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IOT Dependant Vehicle Monitoring and Parking Detection

Annarapu Keerthi[1], G. Sanjeev[2]
[1](M Tech student), [2](Asst. Professor), Department of Electronics and Communication Engineering, MallaReddy College of Engineering

Abstract: ***This is meant to create an innovative intelligent parking and monitoring device. Through a mobile screen, this project provides a streamlined parking scheme. Inside this device, we use IR obstruction sensors, which are associated with the Arduino Microcontroller. The parking slots status is in real time on the LCD screens.***
The monitoring systems of vehicles are used to relay and simulate data utilizing the Blynk platform. The system has been designed to calculate the difference between the vehicles and the Live Location Sensor with various driver assistance parameters such as eye blinking, alcohol consumption, and automobile parameters such as engine temperature. If two cars are drawn next to each other, an alert is sent to the mail through the Blynk program. The Ultrasonic sensor is mounted on the front of the vehicle. The temperature sensor is located in the engine component. Caution is sent to the mail as the temperature of the turbine varies. Eye blanks and alcohol sensors are used to confirm the driver's condition, such that a note is sent to the mail as to if the driver's status is unnatural. The designed unit takes control of the vehicles and supports the pilot.
Keywords: Arduino microcontroller, Blynk application, GPS, GSM, IOT (internet of things), LCD.

I. INTRODUCTION

This paper has established the automobile monitoring and car park detection method. This vehicle monitoring device includes an ultrasonic sensor at the front, which is sent to the mail through the Blynk program whether the truck draws near to the vehicle. In order to avoid sparks in the car temperature monitor, Blynk must be alerted to be sent to the automobile engine when the temperature within the vehicle increases. Caution is submitted where there is a significant volume of alcohol consumption. If a person senses somnolence, the IR sensor will be detected and the alarm will be issued and the driver will be in a dormant role. NodeMCU collects data from all sensors as it has a Wi-Fi module, all data is sent to the cloud via Wi-Fi, and processing takes place in the Blynk app. A vehicle monitoring and parking system based on Arduino, with global positioning system (GPS) and GSM modules, is used in this vehicle parking detection. The usage of a SIM modem for networking techniques here is a GSM modem. Installing or hiding the device in your car. You can conveniently monitor your stolen vehicle by cell phone after installation of this circuit. The school/college bus can also be monitored using this application.

II. PROPOSED WORK

The Internet of Things (IoT) is nothing more than an internet communication of devices (things). IoT is a breakthrough that stores all sensor data on the server and enables fast cloud access. We use Cloud not only to preserve data but also to analyze, capture, visualize data, and use a GPS module to manage the data. We also use cloud sensors and actuators for data storage. We use Blynk Framework to analyze data and to collect and visualize data from each sensor and data.
There is still a significant issue with car parking schemes in several multiplex systems. There are a number of ways to park a car but you have to search at all the roads to park a car. In addition, this method requires several men, for whom there is a lot of investment. Therefore it is important to create a system which directly shows which car park in any lane is vacant. The project consists of an infrarot transmitter and receiver system on each track and an LCD monitor outside of the car park entrance. Thus the entrant can see the LCD board for the next parking spot and enter the parking room directly.

In this paper the major building blocks are
1) Arduino Microcontroller
2) IR Sensors
3) LCD
4) GPS & GSM Module
5) Wi-Fi Module

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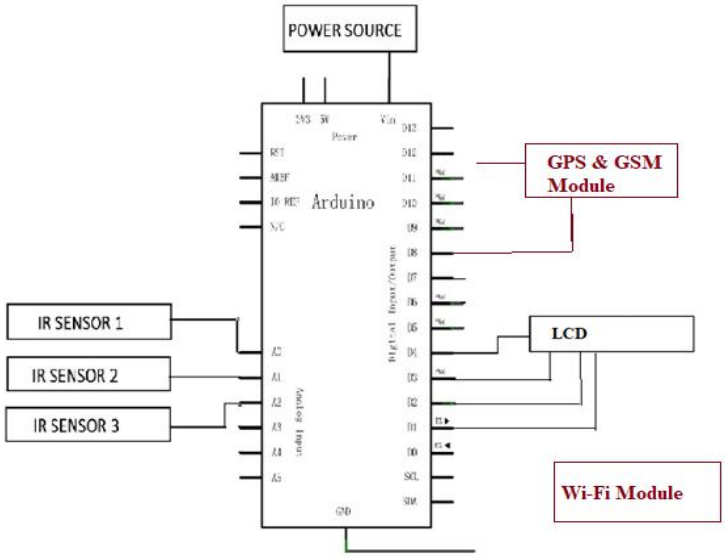

Figure1. Block Diagram

III.SOFTWARE DEVELOPMENT

In this paper here we will download, install and evaluate Arduino apps in this tutorial (also known as the Arduino IDE - short for Integrated Development Environment). Be sure you have all the correct tools until you jump on the tab for your operating system.

1) A machine (Windows, Mac, or Linux).
2) A microcontroller that is compatible with Arduino (anything from this guide should work).
3) USB A-to-B cable or any appropriate way to connect a compatible Arduino microcontroller.

A. Steps

1) Download the new update of the Windows Arduino app and head to the download tab.
2) Unload, unload and open the Arduino folder to check that indeed, certain files and sub-folders are still inside. The configuration of the file is crucial, so don't transfer files unless you really know what to do.
3) Strom up your arduino with a USB cable (or an FTDI adapter if you are using an Arduino pro) attach your Arduino board to your device.
4) The ON' labeled Lead should be clear. There was a mistake (This shows the placement of the power LED on the UNO).
5) You need to disable the driver signature if you run Windows 8, so please review the Windows 8 portion. You'll want any drivers to update whether you're operating Windows 7, Vista, or XP, so go to the following sections: Windows 7, Vista and XP.

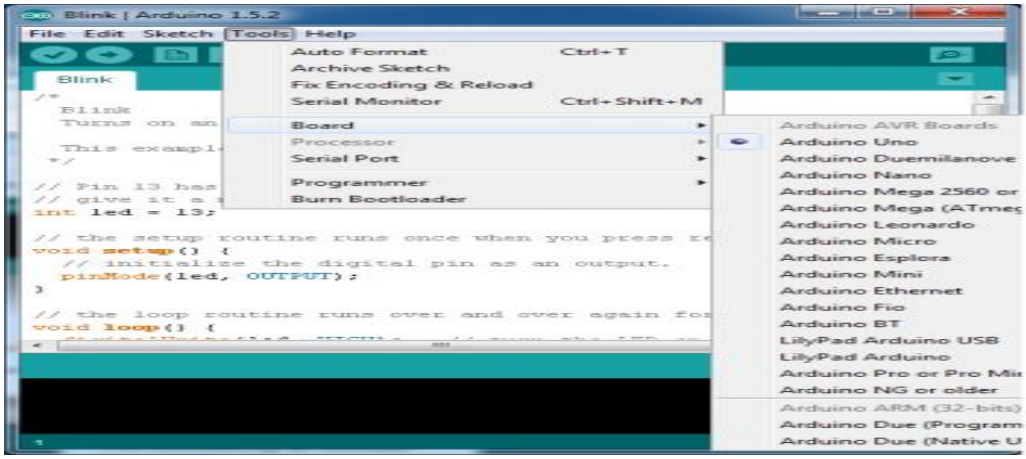

Figure2. Programming in Ardunio

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IV. RESULT AND CONCLUSION

Vehicle Monitoring and parking device installation is carried out using the IR sensor, GPS module, to enhance driver safety by using this system to trace continuous regulation of the car position. When the car arrives at the venue, it indicates the parking place available in the car park. The device is financial, effective and dynamic

The vehicle tracking device is a technology utilized by several businesses and individuals to monitor a vehicle through different means, such as GPS, which works with satellites or ground stations or other methods relying on mobile cellular tools. It is set to collect signals from the mobile tower cellular to transmit them to the web server to show the position on the car using Google maps on the globe in real time. The device is the hardware part connected to the car. In order to obtain acceptable performance, it is highly necessary to consider those hardware requirements. This allows Raspberry Pi to be used as an integrated device, particularly when using the mobile process, that attaches to the tracked vehicle

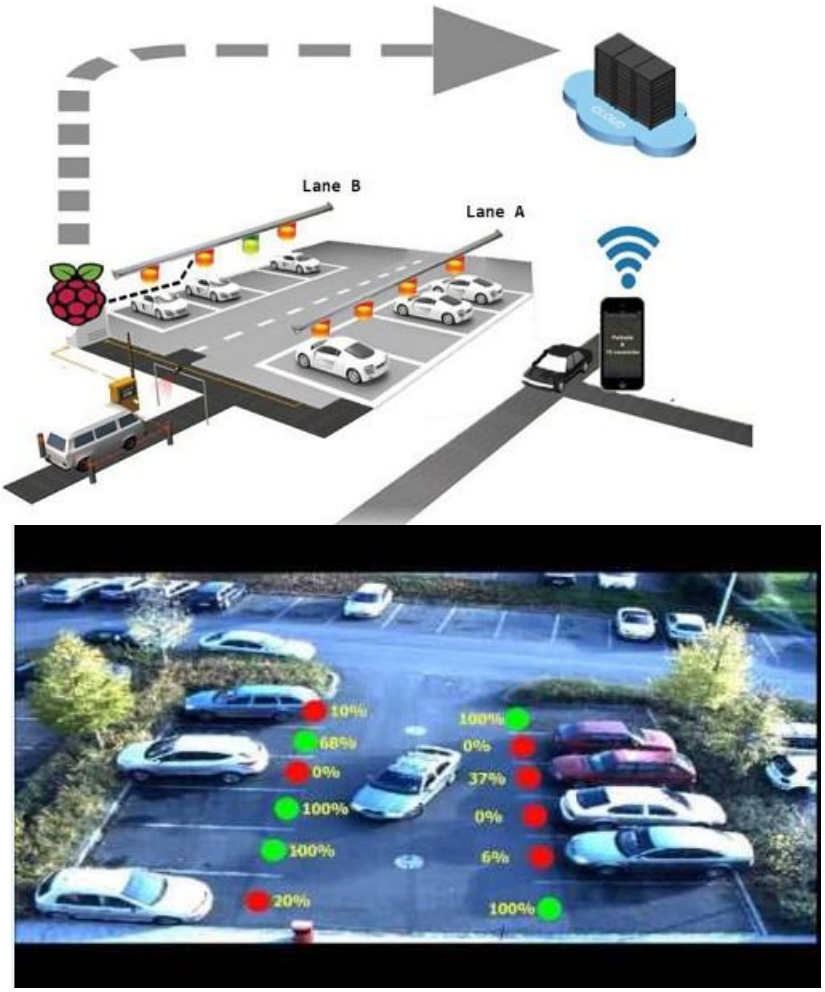

Figure2. Vehicle tracking and parking results

V. FUTURE SCOPE

In this paper the vehicle monitoring was found to be an enormous field. Any methods may be used for car monitoring. The procedure must be less costly and effective. In the future, the car monitoring system would have a major effect, because of a rising proportion of an automobile in today's world. To record the path of the car, different forms of database may be set up. The system may be substituted by adding sensors such as fire sensors and sensors of proximity. In the event that a car encounters an accident, sensors of proximity would be highly helpful. The system can be worn down by cutting the hardware so that the shortest way towards the destination is located not just in order to find the location for the car, but also in order to find the device.

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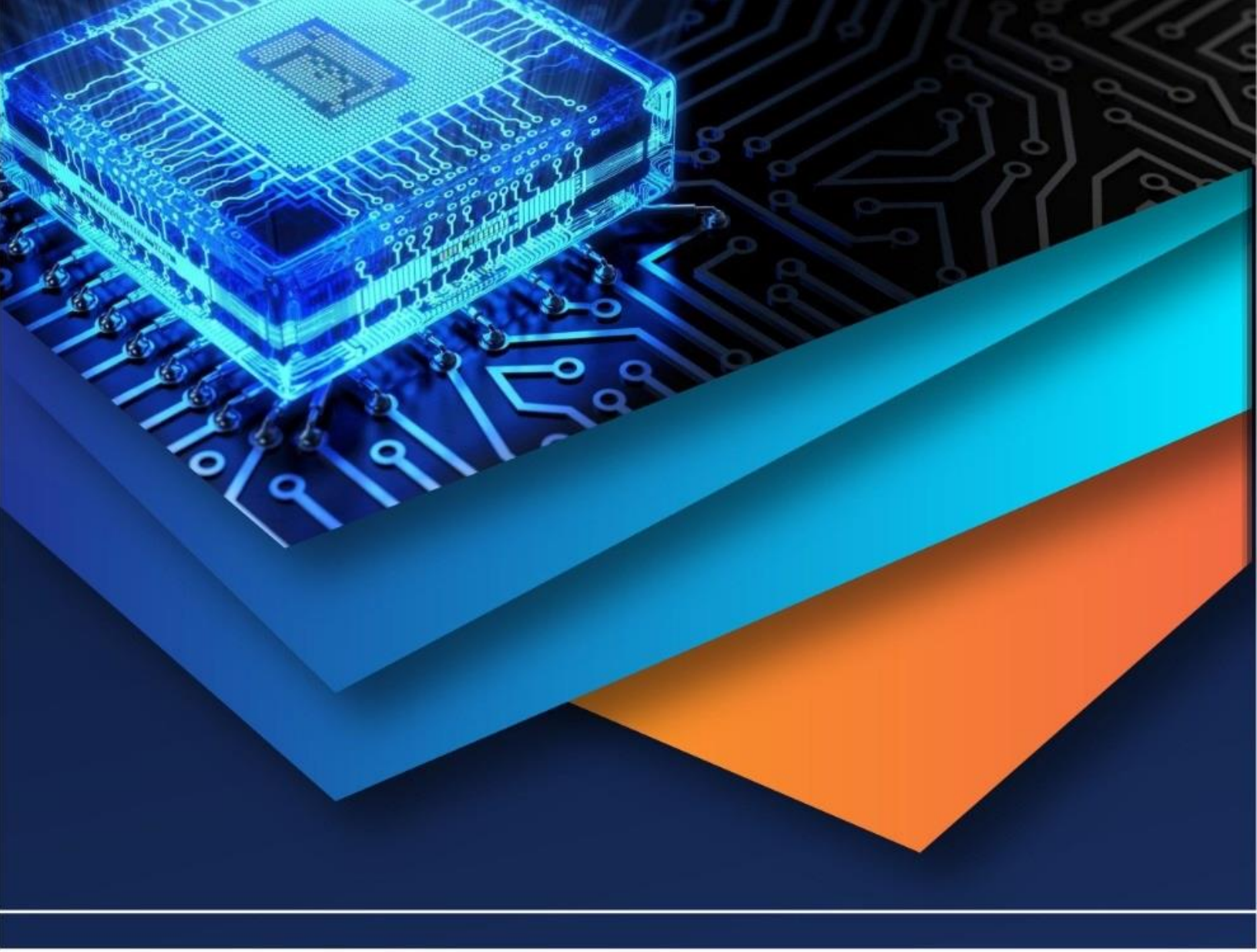

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