ANTI THEFT SECURITY SYSTEM FOR VEHICLE

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ABSTRACT:

Arduino based vehicle detection and positioning system is a technology that enables locationand detection of vehicles in a specific location, such as a parking lot. The system works byusing sensors that are embedded in the ground to detect the presence of a vehicle, and thensendsthis information to an Arduino board.

The Arduino board processes the data and sends it to a display unit or a mobile application,where the user can view the location of the vehicle. The sensors used in the system can eitherbe ultrasonic, infrared, magnetic or any other technology that is suitable for the specificapplication.

The system is designed to be compatible with various types of vehicles, including cars,motorcycles, and trucks. The system can be used in different applications, including parkingmanagement,traffic monitoring, and fleet management.

The Arduino based vehicle detection and positioning system offers many benefits, includingimproved efficiency, reduced costs, and enhanced safety. By accurately tracking the locationof vehicles, the system can help to reduce congestion, improve traffic flow, and prevent accidents.

INTRODUCTION:

Arduino based vehicle detection and positioning system is a modern technology that utilizesthe power of the Arduino microcontroller to detect and track the movement of vehicles in a particular area.This system is designed to help in monitoring the flow of traffic, analyzing the parking lot usage, and providing real-time data on the location and status of each vehicle. The system uses various sensors, such as ultrasonic sensors, infrared sensors, and other high-tech sensors to detect vehicles and accurately position them. This technology has become very popular in recent years, as it provides a cost-effective and efficient solution for vehicle tracking and management. In this project, we explore the fundamental concepts of an Arduino based vehicle detection and positioning system, its components,and how it works. Overall, the

Arduino based vehicle detection and positioning system is a flexible and efficient technology that can benefit a wide range of industries and applications.

LITERATURE SURVEY:

1. "Development of an Arduino-based automatic car parking system using ultrasonic sensor "by AsyrafAzwanbinAli,NurFathiahLydiabintiMohdAzmi,NurKhalidahbintiAbdHakim,andMohdHelmibinIbrahim.Inthisstudy,anArduino-basedparkingsystemusingultrasonicsensorswas developed toassist drivers infinding vacant parking spaces.

2. "AnArduino-basedreal-timevehicletrackingsystem"byBidaneK.S.,BhandariS.,Chalker

S.Inthisstudy,anArduino-basedreal-timevehicletrackingsystemwasdevelopedusingGPSandGSMmodulestotrack thelocationofavehicleandsendittoa remote server fordisplay.

3. "Arduino-based embedded system for vehicle detection and recognition" by D. Dey, R. K.DebnathandS.K.Singh.ThispaperdescribesthedevelopmentofanArduino-basedembeddedsystemforvehicledetection andrecognitionusingcamerasand imageprocessingtechniques.

4. "Arduino-based lane departure warning system" by G. S. Rubaiyat Islam, Shahriar Sazzad,Shariar Md. Najib, and Matin Shahriar. This study presents the development of an Arduino-basedlanedeparturewarningsystemthatusessensorsandalgorithmstodetectwhenavehicleisdrifting from its lane.

5. "AnArduino-basedvehiclepositioningsystemusingBluetoothtechnology"byA.Srivastava,G.P.Raju,andV.A.Ramesh.Thispaperpresentsthedevelopmentofan Arduino-based vehicle positioning system that uses Bluetooth technology to communicate with asmartphoneapplication for real-time tracking andmonitoring.

6. "Design of Smart Vehicle Detection and Alert System Based on Arduino" by SrimathiVenkatarathinam and Rajalakshmi Prithiviraj. This paper presents a design of an Arduino-based vehicle detection and alert system using ultrasonic sensors. The system detects thepresenceof vehiclesandalertsthedrivers withflashing lightsand awarning buzzer.

7. "Intelligent Parking System using Arduino and Ultrasonic Sensors" by N. Nithya and R.VinothKumar.ThispaperpresentsanArduino-basedintelligentparkingsystemusingultrasonic sensors to detect the presence of vehicles. The system guides the driver to theavailableparking slots in a parking lot.

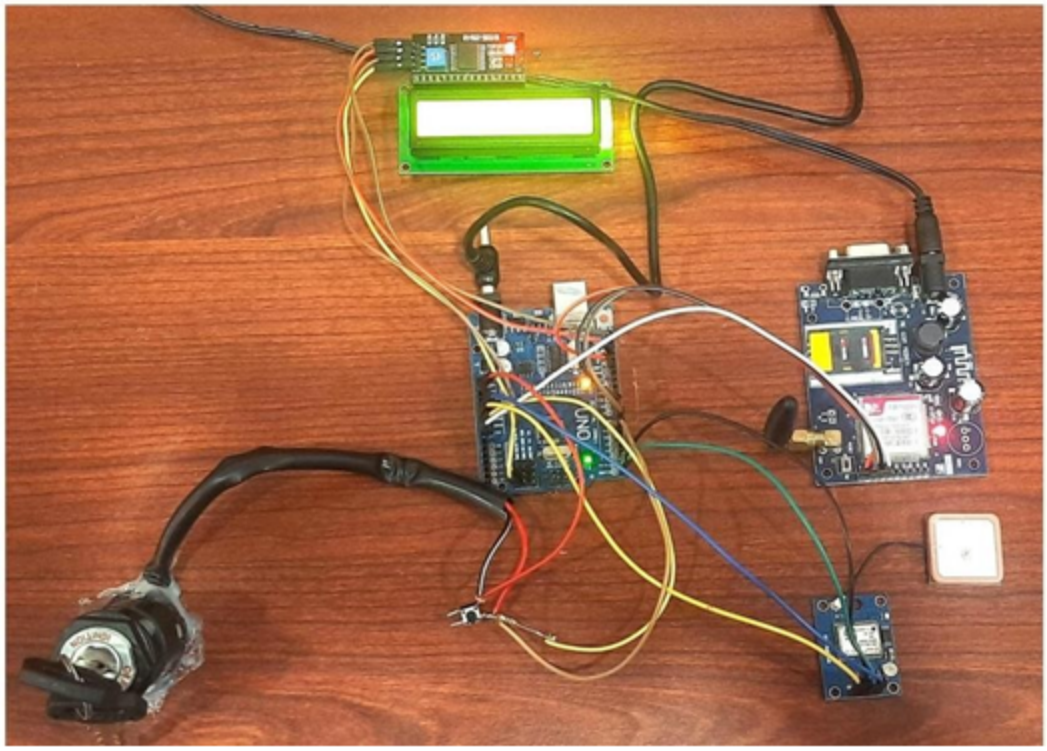
8. "VehiclePositioningSystemusingArduinoandGPSReceiver"byO.M.Diallo,S.B.Faye,and D. D. Sarr. This paper proposes an Arduino-based vehicle positioning system that uses aGPS receiver to determine the location of a vehicle. The system can track the location of thevehicleand transmit thedata to aremotemonitoring station.

9.

"SmartTrafficManagementSystemUsingArduinoandZigbeeTechnologies"byAnandK.NayakandVinayakV.Hunni.ThispaperpresentsanArduino-basedsmarttrafficmanagementsystem that uses Zigbee technology to communicate between traffic signals and a centralizedcontrolsystem.Thesystemprovidesreal-timetrafficdataandcontrolsthetrafficsignalsbasedonthe trafficconditions.

10. "Vehicle Detection and Tracking System Using Arduino and OpenCV" by Jithin Raju andJathan James. This paper presents an Arduino-based vehicle detection and tracking systemusing OpenCV computer vision library. The system uses a camera to detect and track thevehicleson theroad andprovides real-timetrafficdata.

PROPOSEDSYSTEM:



RESULTS:

Fig: LCD displays ”Sending location to base”

Fig: LCD displays “location sent”

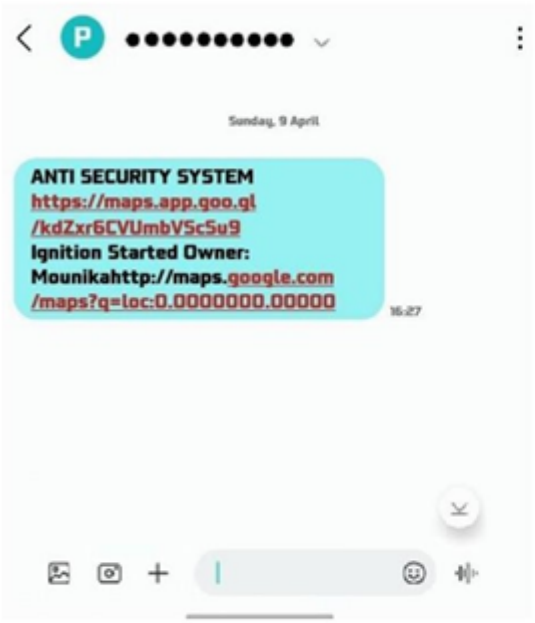


Fig: SMS received by the mobile text“Local”

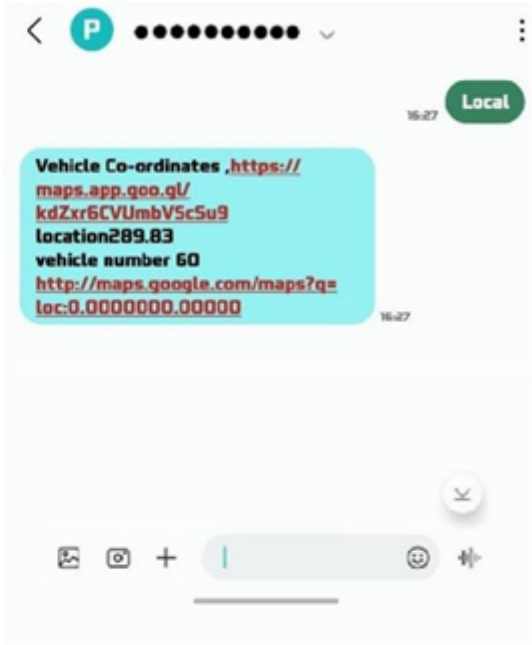


Fig: SMS received after theSendingthe

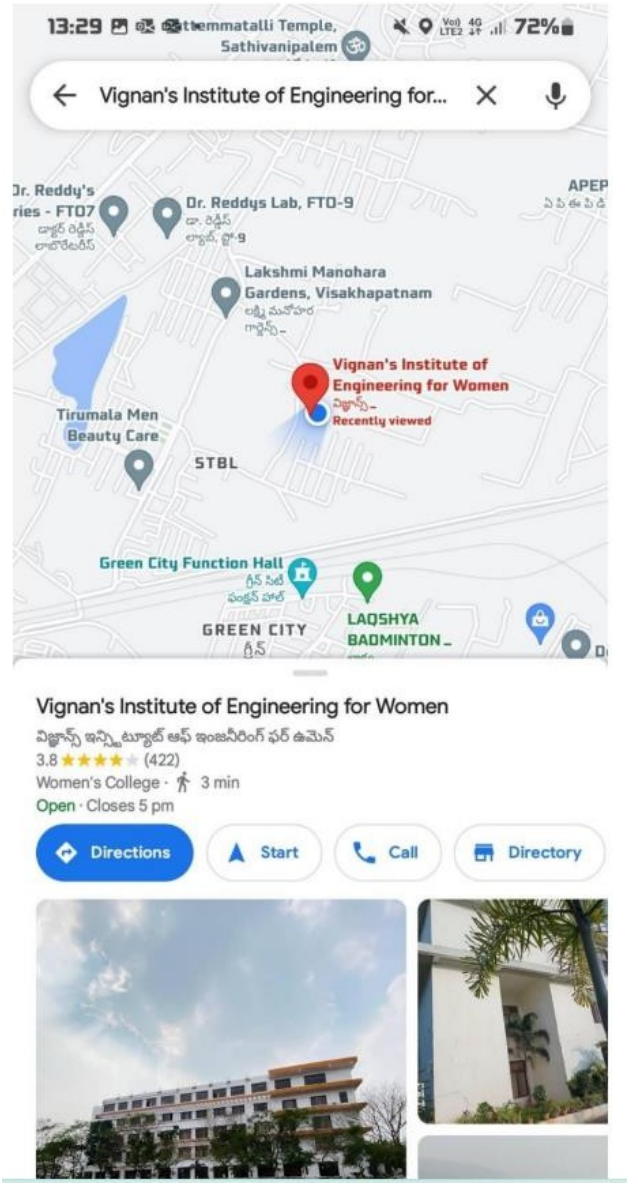


Fig: Navigating the vehicle

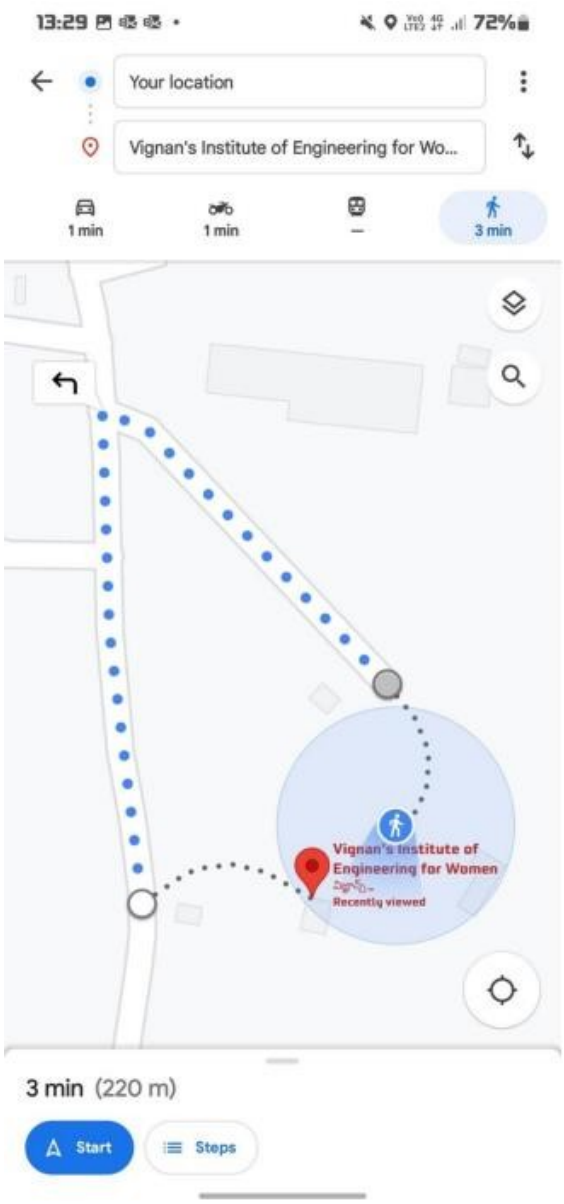


Fig: Tracking the vehicle

CONCLUSION:

The project titled "ARDUINO BASED VEHICLE DETECTION AND POSITIONING SYSTEM" is a model for vehicle tracking unit, with the help of GPS receivers and GSM modem. Arduino Based Vehicle Detection And Positioning System resulted in better tracking of your vehicle. Vehicle tracking both in case of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity.So in the coming year, itis going to playamajor rolein ourday-to-day living.

FUTURE SCOPE:

We can increase the accuracy up to 3m by increasing the cost of the GPS receivers.We canuse our kit for detection of bomb by connecting to the bomb detector. With the help of highsensitivity vibration sensors we can detect the accident.Whenever vehicle unexpectedly hadan accident on the road with help of vibration sensor we can detect the accident and we cansend the location to the owner, hospital and police.We can use our kit to assist the traffic. Bykeeping the kits in the entire vehicles and by knowing the locations of all the vehicles. If any body steals our car we can easily find our car around the globe.

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