Security for Lost and Misplaced Devices

Gokul P, A Shivakrishna, Narashima Reddy, Anandkumar Simhadri, Shiv Kumar V
Department of Computer Science and Engineering
Rao Bahadur Y Mahabaleswarappa Engineering College, Bellary, Karnataka, India

Abstract: *In this fast moving world, people are always in rush. People usually carry few necessities with them, and we cannot separate mobile phones from these. For one or another reason, it sometime happens that people misplace or lose the thing, and one cannot easily afford losing the thing like mobile. People always want the mobile to be with them. Purpose behind developing the iLocate is to provide its user to track their lost or misplaced mobile.*

Keywords: Mobile, lost, theft, GPS, Application, Android

I. INTRODUCTION

In this fast moving world, people are always in rush. People usually carry few necessities with them, and we cannot separate mobile phones from these. For one or another reason, it sometime happens that people misplace or lose the thing, and one cannot easily afford losing the thing like mobile. People always want the mobile to be with them.

Purpose behind developing the iLocate is to provide its user to track their lost or misplaced mobile.

Mobile Application Overview: This application will help an Android user to track the lost or misplaced mobile. If user misplaces a mobile which is currently in silent/vibrate mode, he may change the phone mode to 'ringing' by using another mobile with facility of sending text message. Also if user loses mobile he may find current GPS location of his mobile through another mobile. It notifies mobile user on SIM change via text message on another predefined mobile. This application also restricts unauthenticated change in App-Settings by using password protection.

Key Features:

- Whitelist : White list is a list of numbers which are allowed to send the codewords on user's mobile. We will refer them as Trusted Users or Whitelist.
- Configuring the commands : Go to Codeword setup from main menu.Define Ringer codeword and GPS codeword. Ringer codeword will cause user's device to switch to General profile and make it Ring for some time, upon receiving Ringer codeword.
- SIM change setup : This feature allows you to define mobile numbers which will receive notification if SIM change takes place on iLocate user's mobile.
- Changing application pass code : Once you are logged in, you can change your password. To change password, go to Application settings from main menu, simply replace password with new one. You must select password that is at least 4 characters long.
- Connecting using internet : Application may be extended to make a use of internet to allow the device to be located through another device by trusted users (already registered with application) and to track movements of user's device.

II. PROJECT PURPOSE

The purpose of a project focused on security for lost phones or misplaced mobile devices is to help users protect their personal information and prevent unauthorized access to their data. Losing a phone or having it stolen can be a frustrating experience, but it can also be a serious security risk if the phone contains sensitive information like passwords, banking details, or personal emails.The goal of such a project would be to provide users with tools and features that they can use to secure their devices and protect their personal data, even in the event that their device is lost or stolen. This might involve developing new security features or improving existing ones, as well as educating users about best practices for securing their devices.Ultimately, the aim of a security project for lost phones or

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misplaced mobile devices is to help users feel more confident in their ability to protect their personal information, and to minimize the potential damage that could result from a lost or stolen phone.

III. LITERATURE SURVEY

[1]"A Mobile Security System for Lost Phones Using Remote SIM Card Authentication" by Sang-Min Lee, Sung-Min Lee, and Jae-Young Kim (2015).

[2]"Development of an Android Application for Tracking Lost Mobile Phones" by Roshni A. Mehta, Hiral H. Shah, and Jayesh J. Patel (2016).

[3]"Mobile Phone Security: A Study of Android Lock Patterns" by Marte Løge and Sule Yildirim Yayilgan (2016).

[4]"Development of an Anti-Theft System for Mobile Devices" by Aman Agrawal, Kshitiz Gupta, and Gaurav Kumar (2016).

[5]"Design and Implementation of an Android-Based Mobile Phone Anti-Theft System" by Rujun Liu, Jianhua Ma, and Hong Shen (2017).

[6]"Lost and Found: Exploring the Efficiency of Find My Phone Applications" by Rachel Greenstadt and Damon McCoy (2017).

[7]"Mobile Device Security: A Study of Android Pattern Lock and PIN Password" by Nor Asiah Omar, Mohd Faizal Omar, and Nurul Nadiah Zamri (2018).

3.1 OBJECTIVE

The objectives of security for lost phones or devices are to protect the sensitive and personal information that may be stored on them, prevent unauthorized access to the device and its data, and ensure that the device is rendered unusable to anyone who may have found or stolen it. Some specific objectives of security for lost phones or devices may include. In short, system will be providing following features:

- Remote Wiping
- Password Protection
- Data Encryption
- Location Tracking
- Anti-Theft Features

3.2 SYSTEM OVERVIEW

The application includes the following :

Misplaced mobile a simple text message from a friend's mobile will make users mobile to ring (even if it is on Silent mode) if phone is misplaced within reachable range.

Pass code is a keyword that user of application sets when he uses the application for the first time. This code is then used by user for subsequent login to the application.

White list is a list of mobile numbers of user's friends. User may add to, remove from or change numbers defined in this list. Once user adds a number to this list, this number is recognized as a Trusted Number by iLocate, and user of this number is a Trusted User. This means that only a trusted user can send codewords from his/her trusted mobile so that

A friend is a trusted user whose number exists as an entry in white list. Friend and trusted user are names that may be used interchangeably.
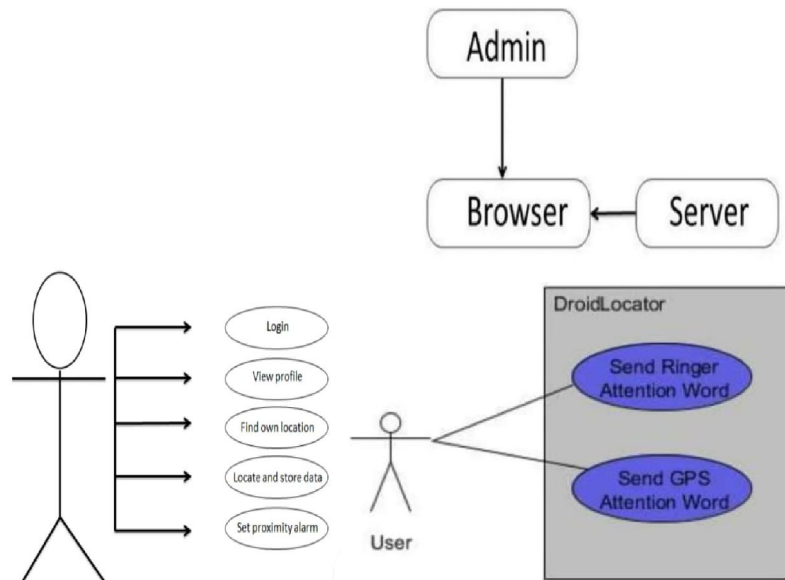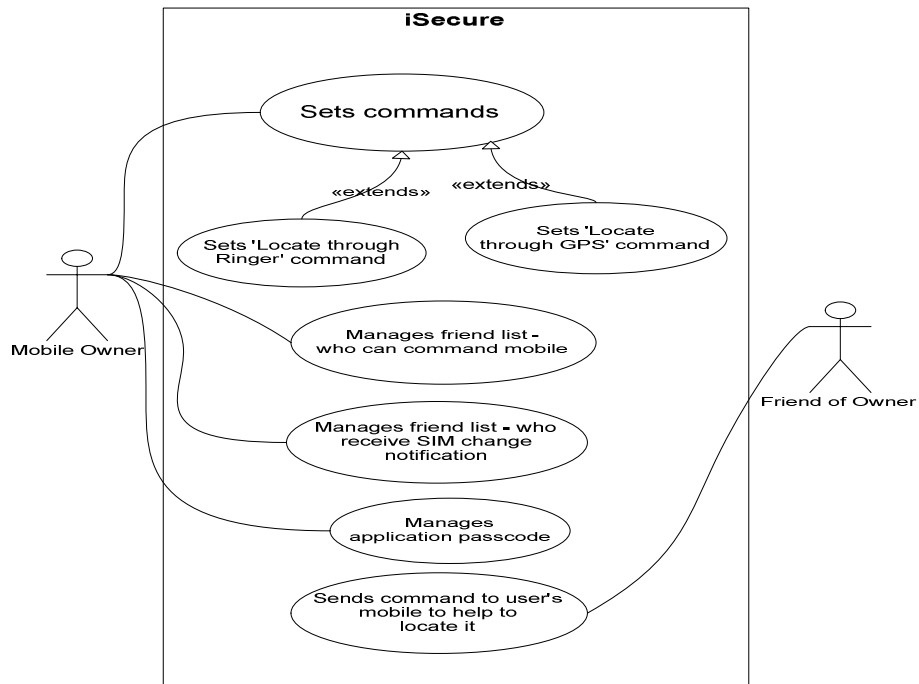
A codeword is a keyword that user has defined for taking a desired action when his/her mobile receives that codeword to his/her mobile, from a trusted number. Locate has currently two kind of codewords,

There are two code words :

GPS Codeword

Ringer Codeword

SIM change notification receiver is another list of mobile numbers of user's friends. User may add to, remove from and change numbers defined in this list

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219

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IV. METHODOLOGY

1. Setting application pass-code at first use
2. Application prompts when user selects small pass
3. Codeword setups- to set/modify codewords
4. Whitelist- list of trusted user numbers
5. SIM change setup- to add/update SIM change notification receiver
6. Prompts when user leaves pass-code setup activity

7. Prompts when any updates are made
8. Alerts when user leaves any activity without saving details
9. Received message on friend's mobile when he sends codeword to get for user's location information
10. User's location is shown on the map when friend clicks on the link sent as a message through iLocate
11. Defined friends receives notification as a text message when user's mobile's SIM is changed.

V. RESULTS OBTAINED

First, the application prompts the user to setup a passcode. After setting up the codewords and whitelisted numbers, prompts are made when any updates are made.The user receives a message on a friend's mobile when he sends a codeword to get the user's location information. When the codeword gps is used, the location is shown on the map when the friend clicks on the link sent as a message through the application. Defined friends receive notification as a text message when the user's mobile sim is changed, and the user can find the misplaced phone using the codeword ringer, which makes the phone ring even when the phone is in silent mode.
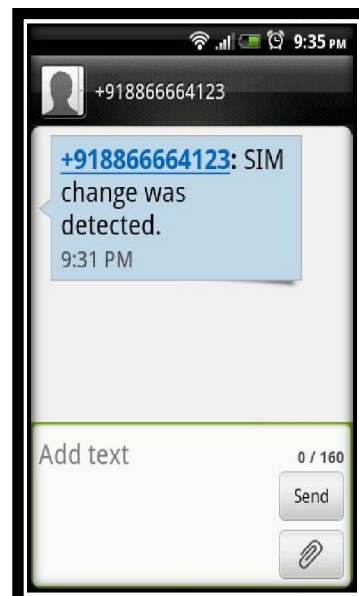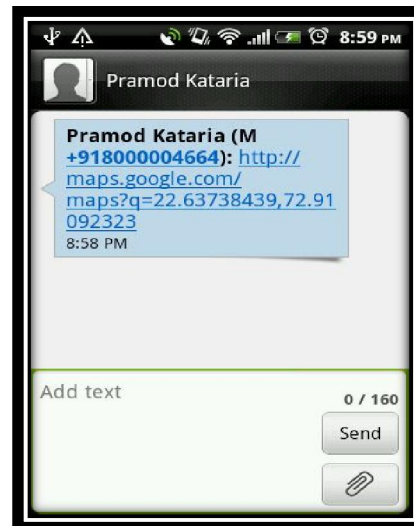
VI. CONCLUSION

App security for misplaced or lost devices has been successfully implemented. completed. The goal of the system is achieved and problems are solved. The project is developed in the manner which is user friendly and required help is provided at different levels. The primary goal is to provide security for the lost or misplaced devices.It tracks the mobiles which are misplaced or lost. A simple text message from a friend's mobile will make users mobile to ring(even if it is on Silent mode) if phone is misplaced within reachable range. When a user lose his mobile a simple text message from friend's mobile will help user to receive his phone's GPS location.

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