FIREBASE BASED GPS ENABLED ANTI THEFT MOBILE SECURITY ANDROID APPLICATION

P.Vijay Bhaskar Reddy, Associate Professor , Dept.of Master of Computer Applications, Narayana Engineering College(Autonomous), Gudur.SPSR Nellore, AP, India
C.Venkata Bhargav, PG Scholar, Dept.of Master of Computer Applications, Narayana Engineering College(Autonomous), Gudur.SPSR Nellore, AP, India

ABSTRACT

The main objective of this project is to develop a mobile based application for higher end and costly android mobile users. And make the mobiles safe from thief, even if they have stolen the mobile, user can identify and get their mobile easily. When the mobile User loses his mobile phone, in many parts of the world there is no mechanism in place which can help the owner of the mobile to recover his mobile phone. Here we propose a system which is autonomous and intimates with the owner via Email and SMS when it detects SIM change. As soon as the thief steals the mobile phone, he tries to change the SIM card.
This means he has to switch off the phone and change it and then reboot it. On boot completion the system has to detect SIM card change and intimate the owner about it. When the alternative Email id receives Mail with the thief's image and his location or postal address of the mobile phone where it is present currently. This project is mainly developed with the help of Android. This application was interconnected using GPS functionalities for mobile tracking process.

KEY WORDS: Send Data to Firebase,Get Location

INTRODUCTION

Anti Theft mobile security is an application which will notify when you trigger it. This application has registration module where user can register them self using their name, phone no, email id, and password. And you will get access to web application as well as app access. If one fine day your phone gets lost then you will have to login into web application and trigger the lost phone button. And then app will send the GPS co-ordinated to the web application using which user can track the phone. And when user changes simcard the application will automatically run itself and send co-ordinates to the web application.

The motivation of this project is to develop an android app which will notify when you trigger it. This application has registration module where user can register them selname, phone no, email id, and password. And you will get access to web application as well as app access.

STATEMENT OF THE PROBLEM

The problem lies with existing system is if mobile lost the mobile can track based on IMEI number by police men after made a complaint. If the IMEI number is not available the user loose his hope about phone which is more tedious process and time consuming.

OBJECTIVE OF STUDY

- ✓ Anti Theft Mobile Security is an application which will notify you when you trigger it.
- ✓ This application has registration module where user can register them self using their name, phone no, email id, and password. And you will get access to web application as well as app access.
- ✓ If one fine day your phone gets lost then you will have to login into web application and trigger the lost phone button.
- ✓ And then app will send the GPS co-ordinated to the web application using which user can track the phone.
- ✓ And when user changes simcard the application will automatically run itself and send co-ordinates to the web application.

- ✓ And this using web application user can track down the thief.

REVIEW OF LITERATURE

Researchers have been researched anti-theft device or system that can help prevent, monitor and track vehicle theft. Many of those researches focuses on the hardware part of the device or system. For example uses Radio Frequency Identification (RFID) technology to link the driver's key and the ignition system so if the key with ignition system is not present, the engine will not start despite the keylock has been bypassed or broken. RFID technology was also used by . Zhixiong uses computer vision technology to locate and recognize the driver's face, identify the unauthorized driver.

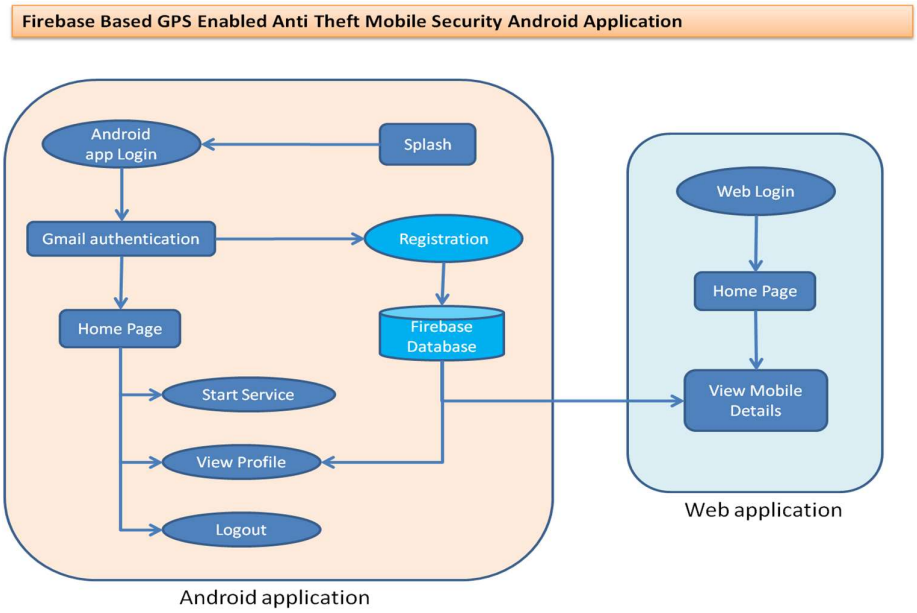
It uses active IR illuminator to acquire driver's images in real time so that when unauthorized driver is driving, it will alarm and send the unauthorized driver's image to the car owner or police through CDMA (Code Division Multiple Access) or GPRS (General Packet Radio Service) networks. Another protection method is by using sensor to verify driver by analyzing driving pattern . This mechanical feature can differentiate drivers' driving behaviors. Fingerprint sensor can also be used to verify the driver's identity . The fingerprint should be taken first before starting engine. If vehicle's location is changed without fingerprint verification, a message will be sent to owner's handphone.

Anti-theft device or system mostly uses the combination of Global Position System (GPS) and Global System for Mobile (GSM). GPS is used to locate the vehicle location while GSM is used to communicate with the vehicle for easier finding after a theft attempt. The device or system is mostly made by combining a microcontroller with GPS and GSM. Other than combining GPS, GSM and microcontroller, added RFID technology to the anti-theft device or system.

RESEARCH METHODOLOGY

A smart anti-theft VTS was developed. Just like the other VTS, it also has tracking/monitoring function. But has added location saving function to Amazon web service so the VTS can be an Internet of Things. The device and system developed by also has fuel control and driver authorization to do emergency stop by closing the fuel line. This function can be controlled from a smartphone application. Most anti-theft VTS researches discussed previously are intended for car stealing, Hossain proposed a design of low cost anti-theft sensor for motorcycle. The sensor will detect the movement of handlebar and will send a warning SMS to the owner.

ARCHITECTURE



MODULES:

- Android App Module
- Web Application Module
- Firebase Module
- GPS Module

DESCRIPTION:

Android app module

In this module, we developing android application, in which user register and login to the system.Here, he can start the services and permit to access the GPS coordinates and check sim information of the device.When the user trigger finds my mobile through web application, this application automatically send the information to web application.

Web App Module

In this module, we developing web application to find the mobile location when the mobile is lost.This system provides user friendly interface to get mobile location.If the sim changed it collects mobile location coordinates and changed sim number through this application.

Fingerprint Authentication Module

Firebase Auth is a service that can authenticate users using only client-side code. It supports social login providers Facebook, GitHub, Twitter and Google (and Google Play Games). Additionally, it includes a user management system whereby developers can enable user authentication with email and password login stored with Firebase.

In this module, we create Database in the firebase and thus module is very useful to provide communication between Android application and web application to efficiently track the mobile when it lost.

GPS Module

GPS is a web service developed by Google. In this module, we use GPS to get location co-ordinates from mobile. This will help efficiently locate the mobile location.

RESULTS

The result analysis describes that the entire project was executed successfully and also having quality and performance by analyzing the flow of data and output screens. In my project the modules like Android, web app, GPS modules are independent modules. Because my project follows the top down approach and bottom up approach.

Application Framework

The Application Framework layer provides many higher-level services to applications in the form of Java classes. Application developers are allowed to make use of these services in their applications.

The Android framework includes the following key services −

Activity Manager − Controls all aspects of the application lifecycle and activity stack.

Content Providers − Allows applications to publish and share data with other applications.

Resource Manager − Provides access to non-code embedded resources such as strings, color settings and user interface layouts.

Notifications Manager − Allows applications to display alerts and notifications to the user.

View System − An extensible set of views used to create application user interfaces.

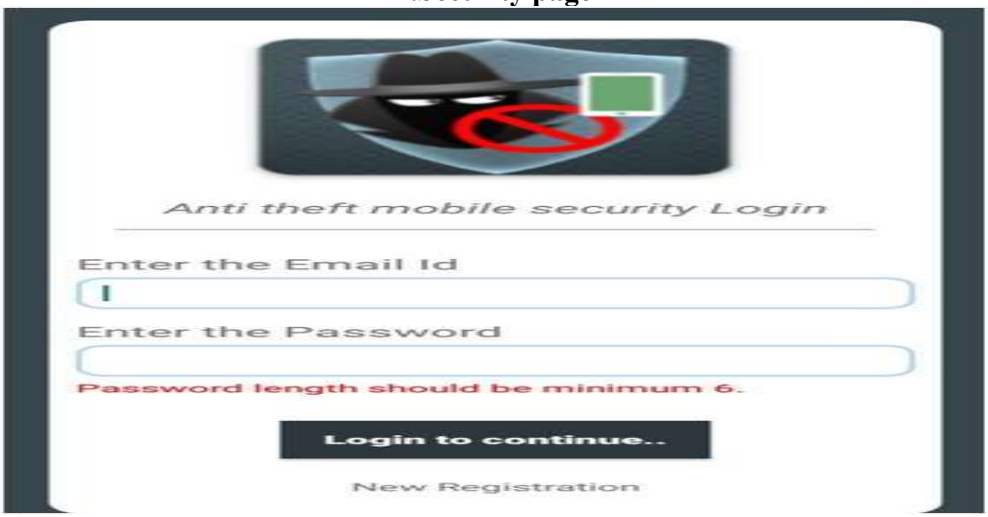
Sr.No	Components & Description
1	**Activities** They dictate the UI and handle the user interaction to the smart phone screen.
2	**Services** They handle background processing associated with an application.
3	**Broadcast Receivers** They handle communication between Android OS and applications.
4	**Content Providers** They handle data and database management issues.

OUTPUT SCREENS:

1.Splash Screen

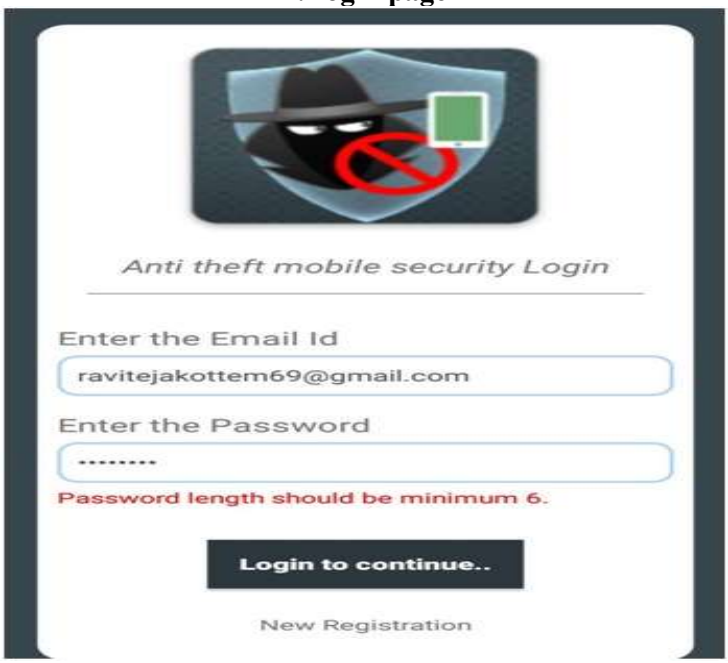
Loading... please wait...

2.Security page



3.Registration Page

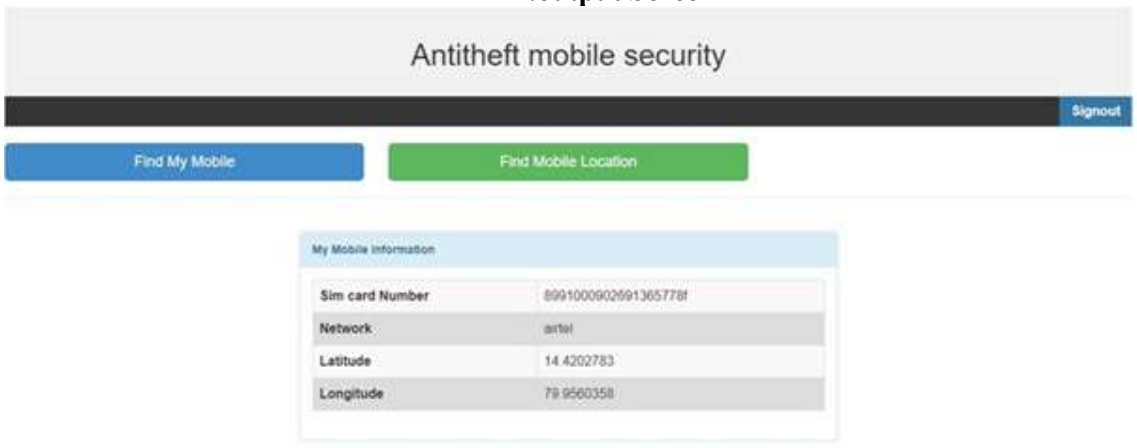
4.Login page



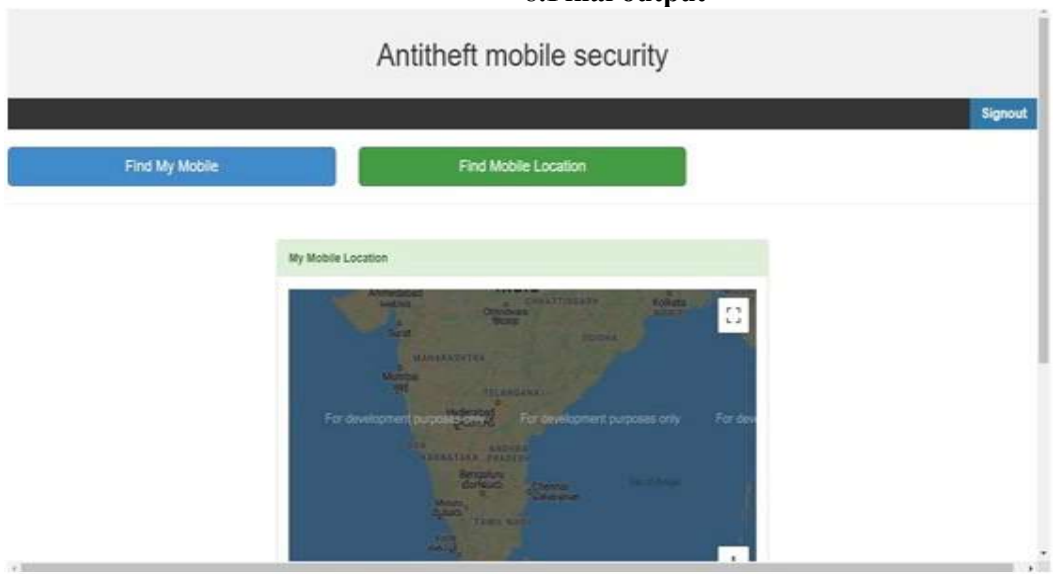
5.Settings

6.sign in mail loss mobile

7.output Screen



8.Final output



CONCLUSION:

In this project, i developing mobile anti-theft application, in which i implemented 2 applications. One is Android application and second one is Web Application. using this system, we can efficiently and effectively track the mobile location and Sim information when the mobile is lost. In future i consider the performance and other issues at server. To solvethese issues we explore optimization techniques. Nowadays android based device as many sensor like sensor axes, base sensors, and composite sensors. Implementing this sensor in anti-theft-application based on android device will make android device more secure. Future will try to use more sensor, video recording**.**

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