

Anti-Theft Two-Wheeler System Using IoT

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Abstract: According to NCRB NATIONAL CRIME RECORD BUREAU of India in 2020 more than 494 thousand cases of vehicles Theft were reported across the India. That's the very serious issue, and huge loss of money for ordinary citizens of the country. For that to save this enormous money of people who spend their hard-earned money to purchased their vehicles. We made a security system to Stop all this vehicle Thefts and prevent vehicles from being stolen. Our system is Named as "Anti-theft Two-Wheeler System Using IoT (internet of things)". In this system here is the security system which will alert a user from Theft and another one is GPS Live Location Tracking System we have created web server on nodemcu esp8266 and on that server we are displaying Google Maps to show real-time location with multiple location markers. You can set the interval from the code to update the GPS location on the google maps i.e. If you set the interval to 20 seconds (20000ms) then the location will update every 20 seconds. GPS Location tracker will track the live location of the vehicle, and will also give the location coordinates like latitude and longitude with date and time. We can see location Via smartphone through Google maps. To power up our entire circuit we build the supply circuit for ESP8266 NodeMcu Wi-Fi Module And security system to which alarm and the PIR (passive infrared sensor) sensor are connected. And our Neo 6M GPS MODULE is connected to the ESP8266 NodeMcu Wi-Fi Module. And our code is written in the language of the C++ programming.

Keywords: Node MCU ESP82662, GPS Module, Transistors, Voltage Regulator IC7805, Buzzer, PIR SENSOR, 5 Volt Power Supply DC, etc.

I. INTRODUCTION

Whenever a consumer buys a product, the joy created thanks to this new possession is in danger by the risk of loss or theft of the specific item. every year millions of motor vehicles are stolen worldwide, causing an enormous loss of capital. For instance, according to the insurance information institute, only in the USA, in 2019, about \$6.4 billion was lost to motor vehicle theft. Additionally, according to the international crime victim survey (ICVS) statistics, bicycle theft is four times more likely than automobile theft. Likewise, 70 million smartphones are lost or stolen every year worldwide. In China, 67.2 percent of respondents who participated in a national study, reported themselves as being victims of a bicycle theft within 2002–2007. This figure is more than double the rate (30 percent) reported from the international crime victim survey in be97.

Generally, vehicle population increases rapidly, while, at the same time, an exponential increase in vehicle theft takes place. so, to prevent this vehicle thefts we introduce our security system named as anti-theft two-wheeler system using IoT (internet of things). the following are the description of the system and their various aspects:

IoT (Internet of Things):

The internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the internet or other communications networks.

Internet of things has been considered a misnomer because devices do not need to be connected to the public internet, they only need to be connected to a network and be individually addressable. The field has evolved due to the convergence of multiple technologies, including ubiquitous computing, commodity sensors, increasingly

powerful embedded systems, and machine learning. Traditional fields of embedded systems, wireless sensor networks, control systems, automation (including home and building automation), independently and collectively enable the internet of things.

In the consumer market, IoT technology is most synonymous with products pertaining to the concept of the "smart home", including devices and appliances (such as lighting fixtures, thermostats, home security systems, cameras, and other home appliances) that support one or more common ecosystems, and can be controlled via devices associated with that ecosystem, such as smartphones and smart speakers. IoT is also used in healthcare systems. there are a number of concerns about the risks in the growth of IoT technologies and products, especially in the areas of privacy and security, and consequently, industry and governmental moves to address these concerns have begun, including the development of international and local standards, guidelines, and regulatory frameworks.

GPS (Global Positioning Device):

The global positioning system (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. GPS uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters. In fact, with advanced forms of GPS you can make measurements to better than a centimeter! in a sense it's like giving every square meter on the planet a unique address. GPS receivers have been miniaturized to just a few integrated circuits and so are becoming very economical and that makes the technology accessible to virtually everyone. these days GPS is finding its way into cars, boats, planes, construction equipment, movie making gear, farm machinery, even laptop computers. soon GPS will become almost as basic as the telephone.

Then the interconnection of the both esp8266 node MCU with GPS module as per made from the circuit diagram will complete our system. which will become the anti-theft two-wheeler system using IoT by which we can track the live location of our vehicle and also when thief tries to stole the bike or vehicle them security system will activate automatically in generates highly listenable audio signal through buzzer alarm due to which we can prevent the theft of our vehicle.

II. OBJECTIVES

1. Prevention From Vehicle thefts
2. Security purposes
3. Awareness about live location of vehicle
4. Save h money by preventing Thefts.

III. LITERATURE REVIEW

Bicycle theft has increased in the developing countries in the recent years. Being light and easy to hide, a stolen bicycle is often difficult to search. It has, therefore, become a pressing need to develop a low cost, easy to use solution to track the bicycles. DiChokro, proposed in this work, is a solution to that widespread problem of Bicycle theft and has two major components: a device and an android application-based tracking facility that can be availed through any smart phone. The device contains a GPS Module that sends the location of the cycle to the cloud, highly sensitive vibration sensor and a processor.

Users can search for the secured parking locations, track their parked bicycle through the android application that is connected to the device through the cloud. The vibration sensor installed in the device helps users to get informed if someone attempts to steal the bicycle. The proposed solution is very cheap (<\$30) and will be able to address the issue of bicycle theft. Design and implementation of vehicle tracking system using GPS technology and smartphone application and Googlemap.

This device with the help of GPS technology tracks and locates vehicles that are stolen. The vehicle is fitted with a device that consists of both GPS module. Whenever the user asks the vehicle for its location the GPS sends its co-ordinates through the module. The location of the vehicle is continuously updated to a database even when

the user doesn't ask for the co-ordinates. Whenever the user requests the co-ordinates are retrieved from the database and sent to the user. Alarm System in vehicles are one of the first safety devices invented to prevent theft. These devices detect motion all over the body of the vehicle. Even a small motion on the surface of the vehicle will tip of the alarm system. The alarm system makes loud noise to warn the owners of the theft taking place.

Antitheft systems that have been proposed for motor vehicles or other mobile assets use locating units installed in vehicles (e.g., GPS (Global Positioning System)) for positioning purposes, microprocessors for data Processing, GSM (Global System for Mobile Communications) or GPRS (Global Positioning Radio Satellite) units for data transmission, and batteries for power supply. The Question is whether the battery of such systems can be overcome, and, of course, it is directly dependent on the mobile provider. Another approach of antitheft technology, presented in, is more complex because it uses face recognition.

In a decentralized vehicle antitheft system using blockchain technology and smart contracts was proposed, aiming to improve the antitheft system's safety and data security by using a proper key That reduces the possibility of leakage of personal information. The main concept of a network of smart devices was discussed as early as 1982, with a modified Coca-Cola vending machine at Carnegie Mellon University becoming the first ARPANET-connected appliance,[11] able to report its inventory and whether newly loaded drinks were cold or not. [12]

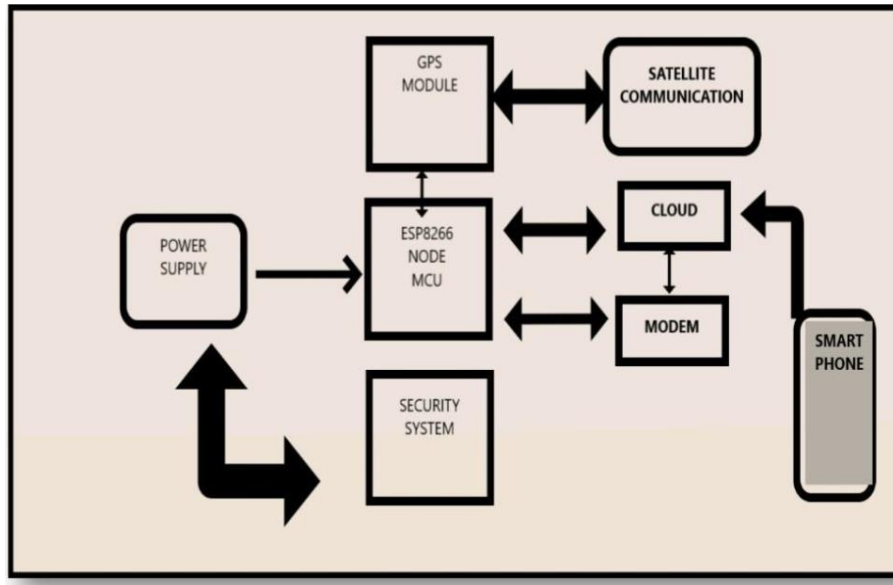
Mark Weiser's 1991 paper on ubiquitous computing, "The Computer of the 21st Century", as well as academic venues such as UbiComp and PerCom produced the contemporary vision of the IOT.[13][14] In 1994, Reza Raji described the concept in IEEE Spectrum as "[moving] small packets of data to a large set of nodes, so as to integrate and automate everything from home appliances to entire factories".[15] Between 1993 and 1997, several companies proposed solutions like Microsoft's at Work or Novell's NEST. The field gained momentum when Bill Joy envisioned device-to-device communication as a part of his "Six Webs" framework, presented at the World Economic Forum at Davos in 1999.[16]

The concept of the "Internet of things" and the term itself, first appeared in a speech by Peter T. Lewis, to the Congressional Black Caucus Foundation 15th Annual Legislative Weekend in Washington, D.C, published in September 1985.[17] According to Lewis, "The Internet of Things, or IoT, is the integration of people, processes and technology with connectable devices and sensors to enable remote monitoring, status, manipulation and evaluation of trends of such devices."

The term "Internet of things" was coined independently by Kevin Ashton of Procter & Gamble, later MIT's Auto-ID Center, in 1999,[18] though he prefers the phrase "Internet for things".[19] At that point, he viewed radio-frequency identification (RFID) as essential to the Internet of things,[20] which would allow computers to manage all individual things.[21][22][23] The main theme of the Internet of things is to embed short-range mobile transceivers in various gadgets and daily necessities to enable new forms of communication between people and things, and between things themselves. [24]

Defining the Internet of things as "simply the point in time when more 'things or objects' were connected to the Internet than people", Cisco Systems estimated that the IoT was "born" between 2008 and 2009, with the things/people ratio growing from 0.08 in 2003 to 1.84 in 2010. [25]

IV. SYSTEM ARCHITECTURE



V. FUTURE SCOPE

Due to High risk of vehicle theft and security purposes people would like to use our Anti-theft Two-wheeler system using IoT which have the ability to Stop theft of the vehicle in chip price.

ACKNOWLEDGMENT

The model design in such a way to solve the problems faced by consumer. By using such method, we can easily detect the fault and resolve it. It is highly reliable and locate the fault in three phase transmission line and also supposed to data storage. It works on real time so we maintain all data sheet and avoid the future problem in transmission line.

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BIOGRAPHY

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