

Intrusion Detection System Using Android Spy

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Abstract—In Today's world security of data is prime concern at everywhere so it is mandatory to protect the data from leaking outside. Nowadays Android mobile phones are everywhere such as company, school, colleges, institutes and organisations. In such a company's security of the confidential data such as future plans, revenue report, decision making report, product plans, students record and many other. Anyone can leak this data and misuse it in illegal manner in order to track over this we are implemented the system "intrusion Detection System using Android Spy" which will keep track on user's mobile such call, SMS, and its current Location through GPS.

Keywords: Android, GPS, SMS, Intrusion, Spy.

I. INTRODUCTION

Android mobile phones are the important aspect of today's digitized world, they are everywhere in the market but the impacts happening from it is necessarily considerable. In Company everyone has the Android mobile phones. In working hour employees may do chat, calling and gossips over the android mobile instead of their work. We can say some employee may leak the company's confidential data such as its future plans, future work, decisions making, plant set up and revenue report, in order to maintain security in it and protect against the leaking of this data to the outside world is serious problem as per the company's privacy and security policies. In some cases employee may cross the company physically in working hours or employee may enter in restricted zone where the company's confidential work is maintained or employee may enter in the other department without major permission for the intrusion and data theft purpose which is also a serious problem in the company's security point of view. So after

considering these entire factor and to avoid such situation we implemented the system called "Intrusion detection system using android spy" which helps to avoid such problems. This system will tracks the Incoming call, Outgoing call, Incoming SMS, Outgoing SMS along with its content and other than this it will track the current location of the employee that where that employee is currently exists [10] [11]. This all task will be monitored by the administrator of the company with valid authentication.

As soon as the employee will receive the call from unknown or known number an alert will be sent to the administrator's mobile device and website for log and analysis purpose. Also the employee will make a call this alert will be also sent to the administrator's mobile device in the form of E-mail. In this E-mail the content will be Call from, Call duration, Call date, Call time will be included for details and security purpose. If employee crosses the specified geographical area or enters in restricted zone of the company or we can say latitude and longitude of the company then an alert will be sent to the administrator's mobile device. Physically and logically this system is very important in terms of security and privacy of the company. This system is not only limited to track over the employee but also we can track the children's location whether they are at college or outside or kidnapped by some criminals which is major concern in parent's point of view. We can also track the location of the criminal [5] [6]. It

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plays an important role in government organization to track over the suspicious person in the organization and administrator can easily track the employee's activity with their mobile phones i. e. what kind of data is coming to mobile and what kind of data is going from that mobile phones. So this system is very important in terms of security and privacy of the company, organization, college and institute.

II. EXISTING APPROACH:

As per the survey which was conducted by various organizations, we have found that there is need to give a provision to track the employee's call, SMS, and current location but it all can be done over the Bluetooth technology and it has many of drawbacks.

There are some drawbacks of the existing system approach:

1. Less reliability
2. Less details of the calls , SMS, and Location
3. More in price
4. Platform dependent
5. Only one user can be track at a one time, if multiple user can call and SMS at a same time the system is unable to give efficiency and proper output it get hanged.
6. Bluetooth should be on of employee's mobile device

These drawbacks are overcome by our proposed system "Intrusion Detection System Using Android Spy" which is discussing in proposed approach.

III. PROPOSED APPROACH:

We proposed the system called "Intrusion Detection System Using Android Spy". This will overcome the Bluetooth technology by wireless Wi-Fi technology. This system tracks the activity from employee's mobile phone and sent through Wi-Fi to the administrator. In our proposed system we are dealing and programming with the android operating system which provides the better programming flexibility [3]. "Intrusion Detection System Using Android Spy" provides more reliability, if many user call, SMS at a one time the system does not fails and provides proper output to the administrator in the form E-mail alert.

In this system Incoming call, outgoing call, employee's current location can be tracked and sent to the administrator. For this we implemented the Android Spy which will be hidden in the employee's mobile phone and runs in the background and continuously sends the alert to the administrator from employee's mobile device [11]. If user crosses the company's premises say latitude and longitude then an alert will be sent to the admin with exact location, name, and mobile number of employee. For meeting these all services we proposed the system entitled "Intrusion Detection System Using Android Spy".

IV. SYSTEM REQUIREMENTS

These are requirements to implement this system.

Front-End: J2EE, JSP [1].

Back-End: MySQL [4].

RAM: 1 GB minimum

Hard Disk: 40 GB minimum

Mobile device: Running Android version 2.1

Open source software: Eclipse and Java [2].

V. IMPLEMENTATION

Following figure shows the graphical representation of the "Intrusion Detection System Using Android Spy".

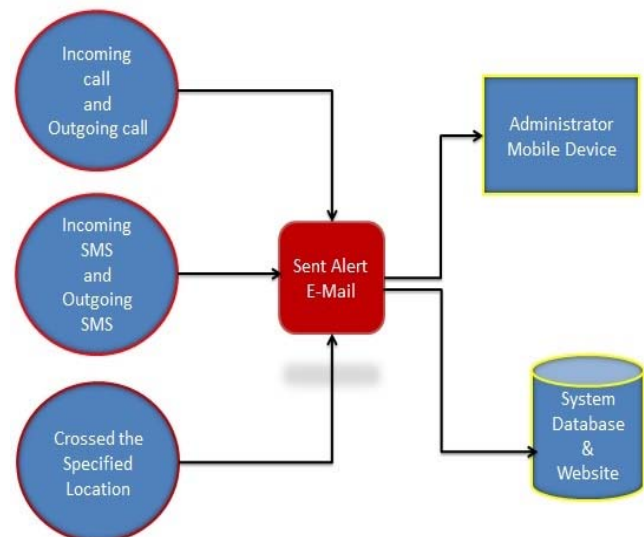


Fig. 1. Working and architecture of Intrusion Detection System Using Android Spy

In this system we developed following modules

1. Android Spy
2. Tracking of employee call (Incoming and outgoing)
3. Tracking of employee SMS (Incoming and outgoing)
4. Tracking of employee SMS contents
5. Tracking of employee Current Location
6. E-mail alert

All these modules will keep track of the Call, SMS, and current Location of employee. In the (1) module we developed the android spy which will be installed in the user's mobile device which runs in the background activity on the android operating system. This android spy will keep tracks on the ongoing activity in the mobile device so far and sent an alert of call, SMS, and location of employee to the specified website address and E-mail.

In (2) module the tracking of call can be done using (1) module in which caller number, call time, call duration, call date will be tracked and sent to the administrator's mobile device. This will be really beneficial for the company is the suspicious and repeated caller number is found then action can be taken against that particular employee if he found intruder, simultaneously logs will be maintained on the website server.

In (3) and (4) module tracking of SMS of employees can be done using (1) module in which incoming SMS, Outgoing SMS and in addition to that what kind content in that SMS is? And is that a right number? This type of analysis can be done and as soon as the SMS sent or received by the employee's android mobile phone an alert with above information will be sent to the administrator. If the SMS content found confidential the further action will be taken against the employee.

In (5) module tracking of employee's current location can be done. If employee crosses the specified geographical area or restricted zone of the company an alert will be sent to the administrator's mobile phone and also on the website, this is really helpful from which employees will not crossed the geographical area of the company.

In (6) module an alert will be received by the administrator using (1) module and also the logs will be maintained in the centralized web server of the company for analysis and security purpose.

For implementing the above six module we required following permission from Android programming such as

1. android.permission.READ_SMS
2. android.permission.WRITE_SMS
3. android.permission.RECEIVE_SMS
4. android.permission.SEND_SMS
5. android.permission.CALL_PHONE
6. android.permission.READ_PHONE_STATE
7. android.permission.INTERNET
8. android.permission.ACCESS_FINE_LOCATION
9. android.permission.RECEIVE_BOOT_COMPLETED
10. android.permission.READ_CONTACTS
11. android.permission.ACCESS_NETWORK_STATE
12. android.permission.ACCESS_COARSE_LOCATION

After including this permission in AndroidManifest.xml we will able to get the all alerts regarding call, SMS, and Location of the employee [3] [10].

VI. RESULT AND DISCUSSION

We found the following results after implementing this system.

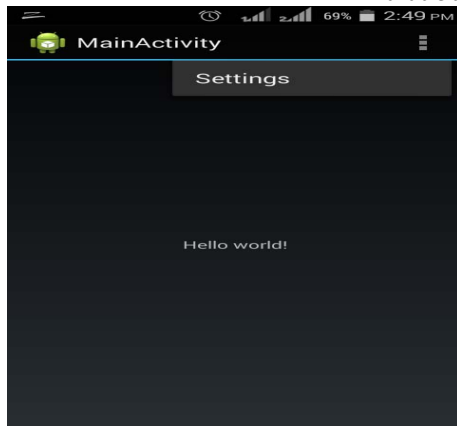
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Fig . 2. Android Spy Main activity

This is our main activity showing hello world which will keep track of the call, SMS, and current location of the employee. This .apk file will be installed in employee's android mobile phones and its permission will be hidden to the user. This spy will send the all status as an alert to the administrator's mobile phone.

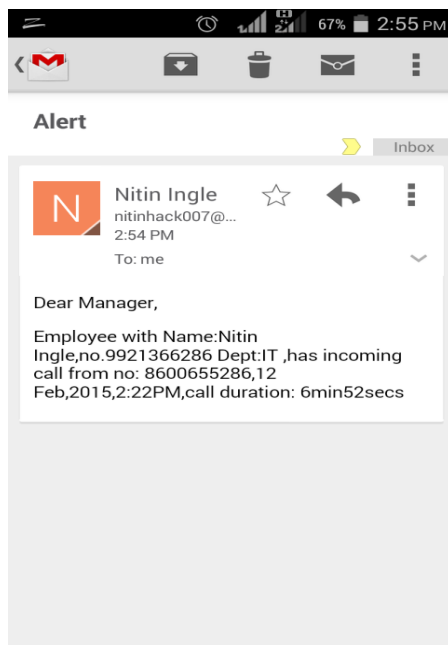


Fig. 3 Result of tracked Incoming call as an alert to the admin

This fig 3 is an alert received by the admin when user has an incoming call on his mobile phone. Similarly when user will make call an alert will be sent to the administrator's mobile with its complete

details such as shown above employee's number, department, call from, Time, and Call duration. This all information will be maintained to the server also that admin can logged into server and check also if he failed to receive an alert from an employee.

This fig 4 is an alert received by the admin when user has an incoming SMS on his mobile phone.

This fig 5 is an alert received by the admin when user has an outgoing SMS on his mobile phone.

In this way alert can be received by the administrator through which intrusion can be stopped and we can easily find the suspicious one in the company.

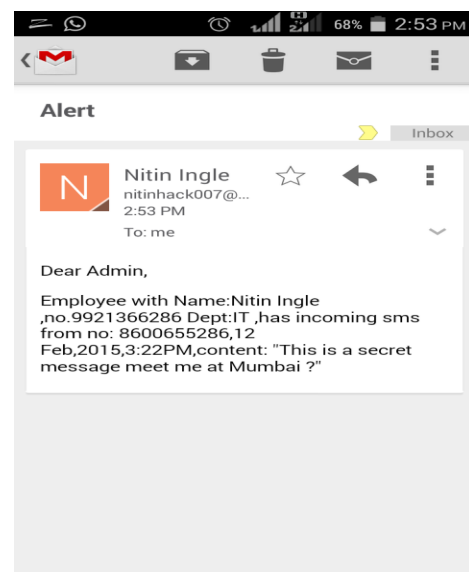


Fig. 4. Result of tracked incoming SMS as an alert to the admin

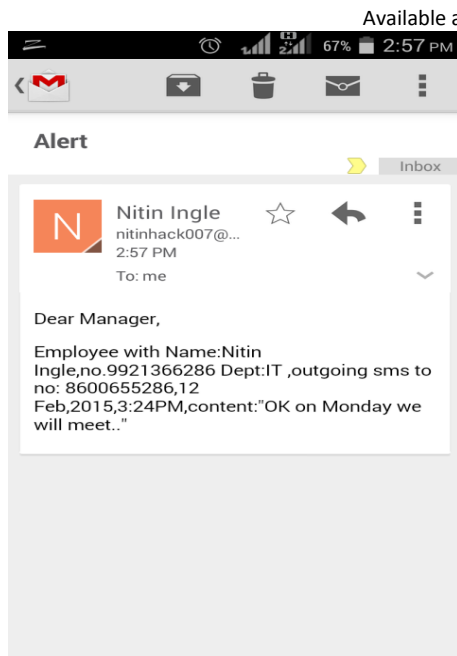


Fig. 5. Result of tracked outgoing SMS as an alert to the admin

VII. CONCLUSION

The system entitled "Intrusion Detection System Using Android Spy" plays an important role in all aspect such security and privacy of the security. It is based on the android operating system. This system tracks the employee's day to day activity with their mobile phones such as incoming and outgoing calls with its complete details and sent an alert to the administrator. Another thing is that administrator can also get alert details about the employee's location if they crossed the company. This system is also beneficial for children tracking for their safety by their parents and student monitoring can also be done through this system, again various government agencies can use it to find suspicious one to leaking the data. This system is very useful for social security.

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