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Title ANALYSIS OF VEHICLE ACTIVITIES AND LIVE STREAMING WITH FINGER PRINT STARTER USING IOT

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ANALYSIS OF VEHICLE ACTIVITIES AND LIVE STREAMING WITH FINGER PRINT STARTER USING IOT

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ABSTRACT

In many instances people feels hard to unlock the key for the vehicle which are under perfect working condition as well as security for the vehicles is growing in risk manner such as theft and vehicle detection. so in order to bring a solution for this problem this system can be implemented. The IOT is the trending main module now a days it is used in many embedded applications. In this system we are going to monitor vehicles by using a fingerprint device which having a user data base accessing adopted by using the wireless fidelity module.by using this wireless fidelity module we can access the location of the vehicle when being loss. An LCD display is used in order to display the commands which are accessing by user under the influence of fingerprint module. We are going to control the vehicle by using an android app in mobile INTERNET OF THINGS and we can also unlock the vehicle by using fingerprint sensor manually even without having key. Along these parameters we are going to add some more parameters like vehicle accident detection, fire accidents in vehicle and auto engine off features alcohol levels monitoring with SMS alerts so these improves security parameters and these are user friendly which can easily access

1. INTRODUCTION

Fingerprint recognition technology allows access to only those fingerprints that are already stored in the memory. Stored fingerprints are retained even in the event of power failure or battery drain. This eliminates the need for keeping track of keys or remembering a combination password, or PIN. It can only be opened when

an authorized user is present since there are no keys or combinations to be copied or stolen or locks that can be picked. This paper focuses on the use of fingerprint to open locks, as opposed to the established method of using a key. In order to prevent unauthorized access to these devices, passwords and other pattern-based authentication methods are being used in recent times. However, a password-based authentication has an intrinsic weakness in password leakage. While the patterns are easy to steal and reproduce. In this project, we introduce an implicit authentication approach that enhances the password pattern with an additional security layer. Biometric systems have over time served as robust security mechanisms in various domains. Fingerprints are the oldest and most generally used sort of biometric authentication. A vehicle tracking system is an electronic device installed in a vehicle to enable the owner or a third party to track the vehicle's location.

This paper proposed to design a vehicle tracking system that works using GPS and GSM technology, which would be the cheapest source of vehicle tracking and it would work as an anti-theft system. It is an embedded system which is used for tracking and positioning of any vehicle by using Global Positioning System (GPS).

2. LITERATURE SURVEY

In this paper emerging location-aware mobile technologies are used successfully in cultural contexts. Various technologies, such as RFID and Wi-Fi. Used to allow communication with mobile devices Environment. This paper describes a computer-based in both active and passive RFID Automatic positioning of mobile devices in the art Museums. This program is especially useful Provide location-aware information when needed Users can manually select the desired information They love to see. This project has been done successfully Proven for the location and position of PDAs.

In this the author suggests that reducing high value property loss due to theft if the attempt to dispose of the property is found simultaneously. This paper Read the design of the anti-theft system based on RFID technology. The RFID tag that links an object is integrated Motion Sensor. The interrupt function is used for the tag automatically detects the movement of an object. Runtime Notice of theft is perceived using multiple communications the principle between tag and reader. Anti-theft system Operating proposal ability and RF Communication performance in a multi storied building its reliability.

This paper presents a novel radio frequency Automobile immobilization system based on identification (RFID); It has a lower hacking probability when protecting it Passenger safety of a hijacked vehicle. The immobilizer uses active RFID technology where the tag is located Created with relatively large character sets. The receiving unit is intelligently integrated into three controls Circuits in the vehicle, namely ignition circuit, power control Unit and automatic gear shifting system, which operates it Gradually bring the vehicle speed to zero at a safe speed The proposed anti-theft vehicle protection system here Tested and feasible under different weather conditions signal distortion conditions to verify its reliability.

In this thesis we present an anti-theft control Organization for vehicles that attempt to prevent

theft of a vehicle. This system uses an embedded chip to trigger Proximity Sensor, which senses the key during insertion and sending a SMS to the owner's mobile claiming to be the car Accessed. The message is sent to Owner about unauthorized use. More fuel injector the car will crash and the user cannot start any car Means. At the same time a secret lock system is activated the unauthorized user gets into the car, only that the owner of the secret lock system keys can Deactivate the mechanism. This technique helps you pick up fast Steps toward stealing. The design is robust and Simple.

In this the author suggests that GSM based security system is very stable and then a normal security system. Normal settings Based on the concept of sensors. They sound the alarm in detecting movement. This technical system is now lost its appeal as it has become a common sight in metros these alarms go off unnecessarily. We proposed a system IoT technique and a better decision-making process our vehicle was built to be very safe. It is a unique wireless Home / Car Safety Device that provides your instant alerts Mobile phone at the moment a security breach is detected It Wireless mode is designed to alert you with your quick call the burglar alarm system prevents an intrusion. This paper proposed an 8-bit embedded controller Connected to GSM the control mechanism is based on DTMF tones Generated by the mobile phone when the number keys are pressed

In this the author suggests that one of the clearest facts in the world is growing Number of cars and other vehicles during the production period as well as theft attempts. Many also make a big effort International and local companies to create car safety Systems, but the result is lower than expected the number of car theft cases continues to rise. Thieves developing their skills and finding the best and strongest Stealing techniques that require more powerful protection Systems. This research project proposes an automobile Monitoring and monitoring model to solve this problem. It introduces a powerful security model that can send SMS and MMS The owner must respond quickly, especially if the car is nearby. The paper focuses on the use of MMS and database technology a picture of the intruder is sent to the user or the police. The database provides the necessary information about the car and the owner, this will enable police or security personnel to track the car using a GPS system that can connect to Google Earth and others Mapping software. Activation and test results show the success of the prototype in sending the MMS to the owner within 40s Seconds and getting approval to the database (police or Security unit) within 3-4 minutes. Time and results Suitable for owner and police to take appropriate action against Intruder.

This paper deals with the design and development of the embedded system, which can be used to prevent / control theft of a vehicle. The developed tool is an embedded system based on GSM technology.

The tool is installed on the machine of the vehicle. An interface GSM modem is connected to the microcontroller to send a message to the owner's mobile. The main purpose of this tool is to protect the vehicle from any unauthorized access by entering a protected password Report the status of the same vehicle to the authorized

person (owner) using the Global System for Mobile. Contact Technology.

This system deals with the concept of network security. The key concept in this design is the introduction of mobile Communications in an embedded system. The entire unit designed is on a single board.

3.PROPOSED SYSTEM

Here in this system control and monitor the parameters in vehicle by using an android app in mobile INTERNET OF THINGS and we can also unlock the vehicle by using fingerprint sensor manually even without having key. Monitoring of the vehicle is can done by using Blynk app. The Blynk app is directly connect to the node mcu of the system.

Here some more parameters are going to be added like vehicle accident detection, fire accidents in vehicle and auto engine off features Alcohol levels monitoring with SMS alerts so these improves security parameters and these are user friendly which can easily access.
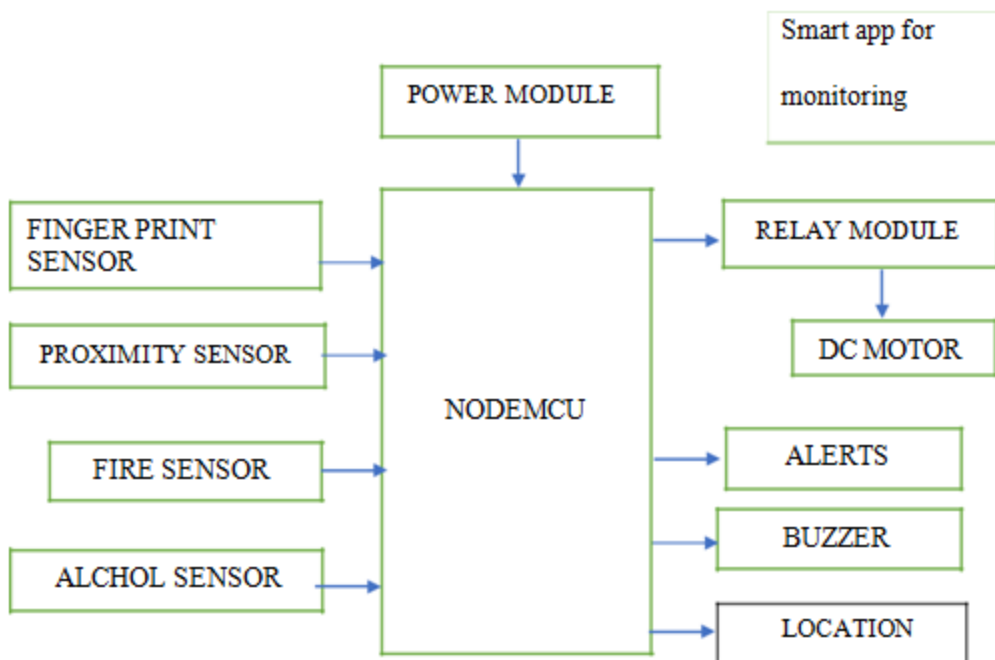

Fig: Block diagram of Proposed System

HARDWARE REQURIEMENTS
Node MCU
ALCHOL SENSOR
FIRE SENSOR
Proximity sensor
Wi-Fi Module
Relay Module
DC Motor
PCB (PRINTED CIRCUIT BOARD)
BUZZER
 SOFTWARE REQURIMENTS
Arduino IDE
Blynk Cloud
Customized APP

NODE MCU

The Node MCU is an open-source firmware and development kit that helps you to Prototype your IOT product within a few Lua script lines. It includes firmware which runs on the ESP8266 Wi-Fi SOC from Espress if Systems, and hardware which is based on the ESP-12 module.

FEATURES

- Open-source
- Interactive
- Programmable
- Low cost
- Simple
- Smart
- WI-FI enabled

FINGER PRINT MODULE GT-511C3

Fingerprint scanners are awesome. Why use a key when you have one right at the tip of your finger? Unfortunately, they're usually unreliable or difficult to implement. Well not anymore! We've found this great fingerprint module from ADH-Tech that communicates over TTL Serial so you can easily embed it into your next project.

The module itself does all of the heavy lifting behind reading and identifying the fingerprints with an on-board optical sensor and 32-bit CPU. All you need to do is send it simple commands. To get started, just register each fingerprint that you want to store by sending the corresponding command and pressing your finger against the reader three times. The fingerprint scanner can store different fingerprints and the database of prints can even be downloaded from the unit and distributed to other modules. As well as the fingerprint "template," the analyzed version of the print, you can also retrieve the image of a fingerprint and even pull raw images from the optical sensor!

IR Sensor

The IR Sensor-Single is a General purpose proximity sensor. Here we use it for collision detection. The module consists of an IR emitter and IR receiver pair. The high precision IR receiver always detects an IR signal. The module consists of 358 comparator IC. The output of sensor is high whenever it IR frequency and low otherwise. The on-board LED indicator helps user to check status of the sensor without using any additional hardware. The power consumption of this module is low. It gives a digital output

Based on a simple basic Idea, this IR obstacle sensor is easy to build, easy to calibrate and still, it provides a detection range of 10- 30 cm.

This sensor can be used for most indoor applications where no important ambient light is present. It is the same principle in ALL Infra-Red proximity sensors. The basic idea is to send infrared light through IR-LEDs, which is then reflected by any object in front of the sensor.

The basic principle of IR sensor is based on an IR emitter and an IR receiver. IR emitter will emit infrared continuously when power is supplied to it. On the other hand, the IR receiver will be connected and perform the task of a voltage divider.

FIRE SENSOR

A sensor which is most sensitive to a normal light is known as a flame sensor. That's why this sensor module is used in flame alarms. This sensor detects flame otherwise wavelength within the range of 760 nm – 1100 nm from the light source.

This sensor can be easily damaged to high temperature. So this sensor can be placed at a certain distance from the flame. The flame detection can be done from a 100cm distance and the detection angle will be 600. The output of this sensor is an Analog signal or digital signal. These sensors are used in firefighting robots like as a flame alarm.

ALCOHOL GAS SENSOR MQ3:

MQ3 is a low cost semiconductor sensor which can detect the presence of alcohol gases at concentrations from 0.05 mg/L to 10 mg/L.

The sensitive material used for this sensor is SnO_2, whose conductivity is lower in clean air. It's conductivity increases as the concentration of alcohol gases increases. It has high sensitivity to alcohol and has a good resistance to disturbances due to smoke, vapor and gasoline.

RELAY MODULE

A relay is an electrically operated switch Many relays use an electromagnet to mechanically operate a switch, but other operating principles are also used, such as solid-state relays. Relays are used where it is necessary to control a circuit by a separate low-power signal, or where several circuits must be controlled by one signal. The first relays were used in long distance telegraph circuits as amplifiers: they repeated the signal coming in from one circuit and re-transmitted it on another circuit. Relays were used extensively in telephone exchanges and early computers to perform logical operations.

A type of relay that can handle the high power required to directly control an electric motor or other loads is called a contactor. Solid-state relays control power circuits with no moving parts, instead using a semiconductor device to perform switching. Relays with calibrated operating characteristics and sometimes multiple operating coils are used to protect electrical circuits from overload or faults; in modern electric power systems these functions are performed by digital instruments still called "protective relays".

DC GEAR MOTORS

Almost every mechanical development that we see around us is accomplished by an electric motor. Electric machines are a method of converting energy. Motors take electrical energy and produce mechanical energy. Electric motors are utilized to power hundreds of devices we use in everyday life.

BUZZER

ELECTROMECHANICAL

The electric buzzer was invented in 1831 by Joseph Henry. They were mainly used in early doorbells until they were phased out in the early 1930s in favor of musical chimes, which had a softer tone.

Electric motors are broadly classified into two different categories: Direct Current (DC) motor and Alternating Current (AC) motor. In this article we are going to discuss about the DC motor and it's working. And also how a gear DC motors works.

A DC motor is an electric motor that runs on direct current power. In any electric motor, operation is dependent upon simple electromagnetism. A current carrying conductor generates a magnetic field, when this is then placed in an external magnetic field, it will encounter a force proportional to the current in the conductor and to the strength of the external magnetic field. It is a device which converts electrical energy to mechanical energy. It works on the fact that a current carrying conductor placed in a magnetic field experiences a force which causes it to rotate with respect to its original position.

Practical DC Motor consists of field windings to provide the magnetic flux and armature which acts as the conductor.

SOFTWARE- BLYNK CLOUD

Fig : Blynk app

Overview There are three major components in the platform:

Blynk was designed for the Internet of Things. It can control hardware remotely, it can display sensor data, it can store data, visualize it and do many other cool things.

Blynk is a platform with iOS and Android apps to control Arduino, Raspberry Pi and the likes over the Internet. It's a digital dashboard where you can build a graphic interface for your project by simply dragging and dropping widgets. It's really simple to set everything up and you'll start tinkering in less than 5 mins. Blynk is not tied to some specific board or shield. Instead, it's supporting hardware of your choice.

Whether your Arduino or Raspberry Pi is linked to the Internet over Wi-Fi, Ethernet or this new ESP8266 chip, Blynk will get you online and ready for the Internet Of Your Things.

BLYNK APP - allows to you create amazing interfaces for your projects using various widgets we provide.

BLYNK SERVER - responsible for all the communications between the Smartphone and hardware. You can use our Blynk Cloud or run your private Blynk server locally. Its open-source, could easily handle thousands of devices and can even be launched on a Raspberry Pi.

BLYNK LIBRARIES - for all the popular hardware platforms - enable communication with the server and process all the incoming and out coming commands.

Blynk was designed for the Internet of Things. It can control hardware remotely, it can display sensor data, it can store data, visualize it and do many other cool things.

Now imagine: every time you press a Button in the Blynk app, the message travels to the Blynk Cloud, where it magically finds its way to your hardware. It works the same in the opposite direction and everything happens in a blynk of an eye.
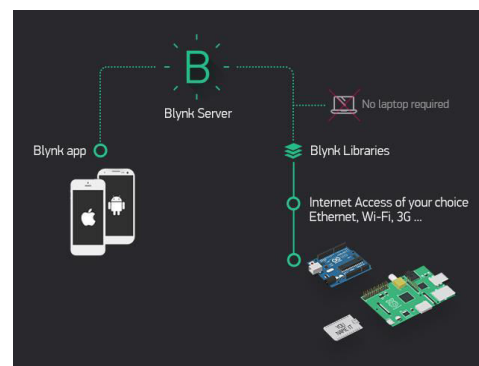

Fig : Steps Involved in Blynk App

FEATURES
•	Similar API & UI for all supported hardware & devices

- Connection to the cloud using:
- Wifi
- Bluetooth and BLE
- Ethernet
- USB (Serial)
- GSM
- Set of easy-to-use Widgets
- Direct pin manipulation with no code writing
- Easy to integrate and add new functionality using virtual pins
- History data monitoring via History Graph widget
- Device-to-Device communication using Bridge Widget

- Sending emails, tweets, push notifications, etc.
- new features are constantly added

CHARACTERISTICS

Similar API & UI for all supported hardware & devices Connection to the cloud can be done using Ethernet, Wi-Fi, Bluetooth, BLE and USB (Serial) Set of easy-to-use Widgets Direct pin manipulation with no code writing Easy to integrate and add new functionality using virtual pins History data monitoring via History Graph widget Device-to-Device communication using Bridge Widget Sending emails, tweets, push notifications, etc

.4.RESULTS

CASE 1:

When the user places the finger on the scanner it reads the data already enrolled by the user and it matched with the given finger
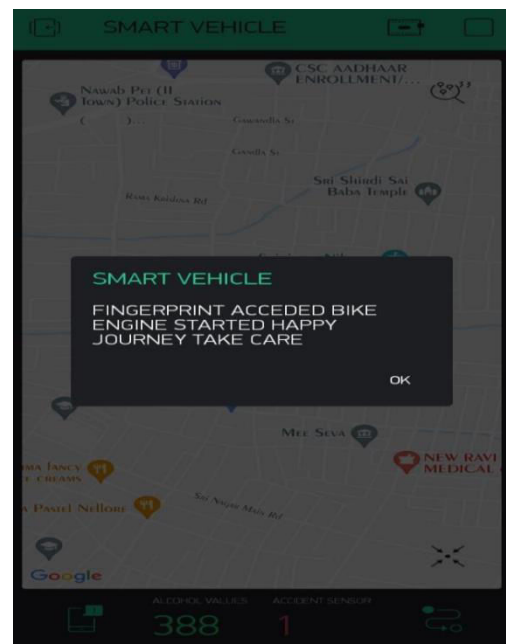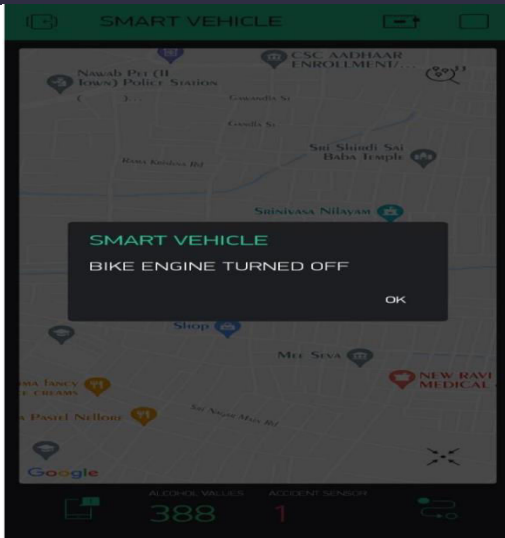
CASE 2:

When vehicle was smashed with the another vehicle or any object the proximity sensor activated and send accident message and location to the registered blynk app which is added by the user and the message is shown below.
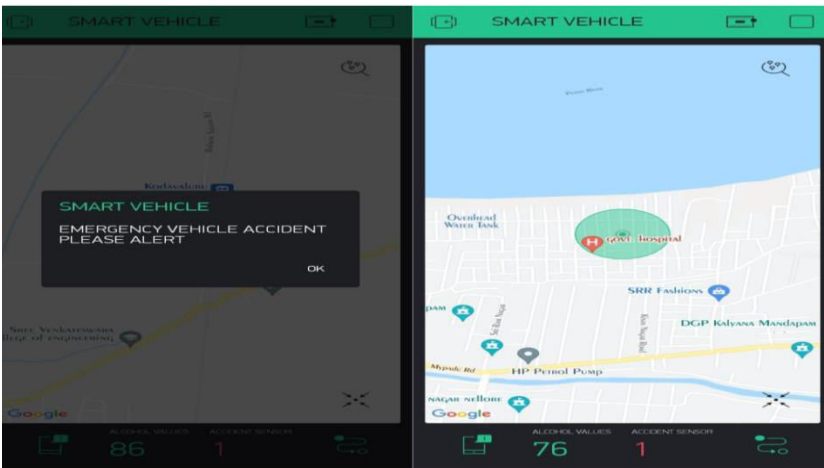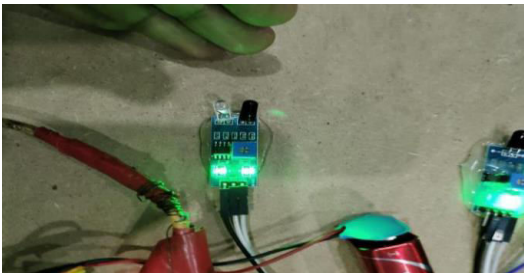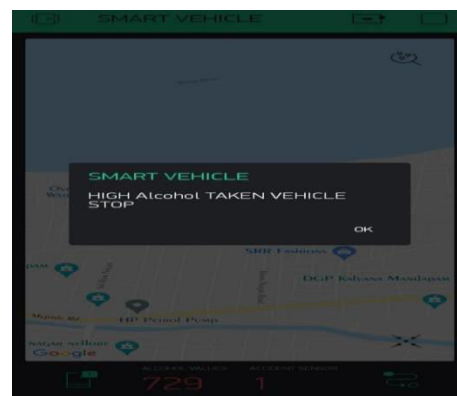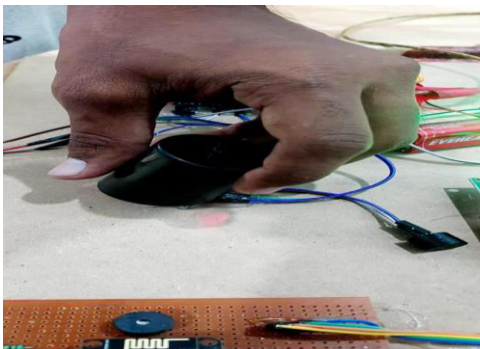
CASE 3:

When the fire is near to the vehicle or any fire occurred in the bike by itself it sends the alert message to the user device as shown below.
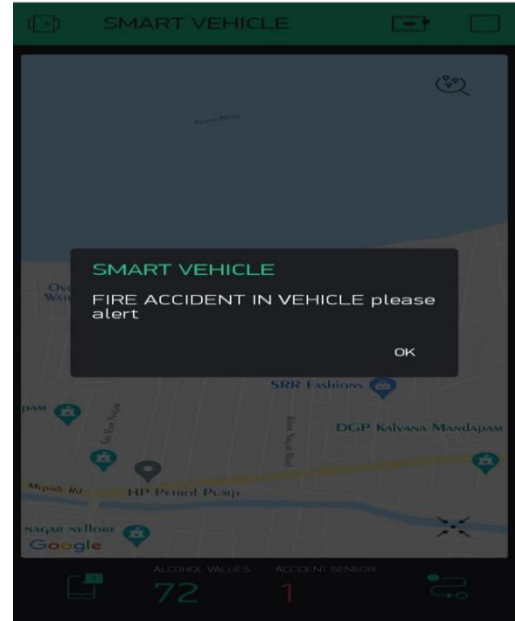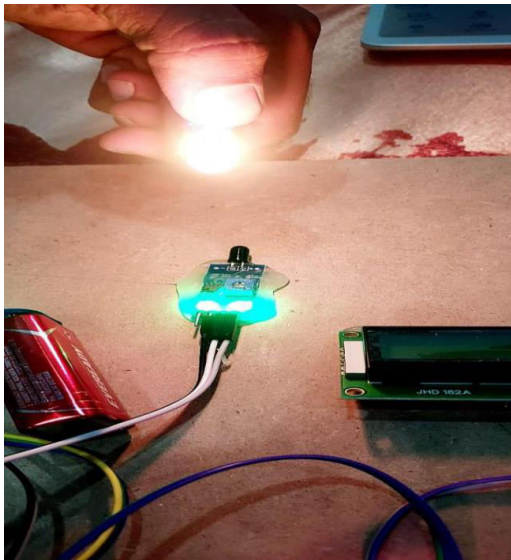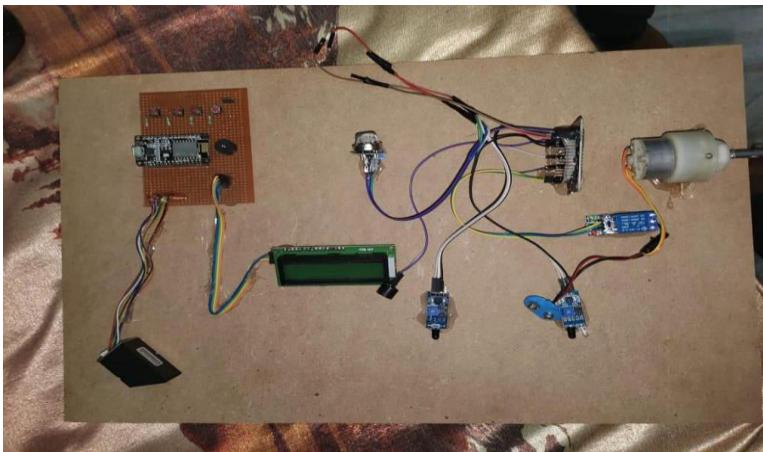

CASE 4:

When the user consumes the alcohol more than the 550ppm then the engine is automatically stopped and it sends the message to the user as shown in below.

ASSEMBLED KIT

Assembled kit consists of Fingerprint module, Node MCU, Proximity sensor, Flame sensor, Buzzer, Relay module, DC motor, LCD Display and Battery

ADVANTAGES
• High efficiency in terms of mileage
• Smooth performance
• Accidents Detection and prevention
• Security and safety
• Easy to monitor the Vehicle parameters from smart mobile
• Less maintenance

DISADVANTAGES

• Vehicle cost is high when compared to normal vehicles.
• It starts with only the login credentials which is given by the user.

APPLICATIONS
• Smart vehicles
• Emergency vehicles
• VIP Vehicles

5. CONCLUSION
• The implemented system is integrated with multiple sensor like fire sensor, finger print sensor, proximity sensor and alcohol detection sensor.
• This proposed system managed to minimize accidents occurs to the vehicle and increases the safety of the vehicle.
• The entire system is monitored and controlled by the Node MCU and Blynk app.

• The system is capable of auto start and auto stop according to the parameters given to the system.

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