# Prophone – An Android App

**Project report in partial fulfilment of the requirement for the award of the degree of Bachelor of Technology**

**In**

**COMPUTER SCIENCE & ENGINEERING**

**Submitted By**


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# CERTIFICATE

This is to certify that the project titled "**Prophone – An Android App"** submitted by **DEVYANK SHAW(University Roll No. 12016009001050), SOUTRIK CHAKRABORTY(University Roll No. 12016009001220), SAYAN CHAKRABORTY (University Roll No. 12016009001327) and ABHIRUP ROY(University Roll No. 12016009001694),** Student of UNIVERSITY OF ENGINEERING & MANAGEMENT, KOLKATA, in fulfilment of requirement for the degree of Bachelor of Computer Science & Engineering is a bona fide work carried out by them under the supervision and guidance of Prof. DEBKUMAR CHOWDHURY during 7th Semester of academic session of 2019-2020. The content of this report has not been submitted to any other university or institute for the award of any other degree.

I am glad to inform that the work is entirely original and its performance is found to be quite satisfactory.

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**Devyank Shaw**

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# TABLE OF CONTENTS

**Contents** **Page No.**


**Abstract..... 6**

**CHAPTER – 1: Introduction..... 7**

**1.1. What is Android?..... 7**

**1.2. How Android works?..... 7**

**1.3. Architecture of Android…….. 8**

**CHAPTER – 2: Literature Survey……..9**

**2.1 Existing apps…..……..... 9**

**2.2 Feedback of above existing apps……..... 9**

**CHAPTER – 3: Problem Statement ..... 11**

**CHAPTER – 4: Proposed Solution…….…….... 12**

**CHAPTER – 5: Experimental Result & Analysis…….…. 13**

**5.1 System Requirement…….....…….. 13**

**5.2 Installation…….…….13**

**5.3 Result Of Our Proposed Method……..…..……15**

**CHAPTER – 6: Conclusion & Future Scope ..... 16**

**References .....17**

# TABLE OF FIGURES

**Contents** **Page No.**

**Figure 1**..... **7**
**Figure 2**..... **8**
**Figure 3**..... **10**
**Figure 4**..... **11**
**Figure 5**..... **12**
**Figure 6**..... **14**
**Figure 7**..... **15**

# Abstract

When a person steal or gets a phone he/she generally switches off the phone and take the sim out of it. For which the original owner unable to locate his/her phone and become unsuccessful to recover it. To eradicate this problem or to minimize the rate of stealing we bring a new solution. Whenever the user wants to switch off or restart the phone then the user must have to give their security passcode. If the user gives correct security passcode then the user will able to switch off or restart their phone. If the user fails to give the correct security passcode thrice then a notification email along with image of the intruder and a navigation link in order to track the stolen phone will be sent to their alternative or security email id. Now the original owner can easily locate their phone by using the navigation link or Google's Find My Device app until the phone's battery is dead.

# 1. INTRODUCTION

Nowadays the most alarming problem is stealing of smartphones. Over 70 million smartphones are lost each year and 4.3 percent of company-issued smartphones are lost or stolen every year. The recovery percentage of mobile is only 7%. When a person steal or gets a phone he/she generally switches off the phone and take the sim out of it. For which the original owner unable to locate his/her phone and become unsuccessful to recover it. To eradicate this problem or to minimize the rate of stealing we bring a new solution. Whenever the user wants to switch off or restart the phone then the user must have to give their security passcode. If the user gives correct security passcode then the user will able to switch off or restart their phone. If the user fails to give the correct security passcode thrice then a notification email along with image of the intruder and a navigation link in order to track the stolen phone will be sent to their alternative or security email id. Now the original owner can easily locate their phone by using the navigation link or Google's Find My Device app until the phone's battery is dead. So, we bring here an android app which will protect the smartphones from being stolen or lost.

## 1.1. What is Android?

Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance, with the main contributor and commercial marketer being Google.

## 1.2. How Android works?

Android uses Linux for its device drivers, memory management, process management, and networking. However you will never be programming to this layer directly. The next level up contains the Android native libraries. They are all written in C/C++ internally, but you'll be calling them through Java interfaces.

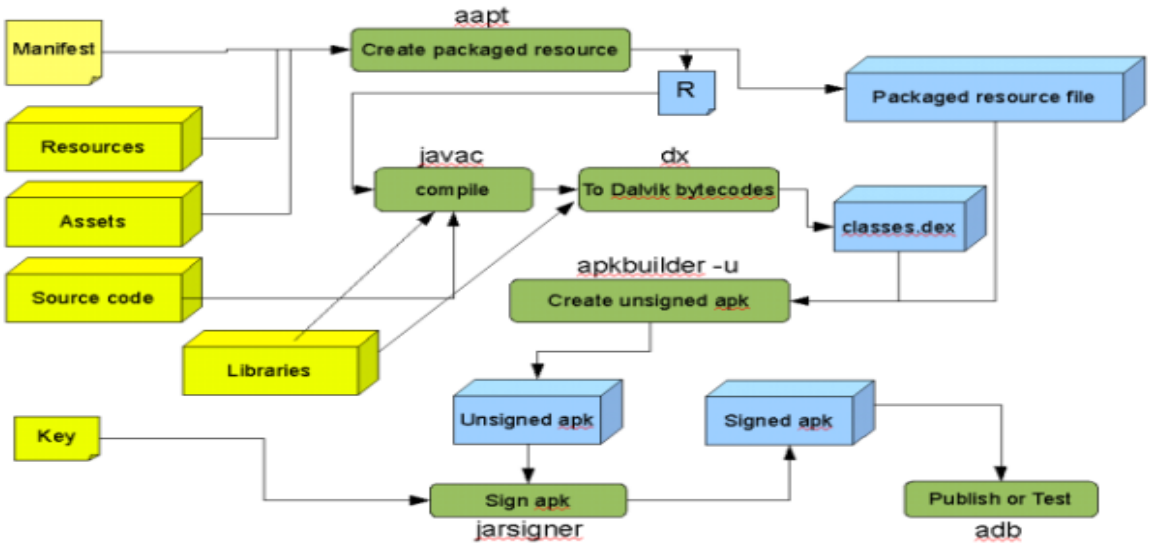



Figure 1: Android Internal Workings

### 1.3. Architecture of Android.

Android operating system is a stack of software components which is roughly divided into five sections and four main layers as shown below in the architecture diagram.

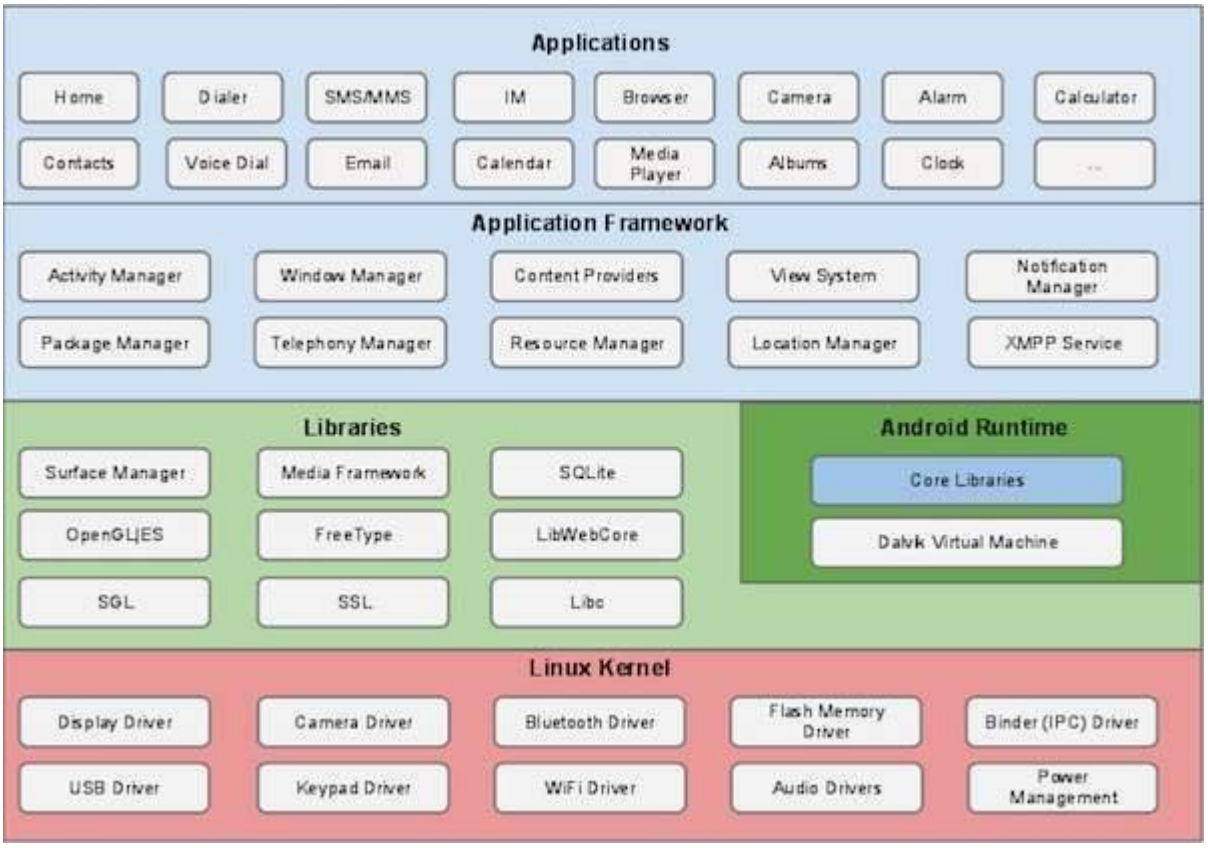



Figure 2: Android Architecture

# 2. LITERATURE SURVEY

In this segment, we found some existing app which provides the same service of protecting the phone from being stolen. But they are restricted to a particular Android version 7.0 or 7.1(Nougat).

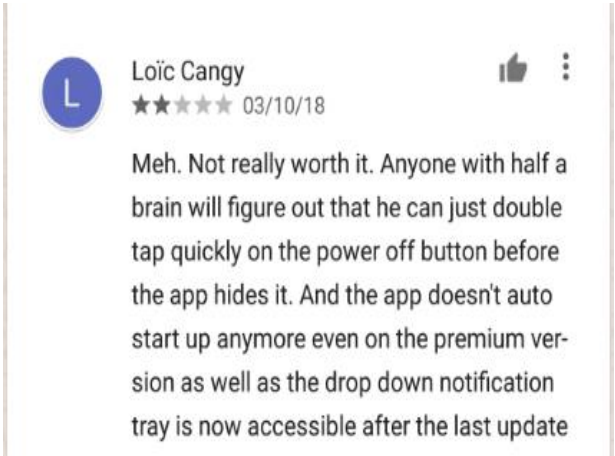
### 2.1 Existing Apps :

***Chronological Order Of Existing Apps:***

| Year | Author | Title | Methodology | Results & Advantages | Disadvantages |
|---|---|---|---|---|---|
| 2013 and 2018 | Nez android and AlpineSoft IT Solutions Pvt Ltd. | Smart Lock-Screen Protector and Lock Screen Protector | Foreground Service | 1. Enable the app to run in background.<br>2. Enable the alarm if thief tries to shutdown phone.<br>3. Auto Start makes the app run on startup.<br>4. Selfie is taken if the thief tries to switch off. | 1. Restricted to a particular Android version 7.0(Nougat).<br>2. No notification email.<br>3. No customer support.<br>4. All features don't work properly. |

Table 1: Chronological order of Existing Apps

### 2.2 Feedback Of Above Existing Apps :



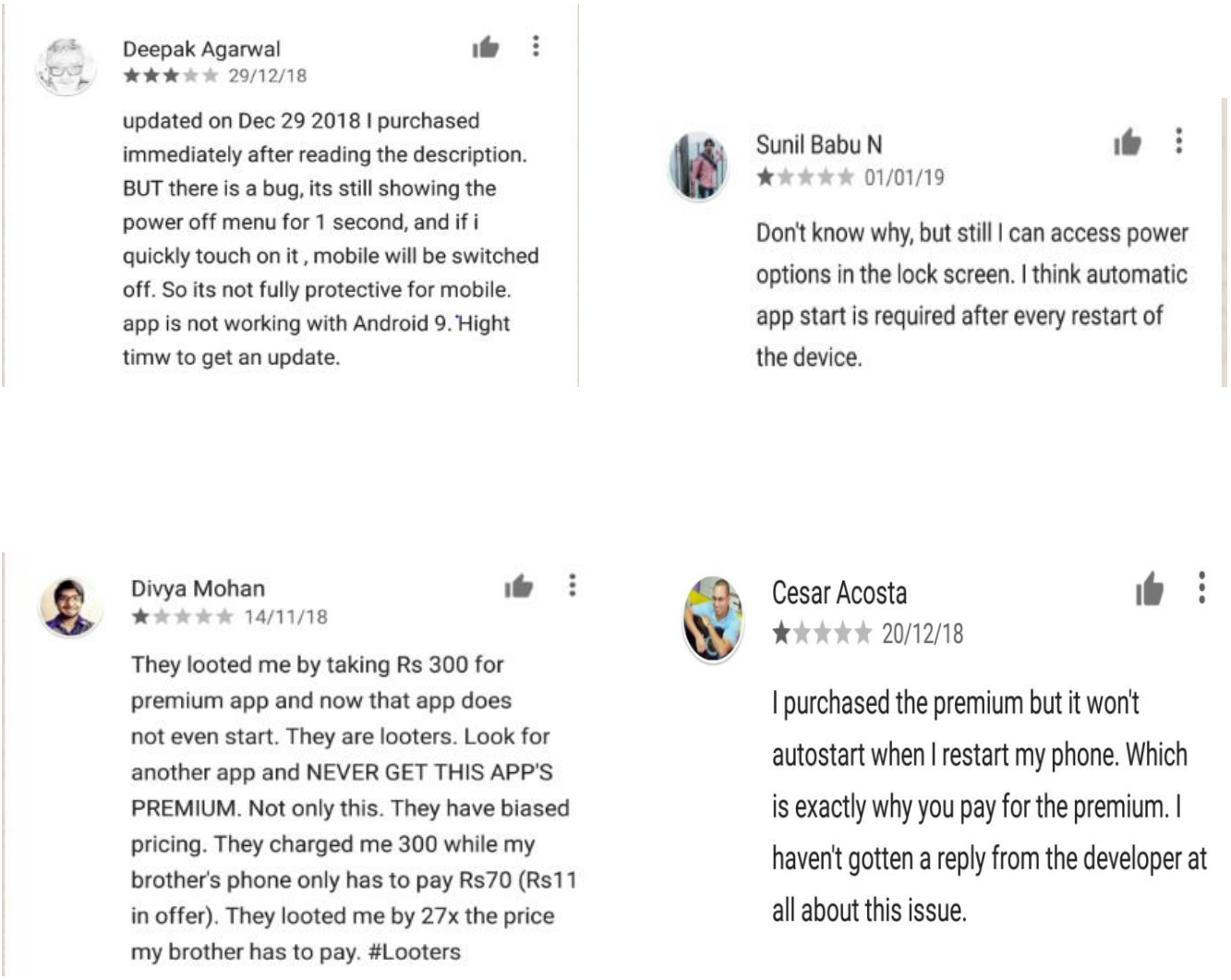




Figure 3: Feedbacks

# 3. PROBLEM STATEMENT

When a person steal or gets a phone he/she generally switches off the phone and take the sim out of it. For which the original owner unable to locate his/her phone and become unsuccessful to recover it. To eradicate this problem or to minimize the rate of stealing we bring a new solution. Whenever the user wants to switch off or restart the phone then the user must have to give their security passcode. If the user gives correct security passcode then the user will able to switch off or restart their phone. If the user fails to give the correct security passcode thrice then a notification email along with image of the intruder and a navigation link in order to track the stolen phone will be sent to their alternative or security email id. Now the original owner can easily locate their phone by using the navigation link or Google's Find My Device app until the phone's battery is dead.


https://www.businessinsider.in/tech

Figure 4: Stolen Places

## 4. PROPOSED SOLUTION:-

Broadcast Receivers simply respond to broadcast messages from other applications or from the system itself. These messages are sometime called events or intents. For example, applications can also initiate broadcasts to let other applications know that some data has been downloaded to the device and is available for them to use, so this is broadcast receiver who will intercept this communication and will initiate appropriate action.

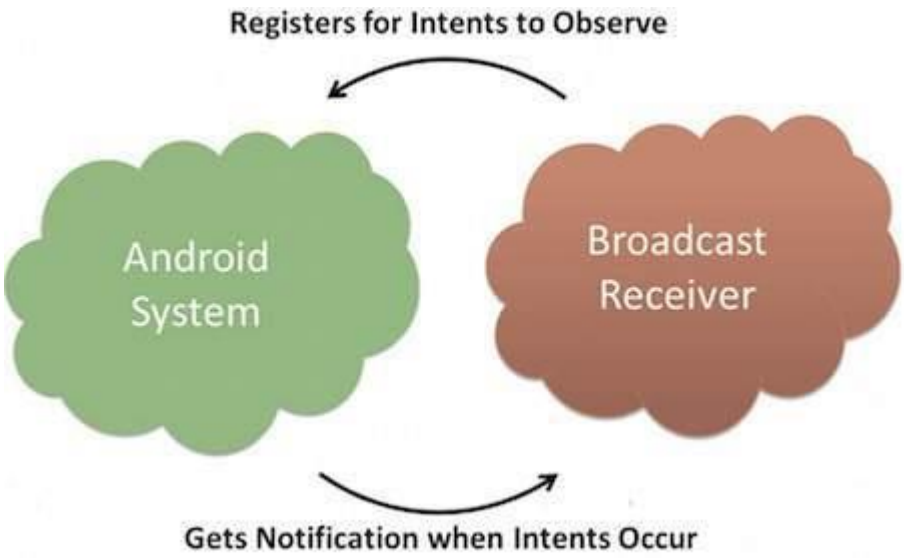



Figure 5: Working of Broadcast Receiver

An application listens for specific broadcast intents by registering a broadcast receiver in *AndroidManifest.xml* file. Consider we are going to register *MyReceiver* for system generated event ACTION_BOOT_COMPLETED which is fired by the system once the Android system has completed the boot process. Now whenever your Android device gets booted, it will be intercepted by BroadcastReceiver *MyReceiver* and implemented logic inside *onReceive()* will be executed.

We have used the below event constants for opening the app as a lock screen and for the auto restart.

- **android.intent.action.BOOT_COMPLETED**

  This is broadcast once, after the system has finished booting.

- **android.intent.action.ACTION_SCREEN_ON**

  This is broadcast once, after the system's screen has turned on.

***The restraints of our method are:***

- Battery Saving mode or smart battery saving mode must be off.
- Default lock screen must be removed and changed to swipe. As we are providing lock screen through our app.
- Needs to allow the background data or battery access for this app.
- Internet and GPS connection must be on always to work the app properly.

## 5. EXPERIMENTAL SETUP & RESULT ANALYSIS:-

With the help of existing application of this type and the customer feedback of theirs. We had implemented the features and are ready for production. They are as follows:-

1. Alarm will be ring at the highest volume of the phone
2. Picture and Updated location will be sent to the Security email address.
3. The application will work as a Security Lock Screen in the phone.
4. Phone will not be switched off until the battery is totally dead.
5. Notification bar, Volume, Home, Back and Recent buttons all will be blocked.
6. Owner's identity will be displayed in the lock screen.
7. If somehow the phone is switched off, it will be auto restart and the app will run automatically in the background.
8. An additional feature One tap lock is provided in the app for easier access to the power button.

### 5.1 SYSTEM REQUIREMENTS

- Android version 4.0 or above.
- Samsung and Huwaei devices are not eligible.

### 5.2 INSTALLATION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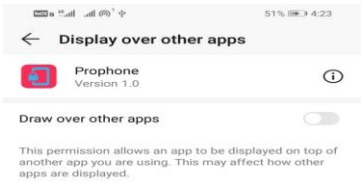


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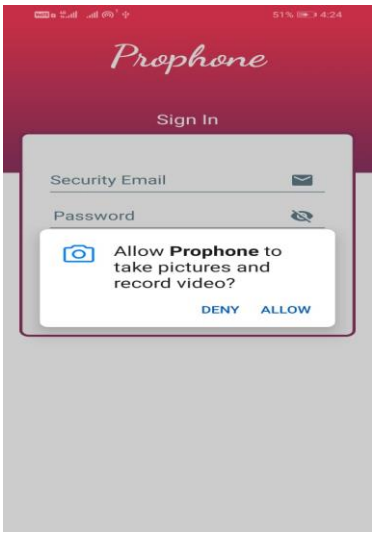


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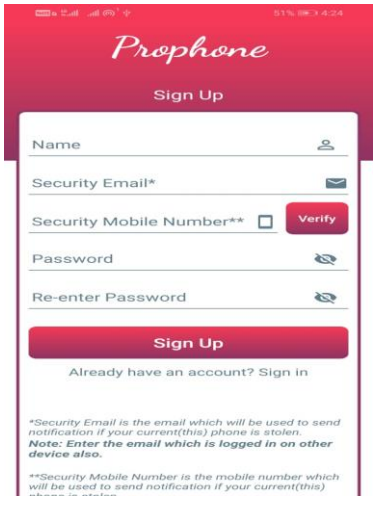


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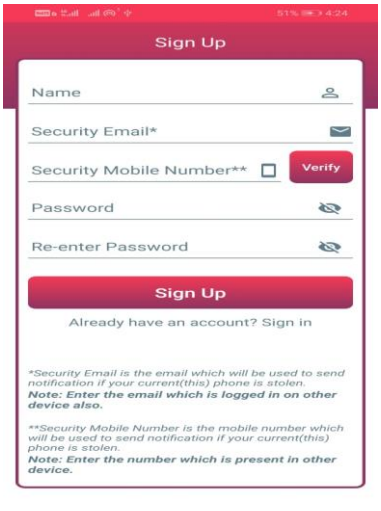


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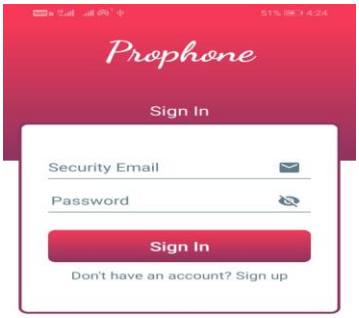


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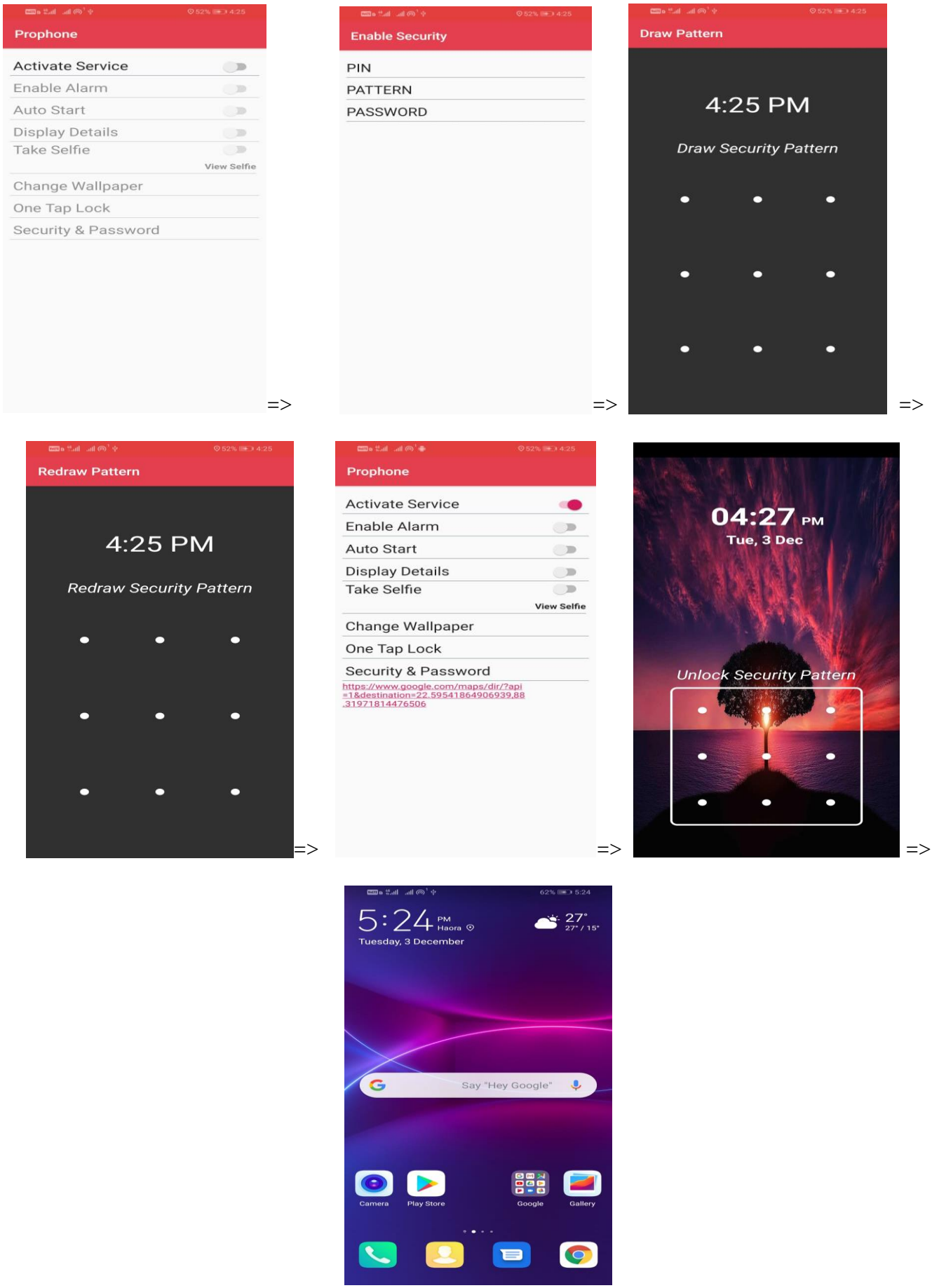
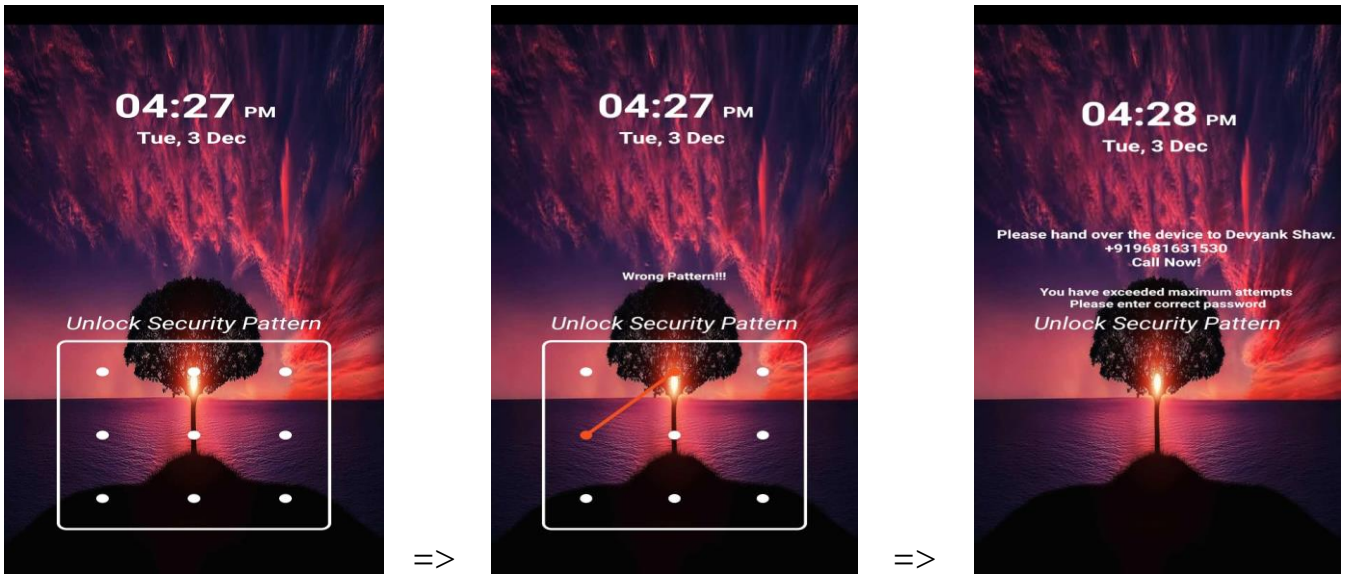



Figure 6: Installation Images

## 5.3 RESULT OF OUR PROPOSED METHOD

In this section, we have shown the results of the features working on the phone. After observing the result and analysis we have found that the features that we have implemented is excellently performing well in each smartphones. This proposed method works only on Android smartphones now.




We will be sending an email along with the image taken and the navigation link in order to notify and track it, after three wrong attempts in the lock screen. This part has not been implemented yet but it will be soon.


https://www.google.com/maps/dir/?api=1&destination=22.594959729080838,88.31775391862291

Figure 7: Result Images

## 6. CONCLUSION & FUTURE SCOPE:-

There is nothing to conclude, phone stealing is a very big problem in nowadays, so our services will be carry on. We have so many plans regarding this project, we will comeback with this as soon as possible. We will charge a very minimum amount of money to run this application, not for our profit because of our technical affordability and assurance services. We have a very strong hope that this application can make difference in near future. This application will be a grand success and we will do something for the safety of our society.

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