IJARCCE

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Vol. 10, Issue 6, June 2021

DOI 10.17148/IJARCCE.2021.10664

FUEL REMINDER

Kolipaka Neeraja[1], Konda Tharunya[2],Meduri Triveni[3], Mannava Divya[4],Mallempudi Laasya[5] Siva Sankar

B.Tech Student, Department of CSE, KKR&KSR Institute of Technology and Sciences,Guntur, AP, India[1-4]

Associate Professor, Department of CSE, KKR&KSR Institute of Technology and Sciences, Guntur, AP,India[5]

Abstract: IOT is extensively used in everyday objects and its popularity is increasing day by day and Fuel reminder is a which keeps track of the fuel level and the location of a vehicle taking the assistance of GPS tracking system. It notifies the driver of the vehicle when the fuel in the petrol tank of the vehicle reaches a certain level reminding him to refill the tank. It also shows the nearby petrol filling stations with the price.

Keywords: fuel level, ultrasonic sensor, nodemcu,fuel tank.

I.INTRODUCTION

Nowadays the whole world has become digital so that we can easily deal with real time systems. At same time digital fuel meter also implemented in recent vehicle system but actual fuel present in fuel tank of bike not shown in term of digits that show in terms of bar or deflecting needle so that we did not get idea about actual fuel present in fuel tank of bike it only show level of fuel present in fuel tank. To solve this problem we developed a system digital fuel meter that indicates the value of fuel in digits and fuel theft value of fuel shown in digits such as 1lits, 1.5lits, 2lits etc. The digital fuel meter is applicable only for two-wheelers bikes. In our project we can add features such as distance travelled by bike within a certain amount of fuel so that we can calculate the performance of the bike in terms of mileage. Sometimes customer fill fuel in terms of petrol from petrol filling pump they filled the petrol in digitally but in our bike there is no digital system there is bar or deflection needle system so that it not give the accurate fuel filled by customer so the petrol filling pump owner is cheated on customer but customer do not know about cheating due to traditional system because sometime fuel may minimum or maximum than filled value. All benefit goes to the petrol filling pump owner so that they many times cheated with customers. All vehicles have a bar or deflecting pointer measurement system so that they don't know the exact amount of bunk into the bike so that the owner of the petrol bunk station easily cheated the customer. Thus the idea of Digital Fuel Meter is applicable for fuel indication and fuel theft. Also helpful to avoid cheating of customers from petrol filling station owners. In the existing world, the population of the people increases day by day, so the need of the vehicle also increases. While filling the fuel in petrol bunks, people may not know whether the2 fuel is filled to the correct level for the amount given by them and gets cheated by the staff who are in the bunk at some time. During the travel, maximum people are not aware of the distance covered for the rest of fuel present in a vehicle. To overcome this drawback we have proposed this work. The sensor used in this project is a float sensor to indicate the level, this sensor does not emit any type of rays and will not damage the vehicle. When the fuel is poured inside the tank, the level is analyzed and indicated at the moment itself in the digital form, with this data the distance covered by the vehicle is also shown. .

A. Problem Statement

Users can check the fuel quantity and When the fuel is about to run out the user gets the notification about fuel.

B.Literature Survey

The existing system is provided with a fuel indicator showing only the presence fuel in the vehicle. When the fuel in the vehicle runs out the driver needs to worry in the middle of his/her way.

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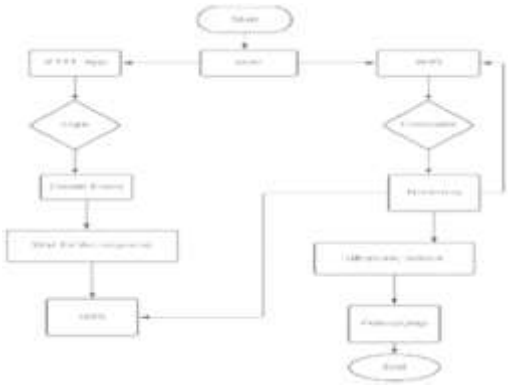
II.PROPOSED SYSTEM

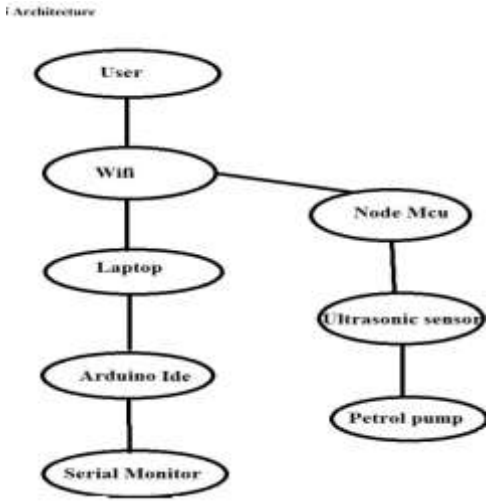
A.Flow Chart



B.Proposed Idea

The proposed system has an ability to accurately measure the Mileage of the car from the database that is available on the web application, by which the users are able to interpret their car's Mileage, speed, fuel consumption and finally time for maintenance. They also know the difference between before maintenance and after maintenance of the car. It will be easy for the user to get accurate measures instead of using meters. The main functions of the project are to collect the mileage calculating factors through sensors and through wireless networks send those values to the module to the database. Fig. 1: Architecture Diagram for fuel efficiency monitor A. Scheduled Fuel Filling Even a regular vehicle user, do not know when to fill the fuel for the vehicle as and because one used to fill it on a weekly or daily basis. And now particularly for a new person it becomes a difficult task to identify the level of fuel. So it becomes a customary problem for a long traveller. Here an experimental work has been carried out to suggest an equation to predict the time of filling based on the "distance basis". B. Fuel Theft Almost all of the public have their own vehicle. Now-a-days fuel theft is happening in the parking lot and vehicle security becomes a challenging thing. In practice by today no record of data is being maintained for fuel filled and its consumption value. To overcome this challenging problem a fuel monitoring system is being implemented. This task is being carried out by the use of embedded systems based on Global System along with mobile communication technology. A system has been developed in which fuel theft occurs, the system reports automatically via GSM module by sending an SMSsending an SMS message to the owner/driver of the vehicle. www.ijsrd.com 196 C. Economic use of Fuel While driving with normal speed the driver knows the amount of fuel remaining but he doesn't know how much distance can be travelled with the remaining fuel. By implementing the fuel consumption system it will provide the driver with the information about things like the time to fill the vehicle with fuel and also provide with an idea about the estimated distance to which the vehicle can travel with the available amount of fuel.

III.SYSTEM DESIGN



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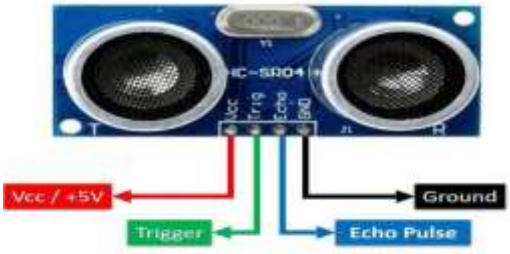
The level of fuel is calculated with the help of the flow sensor and the ultrasonic sensor. Due to the presence of the ultrasonic sensor there may be a emission of ray from it. If there is any emission of rays it may lead the explosion of the vehicle. The Ultrasonic sensor is used for calculating the amount of fuel in the vehicle and also detects whether the vehicle may lead to any accident during the travel time. fuel float sensor which is a Indicator unit measuring and displaying the amount of electric current flowing through the sending unit. When the tank level is high and maximum current is flowing, the needle points to “F” indicating a full tank. When the tank is empty and the least current is flowing, the needle points to “E” indicating an empty tank.

User Requirements

− Ultrasonic Sensor
− Node MCU (ESP8266 WIFI)
− Jumper Wires
− Fuel Tank.



ULTRASONIC SENSOR

NodeMCU ESP8266

Ultrasonic sensor Specifications

· Operating voltage: +5V
· Theoretical Measuring Distance: 2cm to 450cm
· Practical Measuring Distance: 2cm to 80cm
· Accuracy: 3mm
· Measuring angle covered:

Nodemcu Specifications

· Microcontroller: Tensilica 32-bit RISC CPU Xtensa LX106
· Operating Voltage: 3.3V
· Input Voltage: 7-12V
· Digital I/O Pins (DIO): 16
· Analog Input Pins (ADC): 137
· UARTs: 1
· SPIs: 1
· I2Cs: 1
· Flash Memory: 4 MB
· SRAM: 64 KB
· Clock Speed: 80 MHz
· USB-TTL based on CP2102 is included onboard, Enabling Plug n Play

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· PCB Antenna
· Small Sized module to fit smartly inside your IoT project

VI.CONCLUSION

This paper developed a fuel management system that measures tank's fuel level to be displayed through web based application and design of camera surveillance systemssystems for stations. At the same time this management system can store the transaction information in the database that can generate daily, weekly, monthly and yearly business reports. This system is more efficient, reliable and cheap compared to existing systems. In addition, the system has been successfully designed to operate independently of the power grid, by utilizing solar panels. These panels additionally charge the system's batteries so that it remains powered at night or during cloudy days. The system employs two different sensors: The ultrasonic sensor, and the chemical Etape. Although cheaper than the latter, the results produced by the ultrasonic sensor suffer from inaccuracies caused by the gasoline thick vapors. The chemical Etape, being more expensive, resolves this issue and possesses a higher resolution.

VII.FUTURE ENHANCEMENTS

We can add features like a GPS tracking system to find the location of the nearest fuel filling station. And also we can add the voice notifications to the system to know the level of fuel in the petrol tank. The proposed system will provide an accurate and real-time fuel monitoring system. This is a suitable and practical solution for fuel monitoring and location tracking. Therefore this system can be implemented in every vehicle to avoid facing fuel theft, finding the nearest fuel pump and vehicle location. The authors used a central monitoring system to control all vehicles by using the mobile application.

ACKNOWLEDGMENTS

Our sincere thanks for the opportunity given to work in the Department of Computer science and Engineering, KKR and KSR Institute of Technology and Sciences. We express our gratitude to Dr.Gudipati Murali for the motivation and guidance provided. Thanks to our Department of Computer Science and Engineering for testing and deploying our model.

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