International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 08 Issue: 03 | March - 2024 SJIF Rating: 8.176 ISSN: 2582-3930

Vehicle Theft Intimation and Accident Detection through SMS Using IOT

D.Sudheer[1], Pulamarasetti Shankar[2], Bhogapurapu Pavan Krishna[3], Sonu Priya Majji [4], Mahanthi Srikanth[5]

[1]*AssistantProfessor,*[2-5]*B.Tech Students, LIET*

[1,2,3,4,5] Computer Science and Information Technology, Lendi Institute of Engineering and Technology,Vizianagaram

---

Abstract -Vehicle theft is a common problem due to which people have lost their vehicles, faced many difficulties to find them, and sometimes failed even after a lot of struggles. To overcome this problem, we introduce the "VEHICLE THEFT INTIMATION ACCIDENT DETECTION THROUGH SMS USING IOT" with which we can find the vehicles which were either theft or met with an accident without any strenuous efforts. A using NODE MCU, MotorL289N, KEY SYSTEM and GPS module it is made easy to identify and track the vehicle. This project aims to authenticate and inform the details of the vehicle to the owner through SMS. If the owner is known by that person he can give access through a return reply- motor on otherwise he can turn off the engine by replying – motor off. This is possible using Authenticator App . If the vehicle is theft by any chance, we can detect the vehicle using a GPS where it is placed in the device. By this GPS, the owner can also trace the location of the vehicle in terms of latitude and longitude using GPS.

Key Words:Node Mcu, GPS module,MotorL289N Key System.

1.INTRODUCTION

Nowadays, security has become one of the critical issues in the present world. People always want their things to be secured at any cost. People work a lot in their daily life, and most of them work in different places. We have many tools and software designed to ensure the safety of our belongings. The security issue has become one of the alarming problems in society. The researchers and vehicle manufacturers throughout the world have been working on various theories to come up with a device that helps to curb this menace. In this project we implementing the GPS based tracing system. Here, whenever the vehicle is on we get the message to our registered mobile number through the app and we get the message whenever the vehicle met with an accident.

When a vehicle is stolen, it becomes hard to locate and track it, which considerably decreases the chances of recovering it. But here we can get the message of exact location of the vehicle with latitude and longitude of the Vehicle. We can easily trace the vehicle by sending the message to the device "get location". After sending this message it reply back the location of the vehicle. We can handle the vehicle remotely everywhere in the city. We can lock the engine through the SMS whenever the vehicle is stolen. The theft disables to switch on the vehicle. We can easily send the command "turn off" then the vehicle automatically turned off.

The GPS gets the area of the vehicle that met with an mischance and gives the data back. This data will be sent to a versatile number through a message. This message will be gotten utilizing web show within the circuit. The message will allow the data of longitude and scope values. Utilizing these values the position of the vehicle can be evaluated. Modem performs tweak amid transmission and performs demodulation amid gathering.

2.LITERATURE SURVEY

Numerous analysts carried out their thinks about on mishap discovery framework. Aishwarya S.R clarified an IoT based vehicle mishap avoidance and following framework for Night drivers. In this paper gives Eye Squint Checking Framework (EBM) that alarms the subject amid state of drowsiness.[1] Sadhana B have clarified Shrewd helmet-intelligent security for motorcyclist utilizing raspberry pi and open CV. The thought is gotten after knowing that there's expanded number of lethal street mischances over the a long time. This extend is outlined to present security frameworks for the motorcyclist to wear the head protector properly.[2] Sarika R. Gujar clarified progressed Inserted Framework of Vehicle Mischance Location and Tracking Framework. The most objective of this framework is to begin with distinguish the mischance area and call for the crisis services. Vehicle mischance location is conceivable with the assistance of sensors.[3] Shailesh Bhavthankar clarified Remote Framework for Vehicle Mishap Discovery and Detailing utilizing Accelerometer and GPS. In this paper, Accelerometer sensor is utilized to identify crash and GPS allow area of vehicle. In case of any mishap, the framework sends robotized message to the preprogrammed number such as family part or crisis therapeutic administrations through GSM. [4] Jagdish A. Patel clarified Raspberry

Pi based shrewd domestic. This paper points at planning a fundamental domestic robotization application on Raspberry Pi through Meddle camera as security reason and the calculation for the same is executed in created in python environment which is the default programming environment given by Raspberry P

3.BLOCK DIAGRAM

The block diagram of the proposed system consists of the following components: Node mcu, GPS module, IR sensor, Motor L289N, Buzzer, PowerSupply (12v DC).
The above components are integrated as per the block diagram given in fig 1.

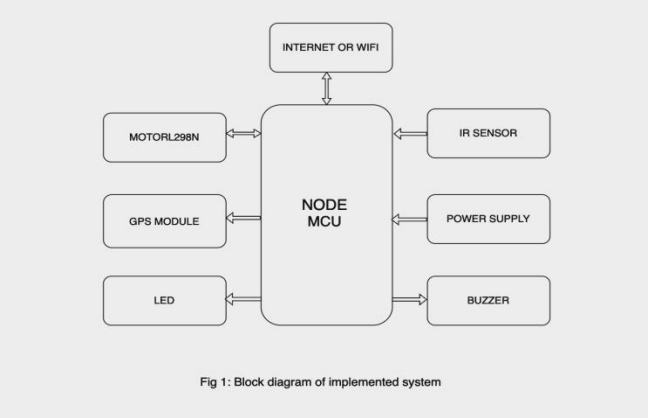
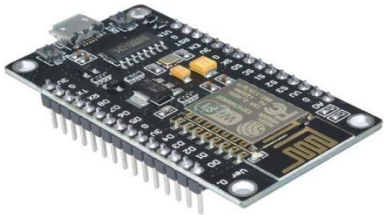


Fig 1: Block diagram of implemented system

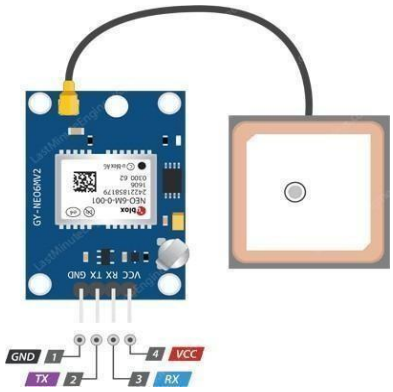
3.1 NODE MCU

NodeMCU is an open source IoT platform. It includes both firmware which runs on the ESP8266 Wi-Fi SoC, and hardware which is based on the ESP-12 module.The ESP8266, designed and manufactured by Express if Systems, contains the crucial elements of a computer: CPU, RAM, networking (WIFI), and even a modern operating system and SDK. That makes it an excellent choice for Internet of Things (IoT) projects of all kinds. However, as a chip, the ESP8266 is also hard to access and use. You must solder wires, with the appropriate analog voltage, to its pins for the simplest tasks such as powering it on or sending a keystroke to the "computer" on the chip. You also have to program it in low-level machine instructions that can be interpreted by the chip hardware.



3.2 GPS MODEM

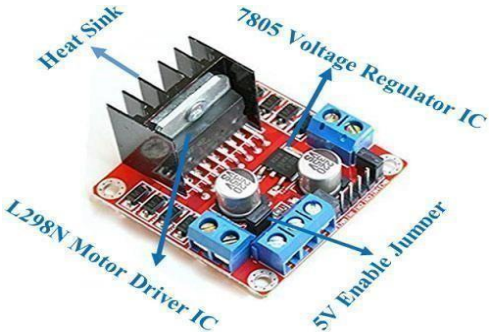
The Global Positioning System (GPS) is a space based global navigation satellite system (GNSS) that provides reliable location and time formation in all weather and times anywhere on the globe. The GPS satellites act as a reference point from which receivers on the ground detect their position. The fundamental navigation principle is based on the measurement of pseudo ranges between the user and four satellites. we receive the location in terms of latitude and longitude.



3.3 MOTOR L293

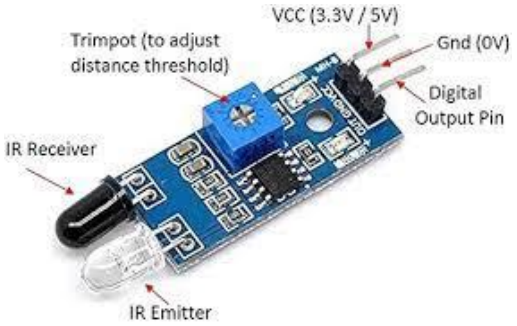
This L298N Motor Driver Module is a high-power motor driver module for driving DC and Stepper Motors. This module consists of an L298 motor driver IC and a 78M05 5V regulator. The L298N motor driver is based on the H-bridge configuration (an H-bridge is a simple circuit that lets us control a DC motor to go backward or forward.), which is useful incontrolling the direction of rotation of a DC motor. L298N Module can control up to 4 DCmotors, or 2 DC motors with directional and speed control. It is a high current dual full H- bridge driver that is constructed to receive standard TTL logic levels. It can also be used to control inductive loads. It can control both the speed and spinning direction of two DC motors. To have complete control over the DC motor here we have to control its speed and rotation direction. These can be achieved by combining these two techniques

- PWM- Controlling speed
- H-Bridge-For controlling rotation direction



3.4 IR SENSOR

IR sensor is a device that uses infrared technology to detect objects or changes in the environment. IR sensors can detect a wide range of physical properties such as temperature, motion, and proximity. IR sensor modules are widely used in various electronic applications such as remote control, motion detection, proximity sensing, and more. They are commonly used in consumer electronics, robotics, and automation systems.



4. HARDWARE IMPLEMENTATION

[1] In this project we are using a Node MCU. When the system is switched on, LED will be ON indicating that the power is supplied to the circuit. When the IR sensor senses any obstacle, they send interrupt to Node MCU. The GPS receives the location of the vehicle that met with an accident and gives the information back. This information will be sent to a Authorized person through the APP. This message will be received using internet present in the circuit. This message will give the information of the vehicle is met with an accident. Then We can send the command of "get location" then we get the location of the vehicle in terms of latitude and longitude. Using these values the position of the vehicle can be estimated. The received data is given to the Node MCU.

[2] In this project we implemented another one i.e whenever the vehicle is on we get a message through a App. If the owner is known by that person he can ignore it otherwise he can turn off the engine by replying – motor off. This is possible using App . If the vehicle is theft by any chance, we can detect the vehicle using a GPS where it is placed in the device. By this GPS, the owner can also trace the location of the vehicle in terms of latitude and longitude using GPS Module.

5. CONCLUSION

The Proposed system uses the IOT for vehicle theft intimation and accident detection through SMS. In this project we have designed IOT based vehicle theft intimation through the App then we can trace the location using the GPS module and whenever the Accident occurs we got the message through the App then we can trace the location by sending the "get location" command. Hence IoT can revolutionize the way the system interact and respond for the variety of applications especially in case of traffic control.

6. ACKNOWLEDGEMENT

We would like to thank the Department of Computer Science and Information Technology, Lendi Institute of Engineering and Technology, Vizianagaram for helping us to carry out the work and supporting us all the time.

REFERENCES

[1] Aishwarya S.R, Ashish Rai, Charitha, Prasanth M.A, and Savitha S.C "An IoT based vehicle accident prevention and tracking system for night drivers" *proc. IEEE, vol.3, no.4, pp.2320-9798 2015*

[2] Sadhana B Shabrin, Bhagyashree Jagadish Nikharge, Maithri M Poojary and T Pooja, "Smart helmet-intelligent safety for motorcyclist using raspberry pi and open CV", *proc.IEEE,vol.03, no.03 pp.2395-0056 2016*

[3] Jagdish A. Patel, Aringale Shubhangi, Shweta Joshi, Aarti Pawar and Namrata Bari discussed on "Raspberry Pi based smart home", *Proc. IEEE, vol.6, no.3, pp.2321-3361 2016*

[4] Dr. pankaj Tomar and preeti Mehta focused on " An Efficient Management System based on Face Recognition using Matlab and Raspberry Pi 2", *Proc-IEEE, vol.3, no.5, pp.239 2016*

[5] T. Anitha and T. Uppalaigh focused on "Android based home automation using Raspberry pi", *Proc-IEEE, vol.04, no.01, pp-2351-8665* 2016

[6] Shailesh Bhavthankar and Prof. H.G.Sayyed discussed on" Wireless System for Vehicle Accident Detection and Reporting using Accelerometer and GPS", *Proc .IEEE vol.6, no.8, pp-2229-5518 2015*

[7] Md.Shaad Mahmud, Honggang Wang, A.M.Esfar-E-Alam and Hua Fang has focused on "A Wireless Health Monitoring System Using Mobile Phone Accessories", *Proc-IEEE,vol.1, no.99, pp-2327-4662 2016*

[8] Sarika R. Gujar and Prof. A. R. Itkikar has focused on "Advanced Embedded System of Vehicle Accident Detection and Tracking System", *Proc-IEEE, vol.5, no.2, pp- 2277 128X 2015*

[9] Zaobo He, Zhipeng Cai, Jiguo Yu, Xiaoming Wang, Yunchuan Sun, and Yingshu Li, has discussed on "Cost-Efficient Strategies for Restraining Rumor Spreading in Mobile Social Networks", *Proc-IEEE,vol.66,no.3 2017*

[10] Hyung-Sin Kim, Hongchan Kim, jeongyeuo Paek and Saewoong Bahk has discussed on "Load Balancing Under Heavy Traffic in RPL Routing Protocol for Low Power and Lossy Networks", *Proc-IEEE,vol.16, no.4, pp. 1536-1233 2017*