4th Generation Android Security

Asif Ansari[1] , Amritpal Singh Thethi [2], Yamini Thawale, Ajit kumar Shandil, Bhagyashree pathrabhe

Departmnent of Computer Science and Engineering

Gurunanak Institute of Engineering and Technology, Nagpur

[1]Asif.2010.ansari@gmail.com , [2]Amritpalsinghthethi@gmail.com

***Abstract*—in the world of smartphones it is essential to have an android phone to complete several task of day to day life. And having that device with security is also a big task. To secure the data in our smartphone there are very few applications in this world which offers free service without any data theft legally from their devices. For making the device more secure there is need of an application which will take care of data when the device is lost and will help finding the location of the thieve who stole the device. By getting the mobile number of the thieve we can catch him and get the data secure or by erasing the data remotely and not caring for the device if we want to.**

I. INTRODUCTION

Above 70% of the smartphone in the market is having android operating system. So there is more chances that anyone can misuse the data from the phone by any means, by robbing, by hacking or any other ways. But we can make a bit secure by having some sort of new security applications installed in it. Anyone can take the smartphone of any other person and can misuse the data in it by several ways and to stop that a new idea of making a lock pattern is being developed by us. Google provide some basic security methods of pin number, password, pattern, face recognition, more. But never made a color related pattern layout for pin plus color. By making two layer security with the help of colors and pin number at once make it tougher to crack the pin code of user. Another security provided by this application will be tracking the location of the user who insert SIM in the slot. A SMS will be generated from the user and sent to a preinstalled number, which will let the owner know with whom the smartphone is.

II. BACKGROUND

A. Other Security methods

First, Google made some of the security methods like PIN, security pattern, face unlocking,alphanumeric password and more developers made some other ways to unlock the phone.

B. Third party software

Some group of organization make security applications for android but they are providing it for some cost but works perfectly. The main aim for designing the new layout for locking was to open the new path for developers to think and increase level of the security by making some new ideas work with the old concept of securing the smartphone. The color pattern with pin number was never made earlier so it made and interest in developing an application of that category. For any person it is easy to know the pin number by using some probability of 84 optionsbut for cracking the color pattern with pin number goes 6! i.e. 720 ways and it will require time to do that and patience. So for making the data and phone secure a method of increasing the security can be implemented via color pattern with PIN.

III. EXISTING TECHNIQUES

Several kinds of lock system are present for the android devices and for other devices. The main concern behind the lock systems are reducing data thefts and data misuse.

A. Pattern lock

Most of the android devices users are having a pattern lock for making their device secure. But the problem is if anyone see that pattern then it is easier for them to unlock it.

B. Pin lock

Four digit pin is easy to guess if just we have a digit with us. Because the combination is only 4! , i.e. 24 try if we know all 4 digits and not their sequence. And even if we don't know any number then the combination will be 10*10*10*10, i.e. 10,000 if we chose repetition of digits.

C. Alphanumeric password

Most used passwords are alphanumeric because it is unpredictable what password a person can choose. It is practically tough to break this password with some tries and prediction.

D. Face-recognition / finger Prints

A clone with same facial looks of a twin person can unlock the face lock in many devices and finger prints are a unique id that are mostly unbreakable and nobody can have same prints as anyone else. So this is mostly used techniques for higher security purposed

IV. DESIGN AND ALGORITHM

1) Set Multi Layered Password Module

Redundancy input (re – touching the circle) is allowed and when the circle is touched more than once it

changes color (maximum of 7 times) so that the user can identify the correct input with number code.

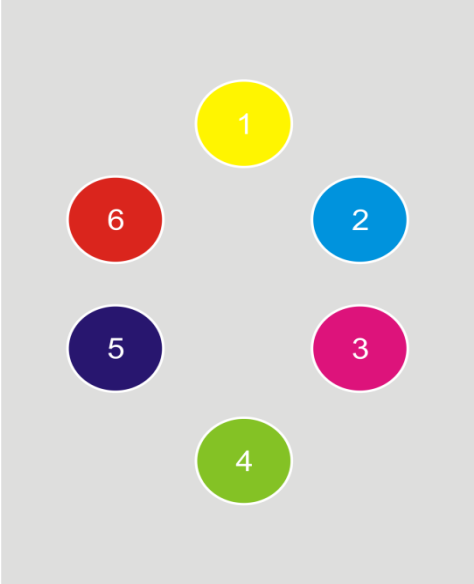

Figure 4(a)

2) Access Activity Module

In this module first we need to verify the password before going to access the application. Authentication through the images only.

3) Change Login Id Module

If we want to change the our existing password, then we must entered in to this module.

4) Location track

If the robber puts a new SIM card the app detects the change and sends a geo location SMS from the new SIM to a previously set mobile number.

5) Data Erase

You can erase your phone memory or SD card with a preformatted SMS so that no one can access your secure data. During all these activities your stolen phone will be in lock mode.

Algorithm: The first page activity that opens by opening the application in any android device will open a security page with earlier saved pattern of color and number. By touching the number button each time will change the color of button and that color will be saved in the phone memory. To unlock, both number and color combination should be in correct sequence and then only lock will be opened.

V. IMPLEMENTATION

The application after development is used in android devices but the idea of color combination and numbers could be used anywhere in accessing security doors of organizational places or in banks for increasing the security level. This idea of layout designing may be implemented in vehicles, passwords of ATM cards, and much more.

1. Android Device

The basic android device have GPS pre-installed in it and have the functionality of accessing the location with the permission of the use. Developing application for the latest android version is a bit difficult task and this application will be running on android 4.4 devices only having latest functionalities

.

2. Software Requirements

- *Operating System: Android, Linux/Windows XP, 7, 8, 8.1*
- *Software: J2SE, ADT plugins*
- *Development Tools: Android SDK, Android Emulator, Eclipse/Android Studio*

3. Hardware Requirements

- *Pentium IV with 2GHZ processor*
- *1GB RAM*
- *40GB HDD*
- *Android Smartphone 4.4 (optional)*

VI. CONCLUSION

A really helpful method to increase the security of the data in any device or to secure the other devices. After making the application any age group, any person can install it and have the secure feature for free all the time.

VII. REFERENCE

1) "Computational and Information Sciences"Yan Chen , Taoying Li , Renyuan Wang , Junxiong Sun 2013 Fifth International Conference on 21-23 June 2013 IEEE.

2) https://developer.android.com/training

3) www.tutorialspoint.com/android/

4) www.codelearn.org/android-tutorial