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EFFICIENT VEHICLE MONITORING AND ALERTING USING SECURED IOT

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ABSTRACT: As IoT (Internet of things)is enhancing, almost all procedures can be perceived from web and produce data for various examines. Latest reports demonstration the aptitude of IoT in dissimilar applications like healthcare, industrial sector and government sectors. Our effort is to mark practice of IoT for the vehicle condition monitoring i.e., with deference to severalfeaturesplus temperature inside the engine cabin, vibrations triggered to the vehicle from outdoor sources, speed and location of the vehicle. All the above factors can show a main role in finding of accident. Our foremostgoal is to except the survivors of accident victims by transfer the evidenceconcerning the accident to the concerned persons or systems. We create it conceivable by consuming different sensors and an MCU to progression and send data to cloud. We can control the vehicle through Blynk application like apply breaks or shutdown the engine etc...

KEYWORDS: Internet of things, Arduino Uno, espressif, Global Position System, Blynk app

INTRODUCTION: We use cloud not only to store data but also for data analysis, gathering, visualization. The key features of cloud contain on-demand service establishment, reserve pooling and bounciness. Internet of Things (IoT) means collaborating of devices with each other over the internet. Some applications of IoT are Smart energy, smart city health checking system. In IoT data is communicated from sensors and they can be kept and examined by varied IoT platforms like Blynk, Thinger, Thingspeak. In the currentcondition no less than one discrete in the family has a vehicle, In the current age everyonedisposition is altering regarding time, and they consume to broad their works in constrained time, so the requirement to widespread the work as debauched as imaginable, since of that inclination they ambition the vehicles very fast risking their lives in order to complete their work ensuing to the cost of their life's.One of the most practical technologies in this trending world is IoT. IoTlabels about the embedded devices which are interweaved with the internet. IoT Internet of Things includes devices like sensors, actuators, motors etc. The proposed system is used as an anti-theft system in transport systems, public vehicles.

LITERATURE REVIEW: **Das et al** projected a vehicle coincidence and location monitoring system. This system delivers a contrivance to diminishadversities by observing eye blinking of the driver, which specifieslethargy, hindrances located in the road and the drunken state of the driver. Accident and the location of the vehicle are distinguished. By this system primary care is received as the accident evidence is available.

Anusha et alinstigated a system using LPC2148 and the system has sorts like storing in the database.The effortcomprises GPS, GSM modules. The charter also detects Alcohol consumption and Engine Temperature, All the standards can be seen on the Web page.so safety is provided to the explorers in the vehicle. **Mayuresh et al**termed a system that practices an open source platform and envisioned to monitor and trace the position of a vehicle, the structure also checks fuel consumption, enginetemperature and vehicle speed, GPS/GPRS/GSM modules are used for communication. All the standards are stowed in the data base on the web server.

VEHICLE MONITORING AND TRACKING SYTEM:

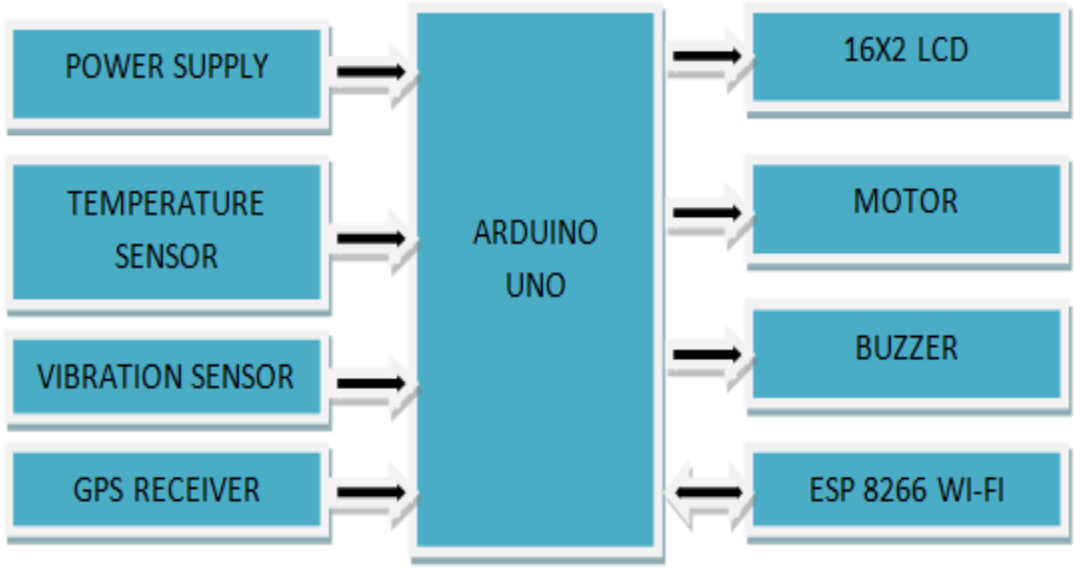


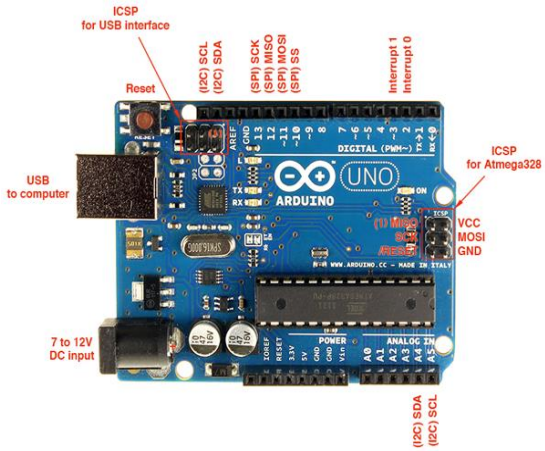
Fig: Proposed block diagram

NEW VIBRATION & TEMPERATURE MONITORING SYSTEM

Our vibration and condition monitoring system will assist you to forecast machine let-downs and save enormousquantity of costs due to non-programmed down times in production.Vibration sensor is used to treasure the vehicle accident incidence and temperature sensor is used to notice engine body temperature. If any un-normal disorder occurs, mechanicallycautionary message along with GPS location will be sent to Blyn app to monitor. Blynk app is used to screen and control the vehicle.

ARDUINO UNO: The Arduino Uno is a microcontroller board based on the ATmega328. It consumes 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It has everything needed to provision the microcontroller; merelyattach it to a computer with a USB cable or power it with anAC-to-DC adapter or battery to get happening. The Uno varies from all previous boards in that it does not use the FTDI USB-to-serial driver chip. In its place, it structures the Atmega16U2 (Atmega8U2 up to version R2) automatic as a USB-to-serial converter. The Uno board has a device pulling the 8U2 HWB line to ground, making it cooler to put into DFU mode.

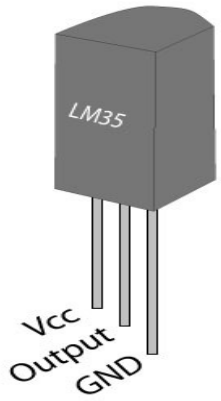
ARDUINO PIN DIAGRAM:



TEMPERATURE SENSOR(LM35):

LM35 is a precision IC **temperature sensor** with its output proportional to the temperature (in °C). The sensor circuitry is wrapped and consequently it is not endangered to corrosion and other processes. With **LM35**, temperature can be stately more truly than with a thermistor. It also take low self heating and does not cause more than 0.1°C temperature rise in still air.

The operating temperature range is from -55°C to 150°C. The output voltage varies by 10mV in response to every °C rise/fall in ambient temperature, *i.e.,* its scale factor is 0.01V/°C.



It is plannedexplicitly to quantity the hotness or coldness of an object.**LM35** is aaccuracy IC temperature sensor with its output comparative to the temperature (in °C).With LM35, the temperature can be restrained more precisely than with a thermistor. It also retainshort self heating and does not cause more than 0.1 °C temperature rise in quiet air. The operating temperature variety is from **-55°C to 150°C**.The LM35's low output impedance,linear output, and precise inherent calibration make interfacing to readout or control circuitry particularlyinformal.

VIBRATION SENSORS:

The **vibration sensor** is also called a piezoelectric **sensor**. These **sensors** are suppleprocedures which are used for gaugingnumerousprocedures. This **sensor** uses the piezoelectric effects while calculating the vicissitudes within hastening, pressure,

temperature, force then strain by altering to an electrical charge.

LIQUID CRYSTAL DISPLAY:

The LCD display involves of two lines, 20 characters per line that is interfaced with the PIC16F73. It also holds a user-programmed RAM area that can be automatic to produce any wanted character that can be fashioned using a dot matrix. To discriminate between these two data areas, the hex command byte 80 will be used to indicate that the display RAM address 00h will be chosen Port1 is used to supply the command or data type, and ports 3.2 to 3.4 furnish register select and read/write levels.The LCD is used for the purpose of demonstrating the words which we are prearranged in the program code. This code will be performed on microcontroller chip. By subsequent the commands in code the LCD show the related words.

GLOBAL POSITIONING SYSTEM:

The geographical coordinate is a system which stipulates any assumed location on the earth surface as latitude and longitude. There are strategies which can recite the geographical organizes of a place with the benefit of the signals established from a number of satellites circling the earth. The system of satellites which supports in the locating of a place is called Global Positioning System (GPS). The devices which can read the geographical coordinates of a place with the help of at least four GPS satellites are called GPS Receiver or just GPS module.

ESP8266EX (simply referred to as ESP8266) is a system-on-chip (SoC) which assimilates a 32-bit microcontroller, standard digital peripheral interfaces, antenna switches, RF, power amplifier, low noise receive amplifier, filters and power management segments into a small package. It has a 64 KB boot ROM, 32 KB instruction RAM, and 80 Ki user data RAM. Peripheral flash memory can be retrieved through SPI. The silicon chip itself is housed within a 5 mm × 5 mm Quad Flat No-Leads package with 33 connection pads — 8 pads along each side and one large thermal/ground pad in the center.

BUZZER:

Piezo buzzer is an automated device usually used to produce sound. Light weight, simple edifice and low price make it practical in numerousrequests like car/truck reversing indicator, computers, call bells etc. Piezo buzzer is founded on the oppositecode of piezo electricity discovered in 1880 by Jacques and Pierre Curie. It is the occurrences of producing electricity when motorized pressure is functional to convincedtools and the vice versa is also true.

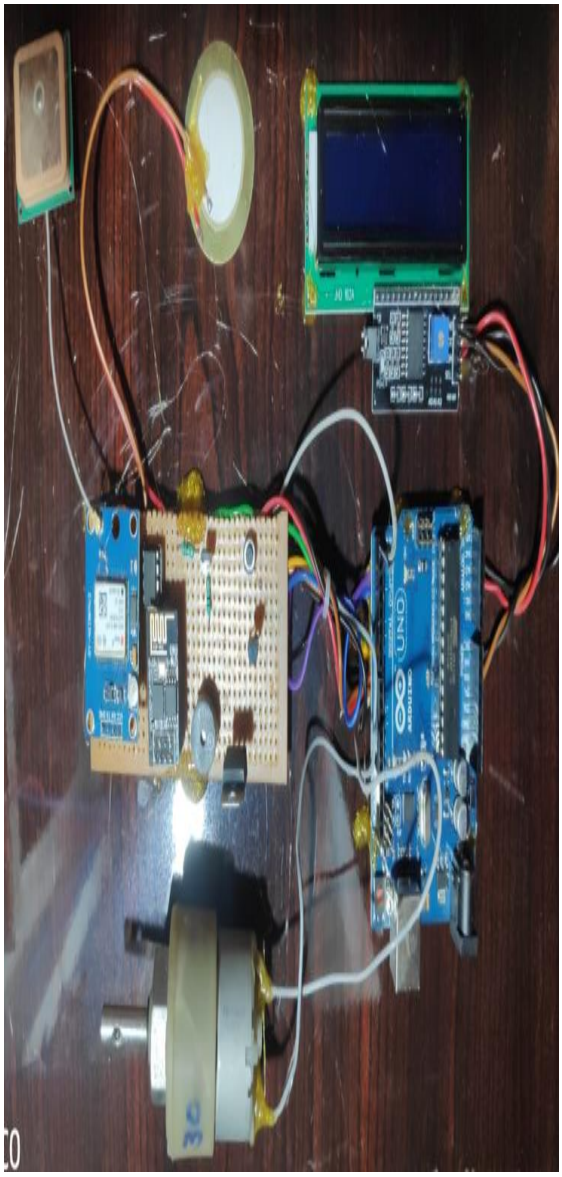
DC MOTORS

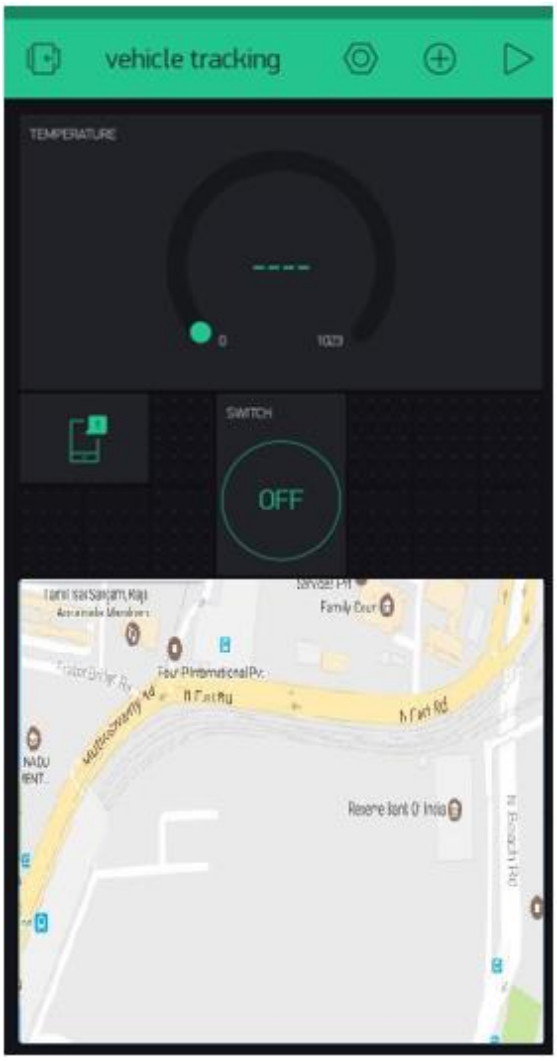
The direct current (DC) motor is one of the first machines devised to convert electrical power into mechanical power. Permanent magnet (PM) direct current converts energy over the interaction of two magnetic fields. One field is twisted by aeverlasting magnet muster;

the other field is formed by an electrical current graceful in the motor windings. These two fields consequence in a rotation which inclines to replace the rotor. As the rotor turns, the current in the windings is commutated to harvestaincessant torque output. The still electromagnetic field of the motor can also be wire-wound like the armature (called a wound-field motor) or can be complete up of enduring magnets (called a permanent magnet motor).

OUTPUT:

Prototype:





Map Showing Vehicle Location

CONCLUSION:

Implementation of Vehicle Monitoring and Tracking system has done usingArduino, temperature, vibration and GPS device.an intelligent vehicle context for mischance appreciation and improving the world a much and safe place to live. The beneath is wherever mischance has soared out at the vehicle and this guide is shaped itself and displays the expanse of the fatality for defendingpurpose.

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