposed in this work is totally dependent on the hardware of your smartphone like camera (front & back) and support for multimedia messages. Once this software is installed, it will work in the background, stores the current SIM number in a variable and keeps checking continuously for SIM change, whenever SIM gets changed from mobile, it will take snapshots and record a video in the background i.e., without taking user permission and then it will send an MMS, and number of snap shots, to an alternate mobile number and an email id, which was provided during installation. The latest mobile phone such mobile phones, called smartphones,

Chinmay Lad et al. ATT are a Bluetooth tracking device that when installed in a device can provide its location and give the information to the owner (via website). The latest tracking devices make use of Bluetooth module. The additional feature ATT has is that it can communicate with other ATTs in its proximity and make the owner of the device aware of the location. All the owner has to do is to go to the site and flag his device as stolen so that other ATTs are aware of the stolen device. These days it's very common for a person to own mobile phones, cars and other valuable tech items. However these gadgets and items like mobile, purses, wallets, bags, etc. become easy target for thieves to steal them. With the in- crease in the robbery and such crimes it is very important to contain it. Gone are the traditional days of searching stolen items, with the techno-boom there is also increased intelligence available in the field of security which should be harnessed. Hence, using this motivation to try and contain these robberies and actually recover the stolen item we introduce the idea of ATT (Anti-Theft Tracking and Location Detection Chip).

III. SYSTEM IMPLEMENTATION

In this application we used screen monitor concept i.e. On and OFF. First user register and login the application. If user switches on- off the mobile then system will ask us for id and password then authenticate user put correct ID and password if its match then he can used mobile if it's wrong then alert msg and mail sending automatically to register no and email with location details of theft.

Application installation module is used to build the android application using eclipse environment with an android development kit. To start the emulator for development of the application. There will be the emulator to create the new application. There will be the main module to develop. To create an innovative android application for anti-theft mobile

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirccce.com

Vol. 7, Issue 5, May 2019

tracker for smart phones and to install the application to mobile. It is used to fetch the real data from user and store into database using SQL Lite. [2]. In this module first user interface where user has to provide User Id, Password, SIM, IMEI number, E-mail ID and alternate number then click submit button. Next it will store information in the database. This information is surely protected by encryption. User can change the alternate number and IEMI number whenever they want.

We have proposed three methods to track location of the lost smartphone.

3.1 Basic Method

In Basic Method we use SIM unique number for identification of authorized user. SIM number is nothing but the sequence of ten digit numbers. Every SIM has its own unique number. When the phone is stolen thief will replace the SIM by its own SIM card then so the new SIM number will not match with previous SIM number, this will create an alert message

and this alert message will be sent to the alternative number which is registered at the time of installation of application. With the help of this new number we can easily find out the location of the smartphone.

3.2 GPS Location

In Second method we can find the location of phone number. Every phone has unique IMEI number. And we can easily track this number using GPS system. GPS satellites revolve round the earth twice a day in an orbit and transmit signal data to earth. When a mobile is lost or stolen then the application will run and it activates the GPS and mobile network. This application sends location to the user through mail in interval of one minute. The user goes to the location and catches the lost phone. Then the users stop the application by using his password.[6]

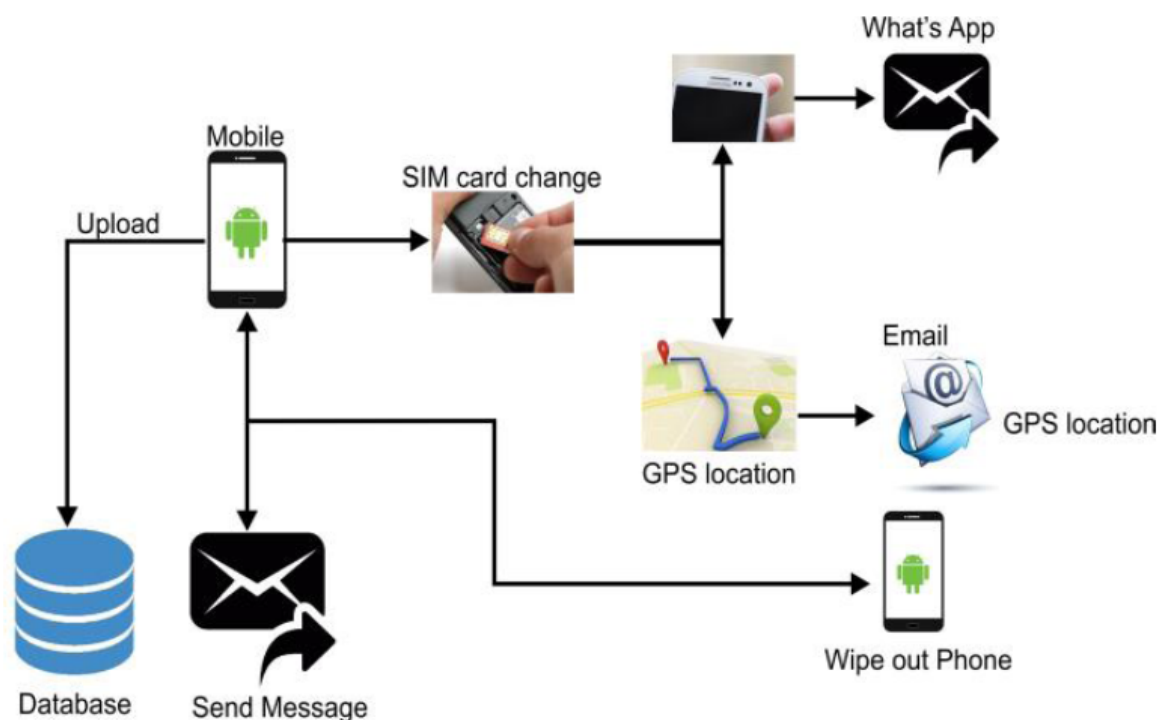


Figure 1: System Architecture



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirccce.com

Vol. 7, Issue 5, May 2019

IV. IMPLEMENTATION AND DESIGN

Android powers hundreds of thousands of mobile devices around the world. The smart phones have become attractive targets for the thief. There are a number of precautions that the users of the android phones can take to reduce the chance of their phone being stolen and to ensure that, in the event that the worst happens, the thief is unable to misuse the private data stored in the memory card. An android application that demonstrates a system which 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.

Advantages of Propose System

1. With this app, your mobile is immediately enabling the application upon receiving the predefined template message from the pre-registered mobile numbers.
2. You can also track the location of your lost mobile on Google Maps. When SIM on your phone is changed, the location is automatically shared with the server.
3. It is used to upload the contact details on cloud.
4. To change the profile with the help of the message.

4.1 MODULES DESCRIPTION

1. App Installation Module

To build the android application using eclipse environment with android development kit. To start the emulator for developed the application. This is the emulator for create the new app. In this application we used screen monitor concept i.e On and OFF. First user register and login the application. If user switches on- off the mobile then system will ask us for id and password then authenticate user put correct ID and password if its match then he can used mobile if it's wrong then alert msg and mail sending automatically to register no and email with location details of theft.

2. SIM Change Detection

To give the authorized information about the user. It will verify by the network system. It will be stored in the virtual database. If any clarification it will handle by the system. This service starts automatically in stealth mode when one SIM is removed and another is inserted. This service will receive information as data from the database and check the SIM IMSI Number with the database data. If SIM Number does not match with the database, then automatically capture the snapshot of current user without user interaction.

3. Mail sending

The application takes snapshot of current mobile user and send picture via Email to mobile owner's Email id. The system is filled on with features like SIM card detection, location fetching through GPS and transfer details to email address and delete important data from mobile phones

4.2 AES ALGORITHM PERFORMANCE

Figure [5.2] represents that AES and Rijndael provide the best performance, partly due to the fact that they are purely managed. RC2, DES and 3DES are older algorithms and in term of security not the most reliable so best to be avoided [25].

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirce.com

Vol. 7, Issue 5, May 2019

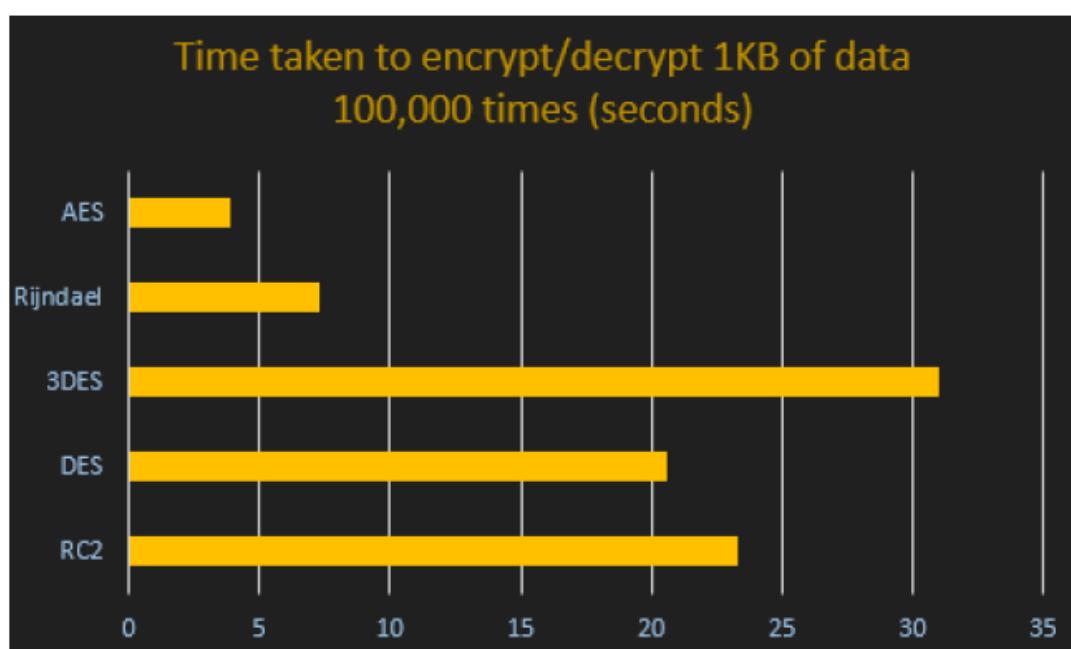


Figure 02.Performance of AES Algorithm

V. CONCLUSION

This paper presents an anti-theft mobile tracking application. This application provides strong security to Smartphone when it is lost or stolen by thief. It gives the location as well as photos of thief to user on alternative number and email id provided by user. With the advent of time, technology is updating every day. Our application further will be updated and improved. Currently this application works on android operating system. In future we are trying to make this application for IOS & windows mobile OS. This will be our future scope. In this application we used screen monitor concept i.e On and OFF. First user register and login the application. If user switches on- off the mobile then system will ask us for id and password then authenticate user put correct ID and password if its match then he can used mobile if it's wrong then alert msg and mail sending automatically to register no and email with location details of theft.

VI. FUTURE SCOPE

One is the basic where we get SMS whenever SIM card is changed, second method is track GPS location of phone by using Google map and the third method is we capture the images of thief.

REFERENCES

- [1] K. Subha "Anti-Theft Tracking System for Smart Phones" International Journal of Advanced Research in Computer Science and Software Engineering 6(5), May- 2016, pp. 134 138
- [2] Asmita P. Walimbe "Mobile Theft Tracking Application" International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 - 0056 Volume: 04 Issue: 01 | Jan -2017 www.irjet.net p-ISSN: 2395-0072
- [3] Merlin Monisha .A "Anti-Theft Application to Track and Locate Lost or Stolen Android Based Mobile Devices" IJCSN International Journal of Computer Science and Network, Volume 6, Issue 2, April 2017 ISSN (Online) : 2277-5420 www.IJCSN.org Impact Factor: 1.5
- [4] Deebika.T "Anti-Theft Mobile Tracker Application" International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007 Certified Organization) Vol. 4, Issue 3, March 2016
- [5] ShirinSalim "Monitoring System for Detecting Mobile Theft" International Journal of Computational Science and Information Technology (IJCSITY) Vol.4, No.2, May 2016



ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 7, Issue 5, May 2019

- [6]Vigneshwaran.K “An Intelligent Tracking System Based on GSM and GPS Using Smartphones” International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (An ISO 3297: 2007 Certified Organization) Vol. 4, Issue 5, May 2015
- [7] AzeemUsh Shan Khan “Anti-Theft Application for Android Based Devices”2014 IEEE international Advance Computing Conference (IACC)
- [8] NewtonLwanga “Integrated Phone Locator (IPL): Lost Mobile Phone Tracking and Recovery Designs”
- [9]ShwetaDhanu “Anti-Theft Application for Android Based Devices” International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 3, March 2016
- [10] Mrs. Sharmila K. “Smart Theft Alert for Android Based Devices” International Journal of Computer Techniques — Volume 3 Issue 4, July - Aug 2016
- [11] AdytaLandge “Anti-Theft Location Detection Chip (ATT)” International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 9, September 2015