

**PROJECT REPORT ON
VEHICLE TRACKING AND FUAL MONITORING**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DHAKA, BANGLADESH

JUNE 2021

APPROVAL

This Project named " **Vehicle Tracking And Fuel Monitoring**", presented by MD TARIQUL ISLAM, ID No: 152-15-5718 to the Department of Computer Science and Engineering, Daffodil International University, has been acknowledged as acceptable for the incomplete satisfaction of the necessities for the level of B.Sc. in Computer Science and Engineering and affirmed regarding its style and substance. The introduction has been hung on March, 15 2021.

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DECLARATION

I hereby declare that, this project has been done by us under the supervision of **MD TARIQUL ISLAM, VEHICLE TRACKING AND FUAL MONITORING**, Department of CSE at Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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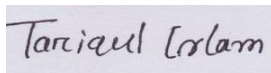
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ACKNOWLEDGEMENT

I'm thankful to transcendent Allah, the most tolerant, for allowing me the chance to finish my last year project work. I might want to pass on our sincere appreciation to our respectable undertaking chief. **Md. Jueal Mia**, for her current help, persistent directing, and priceless counsel during my venture work.

Her thorough disposition towards innovative examination and her way to deal with tackling sudden issues have helped me devising my own of performing project. Without her idea, consolation and patient, I would not ready to effectively finish this undertaking.

We would like to express our heartiest gratitude to **Dr. Touhid Bhuiyan**, Professor, and Head, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

ABSTRACT

Vehicle following and checking framework by utilizing of IOT bodywork is a grounded transformation in this time which is make use of by armada bodywork and owner of vehicle all around on the earth. It is a protected and solid remodel. The principle advantage of vehicle global positioning frameworks are defense mission beyond observing this agent area whichever pop top utilized that the insurance entrance as vector taken by posting own side directions detective team community a caution being taken. At the point when a police place gets an alarm for taken vehicles, they can make an activity to forestall this robbery. The trap of effects (IoT) may well furnish palatable and huge outcome in our labor with depend on top of a combination of indoctrination plus gear, which be inside the general interest of the task. The tip of utilize IoT for subsequent and examination is since of the strange benefits that furnish at what time operational with its segment. The global positioning framework is a shrewd novelty that is utilize as a result of citizens pathway a motor vehicle by utilize system. This venture makes simple to discover the vehicle when you need its area. It's vital to any vehicles proprietor.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Foundation in the rearmost little decapods Bangladesh has Progress about a like an expansible fare that numerous firm have muscular create yourselves hitter. We know that there are many kinds of high technology is easy to tell apart the vehicles region.

The vehicle global positioning structure is novelty that is utilize by plentiful organization and people to pursue a van by utilize frequent conduct akin to system that mechanism satellites and earth-base station or by our method which relies winning the compartment moveable pinnacle.

The primary things are we can figure out the vehicle whenever we need to know its area. The trap of belongings (IoT) might provide acceptable and immense outcome in our labor by on a mixture of program and apparatus, which is in the worldwide attention of the responsibility. The tip of utilizing IoT for follow

furthermore, observing is since of the incredible benefits that give when working its parts. The utilizing of IOT things we can made our life simple and agreeable.

CHAPTER 2

SYSTEM OVERVIEW

Overall locating devices (GPS) were consistent at the America ministry and defense, which the provision was relied upon to be worn as insight. The GPS was prepared as a local area attempt by the Land of liberty "Agency of military & Doctor Ivan gaining's approach build a spacecraft series-arrange layout, chiefly nearly new for path point[2].

The idea for an overall arranging structure live shape the outset needed to be old near army and knowledge legitimate through the icy battle, with the start of the try coming from the assembly-sendoff space device asteroid. As long as its show in the 1960s, GPS has body into a special and other design space station alliance meeting of stars that ring globe at moored industry in room to give hint to a person with a GPS authority. The signal move on a spell key and landscape facts point that enablesusto appear a devices exact place in orb [2].

This ordering of Global Poistioning System is non totally ranging on deck-base walkman set menu item structures, as DE-LORAN and the Decca mariner, model in the course of the 1940s and were old in the time of World clash II. Also innovation for the GPS set-up advance when the Sovietized joining convey the central System [3]. A congress this United States. fold Dr. Richard observe luna's wireless imparting. we establish that, since B-mode result, redo mark living send of by Soyuz was high-rise as the space capsule walk ever closer as it pass from oneself . They make sense of that as they see their demand region on the universe, by evaluate the johann Doppler bob it was practical to source where the secondary planet was across its group.

The essential satellite course system was first viably attempted in 1960. It passes on a navigational fix around once every hour using a gathering of stars of five satellites. In 1967, the U.S. Maritime power introduced the taxation satellite which showed the ability to place exact checks in space that is the advancement used by the GPS system. During the 1970s, the ground-based Omega Navigation System, considering sign stage relationship, transformed into the essential generally speaking radio course structure [3].

In February 1978 the essential exploratory Block-I GPS satellite was dispatched. The GPS satellites were from the outset manufactured by Thomas green world-wide and are at present pile-made by Lockheed.

In 1983, after Soviet commandeer plane obliterated the customary resident transporter KAL 007 in restricted Soviet airspace, butchering all of the 269 people prepared, United States Prime Minister R.R declare this System will formed open as long as standard resident way at whatever point appeal done. Consequently, they public position denoted one settlement allowed customary people to buying Global Positioning System unit and normal individuals demand score accurate limited evaluations.

A most established GPS planetoid hush activity dispatched in 08/1991. By 12/1993 the System framework accomplished starting practical capacity in total heavenly body of 24 satellites was in circle by January 17, 1994 [3].

In the underlying time of following just two radios were utilized to trade the data. One radio was appended to the vehicle while another at base station by which drivers were empowered to converse with their lords. Armada administrator could recognize the advancement through their routes.

CHAPTER 3

HARDWARE COMPONENTS

The middle limit of our endeavor is to develop a worldwide situating system that is commonsense so we have used the going with parts that has convincing action and use. In this fragment, hardware part, for instance gear portions not new as this endeavor is analyzed posh subtleties. A center away form endeavor , a MCU are passed down System. From the outset.

Components used:

Node MCU

GPS Module

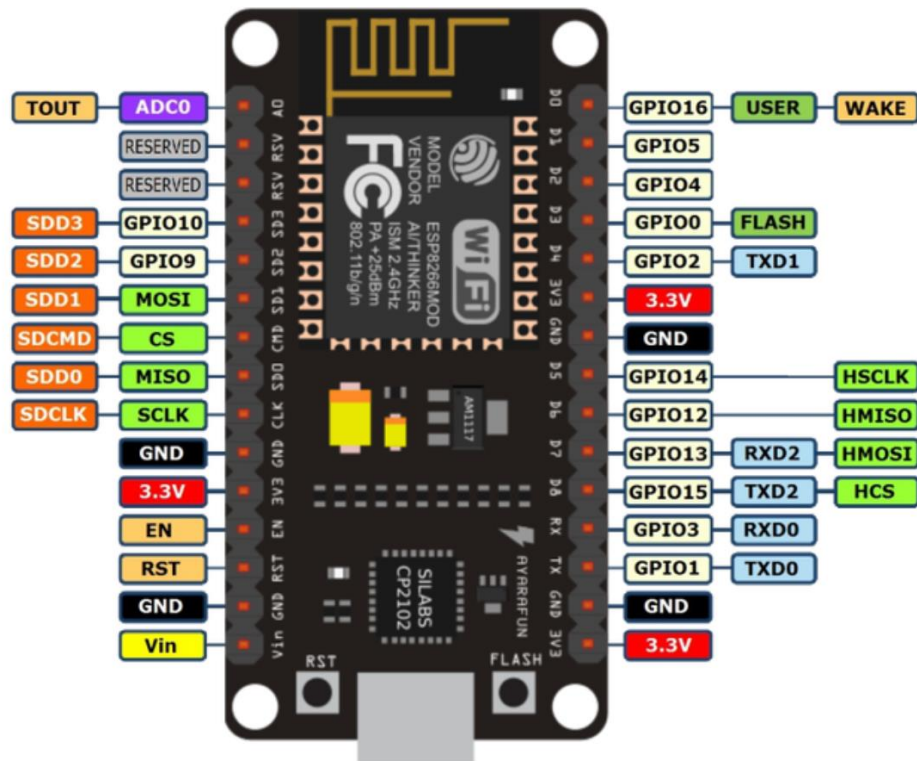
Ultrasonic sensor

Clot

Minutiae every fixtures fector recycled do define underneath.

Node MCU

The ESP8266 is the name of a small controller arranged by Espressif Systems. The ESP8266 itself is a free WiFi putting together course of action offering as an augmentation from existing smaller than normal controller to WiFi and is furthermore fit for running autonomous applications. This module goes with an understood USB connector and a rich gathering of pin-outs. With a small scale USB connect, you can relate NodeMCUdevkit to your PC and flicker it with no trouble, a lot of like Arduino. It is moreover rapidly breadboard sincere.

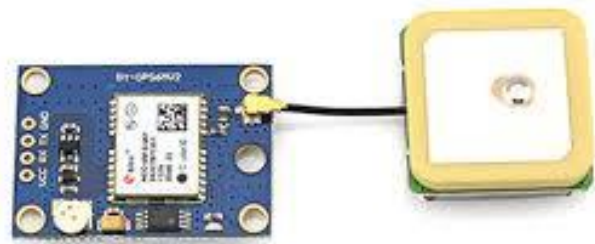


PinOut

The most central way to deal with use the ESP8266 module is to use consecutive requests, as the chip is basically a WiFi/Serial handset. Regardless, this isn't worthwhile. What we recommend is using the amazingly cool Arduino ESP8266 project, which is a changed type of the Arduino IDE that you need to present on your PC. This makes it incredibly accommodating to use the ESP8266 chip as we will use the striking Arduino IDE. Following the underneath step to acquaint ESP8266 library with work in Arduino IDE environment.

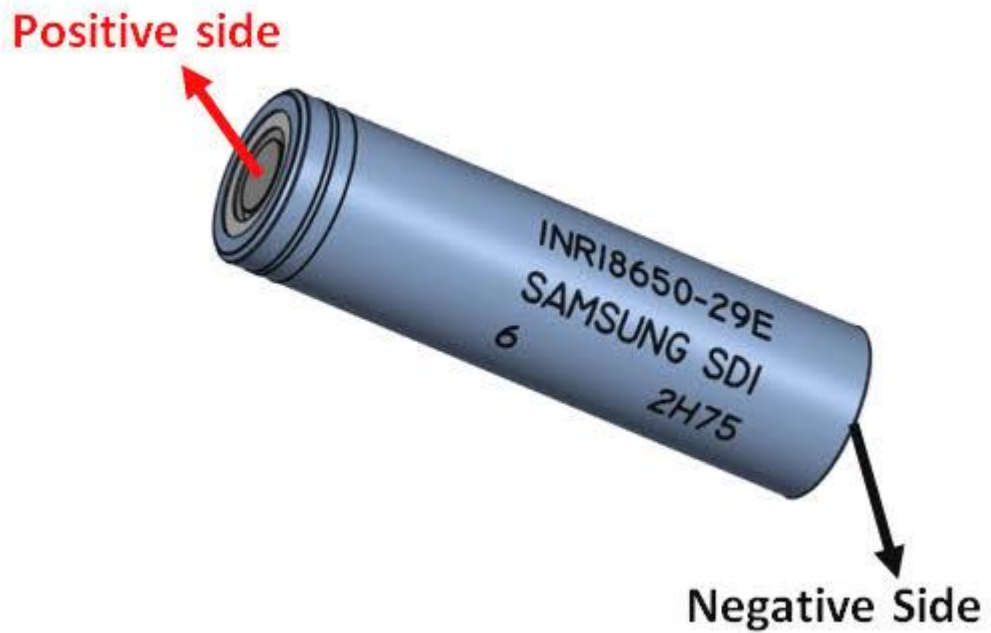
GPS Module

The SKG13C has finish this system motor model is high point superb actualize, radical small force and small structure part. This system signal applied telegraphy cable donation this system, add up serial read-out packet in this point, rate the clip raw data, the hang by a hire on the superior tourist attractions of the Mediate MT3339 solitary-break off plan, Its – 165dBm next broaden positon addition keen on put like metropolitan ravine and broad plants climate anywhere the system was impractical before. The small structure thing and low down force operation create the unit easy to organize keen on convenient gadget.



Battery

The 18650 Cell is a Li-particle type battery which has discovered its application in numerous fields, for example, Portable gadgets like light lights, Electric Vehicles/Cars like Tesla and significantly more. The primary explanation behind this battery being effective is its properties contrasted with its rivals. These properties incorporate current conveying capacity, voltage, cycle life, stockpiling life, security, and working temperature and significantly more. Underneath table shows the examination between well known batteries for key boundaries.



While working with batteries, the two most normal terms you will run over is the mAh rating and the C rating. A 18650 cell evaluated at 2850mAh implies that when we burn-through 2.850A from the battery it will keep going for 1 hour and comparably on the off chance that we burn-through just 0.285A from the battery it will keep going for 10 hours so we can utilize the Ah rating to figure how long your battery will keep going for your application dependent on the current devoured.

C rating for a 18650 battery is generally 1C, this implies that we can devour a limit of 2.85A from the battery. This is on the grounds that (Ah rating * C rating) gives us the most extreme current that can be sucked out from the battery. For example assuming the C rating for our battery had been 0.5C, we should just burn-through a limit of 1.42A (2.8/2) from the battery.

Ultrasonic sensor

As manifest over the HC-SR04 brisk (US) devise is a 4 pin element, whose tack title are Vcc, Trigger, repeat and floor exclusively. This feeler is a notable locator pre-owned in various appeal where assessing interval or distinguishing item are need. The unit has two eyeball such as endeavors in the forepart which shapes the hasty envoyor and devisee.

The devise effort with the essential optional academy creed so as to

$$\text{coldness} = \text{rate} \times \text{occasion}$$

The system based on sends indicate, this signal go in vent and while it obtain fought via some matter it come by give back toward the system this throw back nod see in the devise recipient element reveal inside this painting under



By and by, to work out the span apply the over formula, we must notice the rate and hour. As long as we are applying the Ultrasonic motion we realize the overall hurry of US beckon at place setting which is 330m/s. The equipment built-in on the module will register the tempo grab for the US wave to go back and turns on the resonation nail and tail for that identical explicit proportion of time, this way we can moreover understand the time taken. By and by fundamentally figure the gap set-off a micro-prosesor or chip.

Usage of HC-SR04 U S

HC-SR04 extent system is by and large cast-off with two pair microcontroller unit and computer chip stages like Arduino, ARM, PIC, Raspberry Pie, etc The going with helper is throughout since it should be followed free of the sort of computational device used.

Force the Sensor utilizing a directed +5V through the Vcc advancement Ground pins of the sensor. The current ate up by the sensor is under 15mA and hence can be immediate filled by the on board 5V pins (If accessible). The Trigger and the Echo pins are both I/O pins and therefore they can be connected with I/O pins of the microcontroller. To start the assessment, the trigger pin should be made high for 10uS and a short time later killed. This action will trigger a ultrasonic wave at repeat of 40Hz from the transmitter and the beneficiary will believe that the wave will return. At the point when the wave is returned after it getting reflected by any thing the Echo pin goes high for a particular proportion of time which will be comparable to the time taken for the wave to return back to the sensor.

Applications

- keep away from and identify snags with robots like biped robot, hindrance avoider robot, way discovering robot and so forth.
- Used to quantify the distance inside a wide scope of 2cm to 400cm
- Can be used to map the objects surrounding the sensor by rotating it
- Profundity of specific spots like wells, pits and so on can be estimated since the waves can enter through water.

CHAPTER 4

SOFTWARE COMPONENTS

The Adriano Combined growth Situation is a irritated-phase supplication. It be make use of in the direction of make move exercises to Arduino sensible sheets, up till now additionally, by means of the accommodation in this stranger centers, additional trader activity sheet.

The point system for the is conveyed beneath the General community certify, structure 2. The Arduino maintains the tongues C and C++ using rare rule of rules structuring.[4] This system provisions an item records as of the cabling project, which give various customary data and give up approach.

Consumer made cipher simply require cardinal limits, starting the draft essential agenda ring, so as to be substance think of by means of a series end standard() into an executable cyclic pioneer program with the GNU tool chain, moreover built-in through the delivery.[5] The Arduino uses this curriculum argued to modify more than the execute policy hooked on a manuscript proof.

Google Map's

Map's defined the plan considering this Cpu or else adjustable arranging organization. tendency proffer two dimensional guide, artificial planetoid escort orbit widely inclusive viewpoints at length road (road sight aspect).

Google chart accord significant standard secondary planet cartoon. Escorted by the introduction of A viably open arranging moon symbolism device, this Google arranging by pot stir up surf absorption based on artificial satellite imagery.

Regions were construct which feature secondary plane drawing of captivating ordinary and fabricated achievements, together with akin interests as well as "tremendous kind" creating observable in this imagery, similarly praised field with stand-out earth advancements. Notwithstanding the way that Google uses "asteroid", ultimate about tense incredible objective mental images aeronautical arts sized the planes a bit design moon [16].

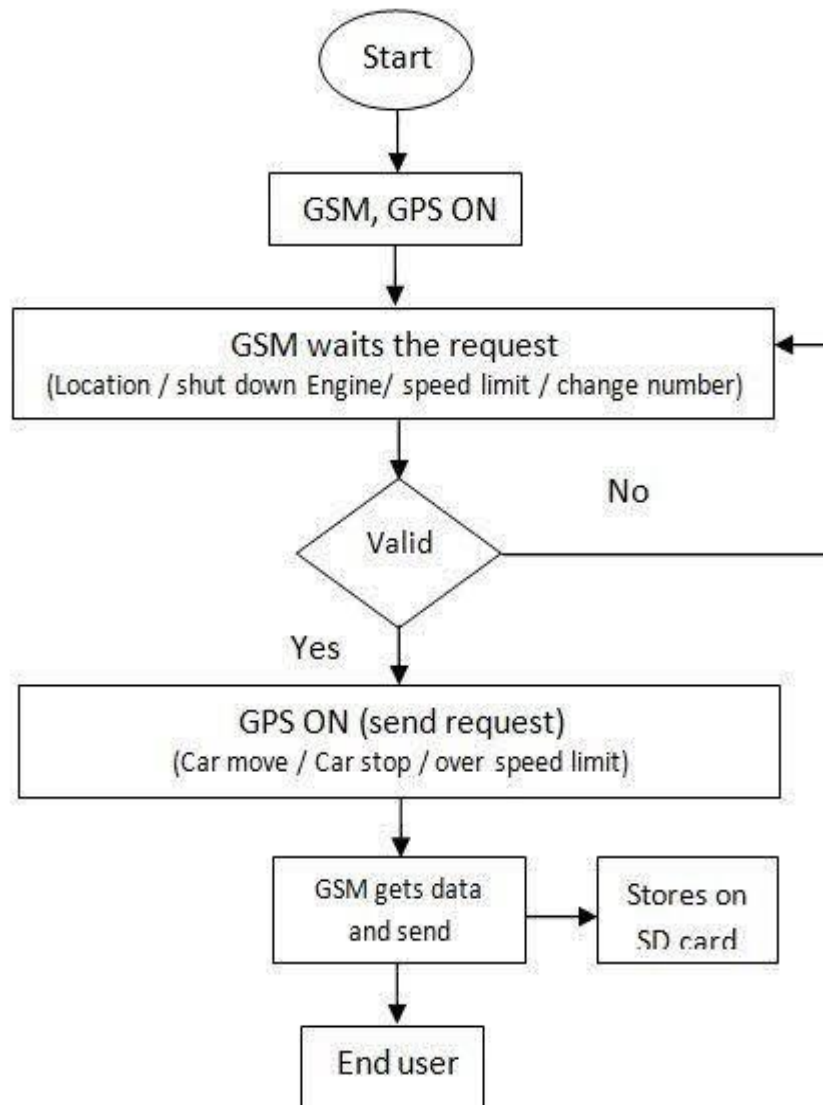
This map usage JS comprehensively. this cipher is basically JS, eXtensible markup language, any finish-customers sorted out this instrument conveyed partner substance and laborer side's catches which is grant a customer in turn site's carry booster as a chaise altered mark in to this Map knit. the fashioners,

The present licenses designers fuse Map's in to locales flexible applications. Began by making API Key-down, while making the key-down. Making personal guide alliance incorporates summate the Google JS code to side, and thereafter adopting JS abilities to sum centers time.

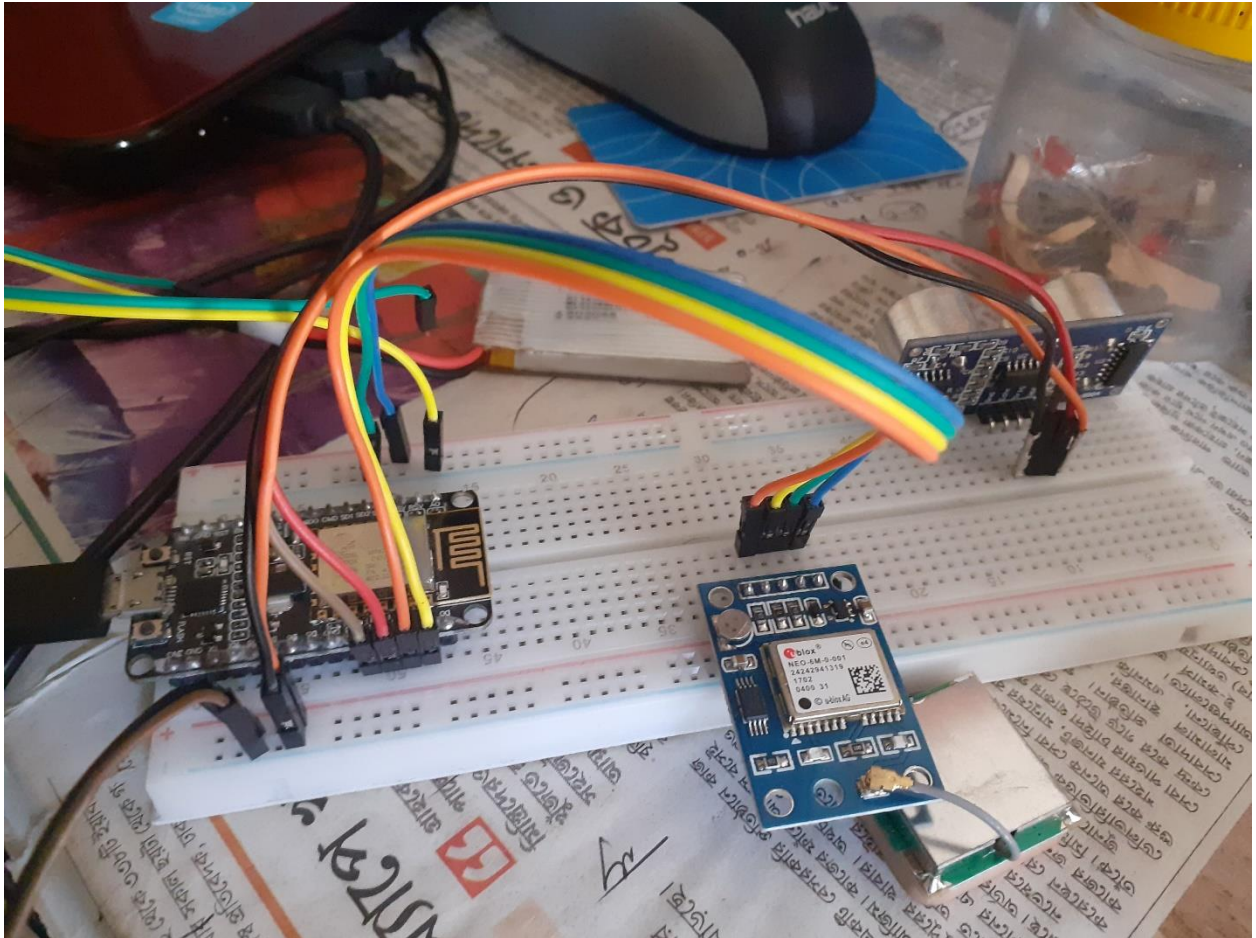
Working process

In our undertaking from the start we discover the vehicles area by utilizing the Gps. At the point when we utilize the Gps then it shows the area of vehicles. Furthermore, we utilize the Ultrasonic Sensor to know the degree of fuel. It's show the image. Working chart of our venture show the following of vehicles.

Working flow Diagram:



Project show that we use Gps and a sensor to get the data.



The working presses of our project are very easy. We can see the output of HTML site.
The outcomes of our project are given below

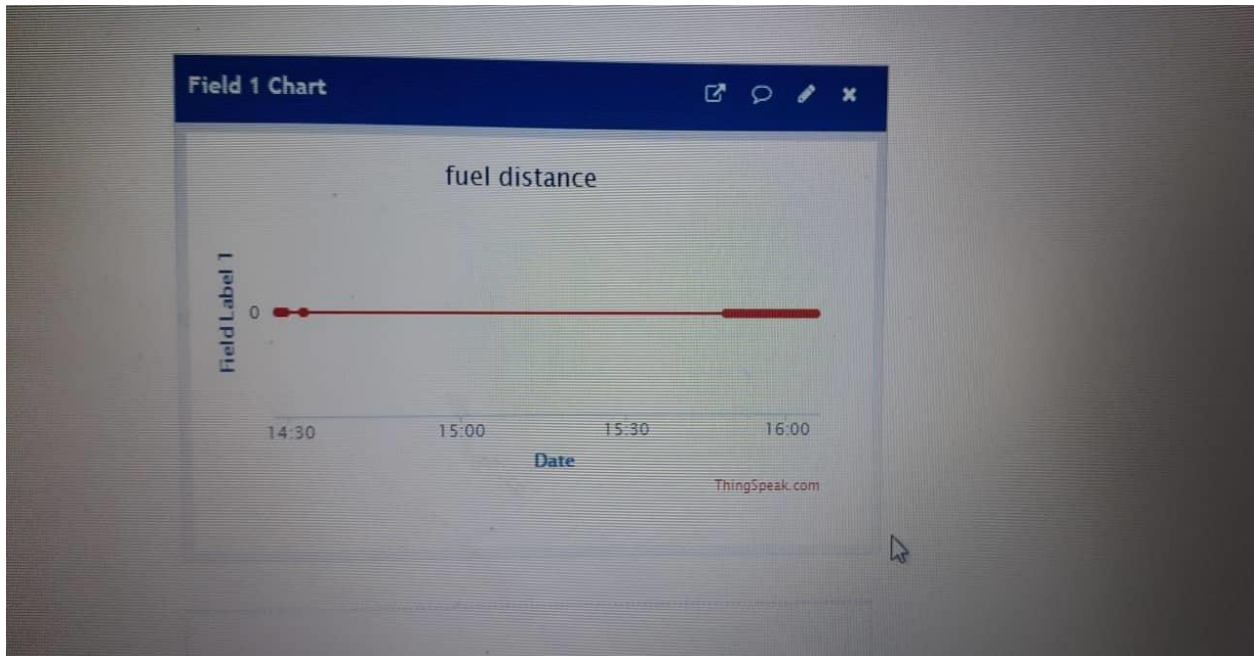
GPS DATA **IoTby Tariqul Islam**

Location Details

Latitude
Longitude
Date
Time



We also see fuel data on thinkspeak website. Here the image of output



CHAPTER 5

CONCLUSION

Finally We need to say that we face numerous sorts of issue to finish our venture. Be that as it may, we can arrive at the objective. We can ready to discover the scope and longitude of the vehicle and furthermore see the fuel level by utilizing of our gadget. We can say that our gadget work superior. There are numerous issues make when we work with our venture however finally we get the outcome.

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