Secure Algorithm To Unlock Mobile Phone By Mobile Shaking

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Abstract— **Screen locking/unlocking is important for modern smart phones to avoid the unintentional operations and secure the personal stuff. Once the phone is locked, the user should take a specific action or provide some secret information to unlock the phone. For the security of these phones we propose a new android based application called NextGenLock which is used to provide lock to mobile phones. This application consists of two unlocking mechanisms which are finger placing unlocking mechanism and mobile shaking unlocking mechanism. In this application for placing the fingers the screen is divided into number of rows and columns as per the screen resolution. User has to place the fingers on the numbered blocks without lifting the fingers and shake the mobile in any of the directions i.e left, right ,up ,down. The sensor which is inbuilt in android mobile phones is used for detecting the shaking action. .If the provided unlocking scheme is correct then the user will get the access to mobile phone .It is difficult to identify the unlocking scheme and it is simple and convenient to use.**

Index Terms— **Smartphones, Authentication, Sensor ,Security.**

I. INTRODUCTION

Screen locker is a fundamental utility for smart phones to prevent the device from unauthorized use. We are going to develop android based unlocking application known as NextGenLock. The technique is robust compatible across different brands of smart phones. Smartphones from android version ice scream sandwich to lollipop are compatible for this application. Users and businesses employees use smartphones as communication tools, but also as a means of planning and organizing their work and private life. For avoiding the unauthorised access to mobile phones more security is needed. Means authentication is important for every smartphones .For that a security mechanism should be in mobile phone Various methods such as pin , password, pattern ,slide to unlock already exist in mobile phones. Slide a finger over the screen, provides no protection, but lets it get to the Home screen quickly . Face Unlock method is used to unlock phone by looking at it. This option is less secure than a pattern, PIN or password. Pattern is used to draw a simple pattern with the finger to unlock the phone. PIN requires four or more numbers. Longer PINs tend to be more secure. Password requires four or more letters or numbers. This is the most secure option, as long as you create a strong password.

II. PROBLEM STATEMENT

This application is useful for the users to provide security to the mobile phones. Presently, many biometric methods are present such as iris detection, palm detection, face detection etc. PIN, password, slide to unlock are also present. They have following limitations:

1. They are costly.
2. Heavily influenced by external factors.
3. Easily guessed.

Focusing on drawbacks and inadequacies of existing process, definitely there is a need of an efficient system. The proposed system rectifies the demerits and defects of existing process to a greater extend.

III. LITERATURE SURVEY

Various methods that exist to unlock the smartphones such as user can unlock his/her phone through sliding his finger across a defined trajectory. PIN, the most common method used by traditional digital device, is always adopted on smart phones for unlocking smart phones .The user can pre-define a graphical password, recognitions of face voice, fingerprint. The behaviour biometrics is the other classification of biometric measure, which identify the user based on their behaviour features, such as gesture typing behaviour mouse movement tapping behaviour or gait. These methods cannot either be adopted in smartphones or be suitable for unlocking smartphones.

IV.PROPOSED SYSTEM

The proposed system is called as the NextGenLock application which provides unlocking scheme .Unlocking scheme includes to shake mobile phones by placing fingers on the blocks of the image. The main screen consists of background image which is divided into blocks. The image is divided into n rows and n columns. Firstly user will have to create unlocking scheme .It is successfully saved .After that user will provide shaking action .When mobile is in lock state then the user will provide whole lock scheme of placing the fingers without lifting and shaking the mobile phones .If user has provided the correct scheme then and then only the user will get access to mobile phone.

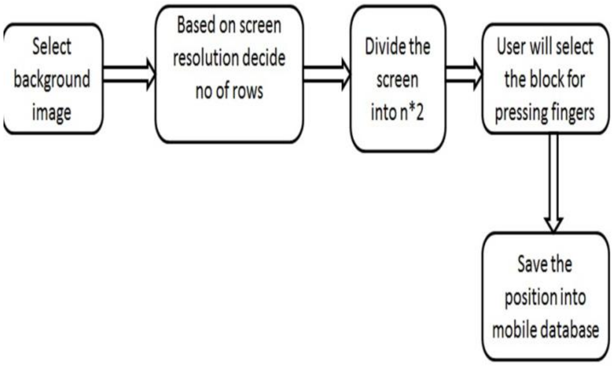
Select background image
Based on screen resolution decide no of rows
Divide the screen into n*2
User will select the block for pressing fingers
Save the position into mobile database

Fig: System Architecture 1

Selection of image: The user will select the background image of his choice.
Screen resolution: Based on the screen resolution it is to decide the number of rows .The screen will divide into n rows and n columns respectively .As per The screen size the value of n will be change.
Block selection: After user will select the blocks for placing the fingers. This position will be save into the mobile database.

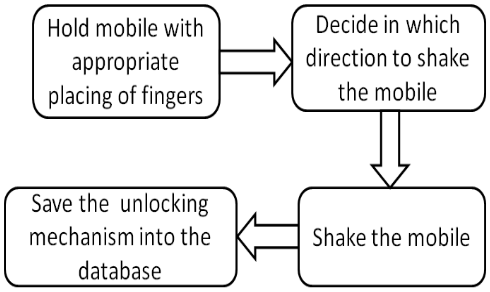
Hold mobile with appropriate placing of fingers
Decide in which direction to shake the mobile
Shake the mobile
Save the unlocking mechanism into the database

Fig: System Architecture 2

Mobile holding: The user holds the mobile with appropriate placing of fingers.
Decide the direction: User will decide in which direction to start shaking i.e left,right,up,down etc.
Mobile shaking: User will shake mobile phone.
Database: The shacking mechanism will save into the mobile database.

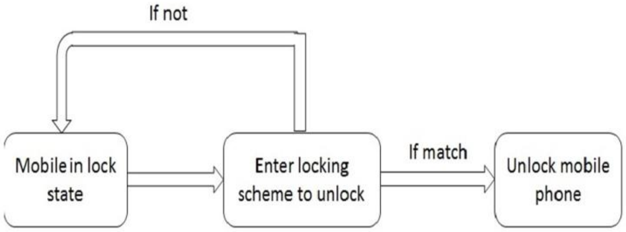

Fig:System Architecture 3

For unlocking mobile phone, user has to give correct locking scheme .The given locking scheme is correct the mobile will unlock

V. CONCLUSION

New application is used NextGenLock for Smart phone devices which is based on two locking schemes of positioning fingers on screen with mobile shaking .In this we use a gaming sensor for detecting the shaking motion of mobile . NextGenLock reaches high level of security and robustness, and achieves good user experience. Here only top,bottom,left,right directions are recognised by sensor. In future , if the more effective sensors are develop in android smart phones then sensor will detect users hand waving action in any direction. This leads to a more secure locking scheme

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