A Survey Paper on Authentication System in Android Phones

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1   Abstract

owing to the continuous development of technology and the urgent need for smaller technological devices, a new technologies have appeared instead of the computer and laptop, these technologies are Smartphones and Tablets that are characterized as small and comfortable and It has the ability to store our personal data such as messages, contacts and media including photos and videos so more security is required. A various security systems have been developed. However, if a mobile device is lost we will comfort a lot of problems related to security. In this paper, the discussion will be about Lock Screen System which is provide a good security system for Smartphones and support the convenience for users.

2   Introduction

The number of smartphone users has increased significantly as a result of the emergence of android phones which is a smartphone running on Google's open-source android operating system. Many different versions of android have been launched, the latest version known as Oreo. This version has been developed to increase the speed of device when using applications, reduce the time to restart the device and other features in the devices running Android. Most people have smart devices running Android system due to its suitable price for all people and it has multiple features such as the ability to do

several tasks at the same time, various phone options and other features. Therfore the use of smartphones become a common phenomenon and it has a big impact in the people life, so these devices may contain our personal information. Therefore if the device is lost or fallen into the people hands then may obtain a big problem[1]. The first line of defense against the bad guys is the screen lock[2] But this is not a creative solution cause the person can access the device in case of loss or theft easily. in this paper , The system that was proposed about an upgraded Lock Screen system which enable to improvement the security system in smartphones and provide comfortable system for users.

3   Related Work

The security in Smartphones is a critical issue due to the amount of our personal information that it contains. In previous papers that studied, we can discussing some of screen locks that have been developed to protect the information in the smartphones. Initially, to access the screen lock, user must go to the setting options and select Lock Screen. then he can select from different Lock Screen choices or he can install a Screen Lock from android store .

3.1   *Slide Lock*

Slide lock is a lock screen that already exist in all of the android phones[11]. This Screen lock is the most simplest than other screen locks, the user can slide vertically or horezentally on the screen but this technique is not enough secure because anyone can access to the smartphone surreptitiously without knowing the owner of the phone about it.

3.2   *Face Unlocks*

In this type of screen lock the user must save the face as a password to lock the screen using the front camera of the phone. If accepted, the system will ask the user to provide the backup option if the system can not recognize the face of the user. The two backup options are PIN or pattern. After that when the user tries to unlock his phone he must put his face inside of

a face-shaped ring of dots using front facing camera until the device accept his face and unlock the screen.[2,8]

3.3 *Pin Unlock*

In this type of screen lock the user must assign a specific digital pin as a password to open the screen, then if he wants to open the screen he must insert the same digital pin, if two pins matches the screen lock will open.

3.4 *Joy Locker*

In this type the user can open the screen lock by playing a certain game but this method is not secure because anyone who finish the game can access to the phone.

3.5 *Alarm Anti-Theft Screen Lock*

Alarm Anti-Theft Screen Lock is an app that combines between security and screen lock, the app release a loud warning if someone tries to open the phone without getting the password.

4 The System Proposed

The figure below shows that the owner of the device will first generate .apk file using eclipse or netbeans. Then the owner of the smartphone will install the .apk file in his smartphone. After that, the owner will proceed to set up the screen lock on his smartphone. The system mechanism mainly is based on the pin where the system ask the user to choose a random number and then add this random number to the current time of the smart phone so the resulting pin will be the pin that was added to the time. For example, If the random number that Selected by the user is 20 and the current time of the smartphone is 11:00 the new pin will be 11.20 so the user must enter a new pin to unlock the screen. as a result of this process, some people around you can't save the pin that you entered by eyes follow up, then the security will be good.
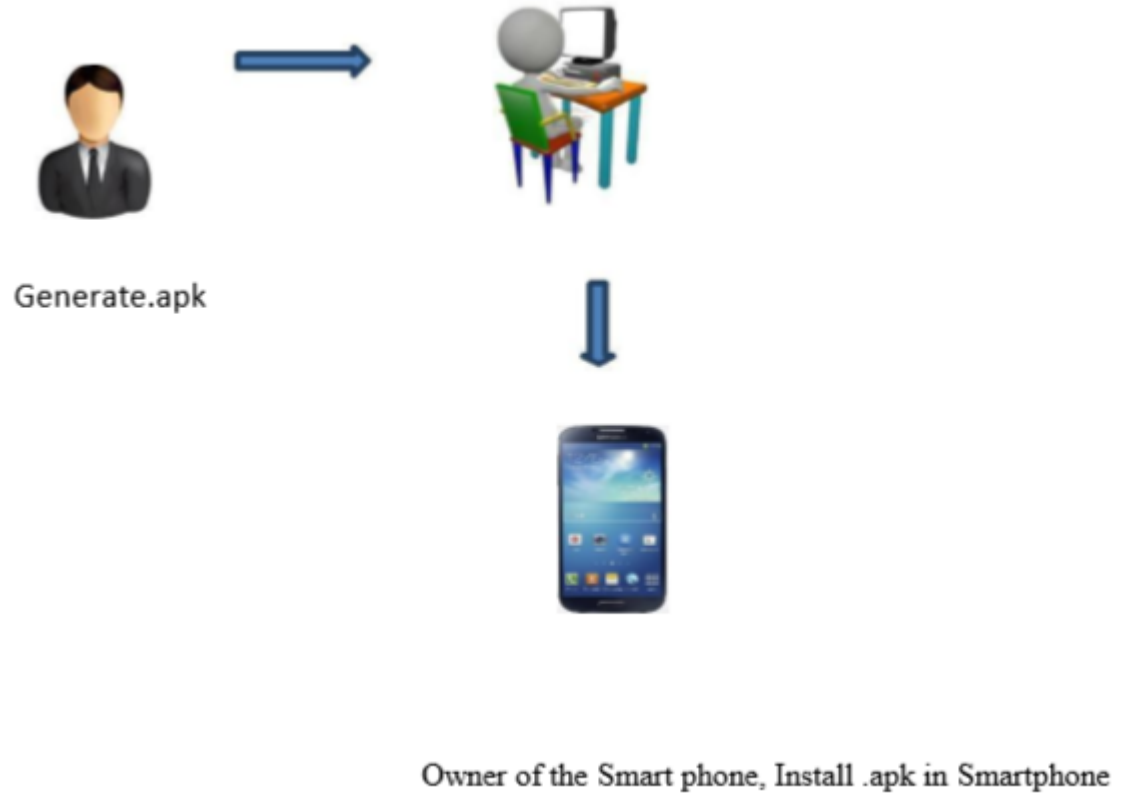
Generate.apk

Owner of the Smart phone, Install .apk in Smartphone

Figure 1 Screen Lock application

5 Conclusion

In this survey paper, we have discussed a different screens lock methods and the problems associated with it. Most of the methods that we mentioned are not secure and can be easily accessed by anyone, The pin method is also very insecure because anyone who keeps track of the number that you entered by follow up with his eyes will be able to access to the smartphone. the method that have been studied will resolving this problem through the automatically changing the pin depends on the time. Today a Smartphones take an important part of our life and contains most of our specially information so they

must be protected from access to it by a stranger people without knowing the owner of the Smartphone.