ALERTO: ADVANCED VEHICLE SECURITY SYSTEM WITH THEFT AND ACCIDENT NOTIFICATION VIA IOT DEVELOPMENT

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A Thesis Presented to the
Faculty of the College of Science
Technological University of the Philippines
Ayala Blvd., Manila

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science in Information Technology

June 2024

INTRODUCTION

The application can also detect anomalies inside the vehicle and send notifications to the owner. The system will act as a deterrent against car theft, protect valuable assets, and provide instant notifications. It will integrate with smartphones to ensure owners can receive notifications and stay updated on their vehicle?s status even when they are not nearby. It empowers individuals with a greater sense of peace, ensuring that their vehicles are protected. The study can be a reference to impart knowledge that the future may use as baseline material, and inspiration to comply with future studies. The study of developing an advanced vehicle security system can serve as a valuable resource for Android developers and technology enthusiasts. The anti-theft and accident notification system will be developed, built with IOT integration, addresses this problem. The system offers a comprehensive solution to vehicle theft and accident alerts. It can also be used to provide timely assistance in case of an accident. The study aims to describe the background of the study where the introduction is briefly explained.

METHOD

The project was mainly contained with an Arduino device, a GPS module, a GSM module, and a Raspberry Pi, with the help of an IOT. The Arduino microcontroller, an impact sensor, and the use of an Android smartphone are the main components of the project. The project was evaluated using a step-by-step approach. The alarm frequency for each criterion was estimated using the information from the respondents and then assessed whether it was thought to be a good security system. The ALERTO system was created to increase vehicle security and decrease vehicle theft incidents in the city. The device is always on as long as there is a battery in the vehicle. It makes it possible to remotely monitor, analyze, and control the system in real-time, increasing the overall efficacy of the solution. The procedure on how to operate the device is as follows: Insert the SIM card into the mobile phone. Check if theSIM card receives a signal in the mobile. Study was acceptable by looking at the frequency.

RESULTS

The ALERTO system is an advanced vehicle security system designed to provide theft and accident notifications through IoT (Internet of Things) development. The system makes use of global positioning to allow owners to remotely track their vehicles. It also has an emergency alert which means that users can swiftly notify their contacts by pressing a dedicated button or sending an SMS. The legal and regulatory issues related to the implementation of the system are not addressed in the thesis. The project was evaluated in terms of Functionality, Aesthetics, Workability, Durability, andEconomy and Safety. The grand weighted mean for all the criteria was 3.52 interpreted as ?Highly viewpointsAcceptable? Activating the anti-theft toggle button can enable alarm activation, engine immobilization, and notifications to the owner in the event of unwanted access. The system is trackable using the website. The pre-installed SIM card is categorized by the owner's emergency contacts in unfortunate event of an accident. Instead of rating the system to function, the study focused on the context of vehicle theft instances in the Philippines. The hardware components of the car detection system are designed for a one-time use. The system could not determine whether the accident is minor or major. Write the firmware code that details the functionality of the device. He or she can remotely access the device and turned on and off the vehicle. The device has an SOS function. It has a working website. It is possible to test the system on a car. It can be used to detect a car accident. It could be used for other purposes.

DISCUSSION

The ALERTO project was designed and developed to fulfill its intended functions. The project was successfully designed with the following features: Anti-Theft System, Accident Notification, and Real-Time Location. Future researchers can explore more cost-effective ways to implement the system. The system could be useful for further securing private and confidential facilities. The developed project was rated as Highly Acceptable in terms of functionality. It was designed to be used in both public and private vehicles. It is intended to be a vehicle security system, featuring a dashboard requiring internet connectivity.