

Minor : SMART FUEL INDICATOR

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Introduction

The proposed fuel indicator in vehicle utilizes simple and digital visuals for indicating the amount of fuel in the fuel tank. This overcomes the major drawback of analog fuel gauge present in the vehicles. In a **resistive type fuel gauge**, the sending unit contains a **float**, whose one end is mounted to the **potentiometer** and the other end in the fuel. The potentiometer value is **varied according to the level** of fuel present in the tank. Hence, there is a need for a better system **Digital fuel gauge displays** on the other hand the amount of fuel left in the tanker by **measuring its quantity in terms of liters** instead of indicating the level which leads to **better accuracy** and mileage calculations for the use

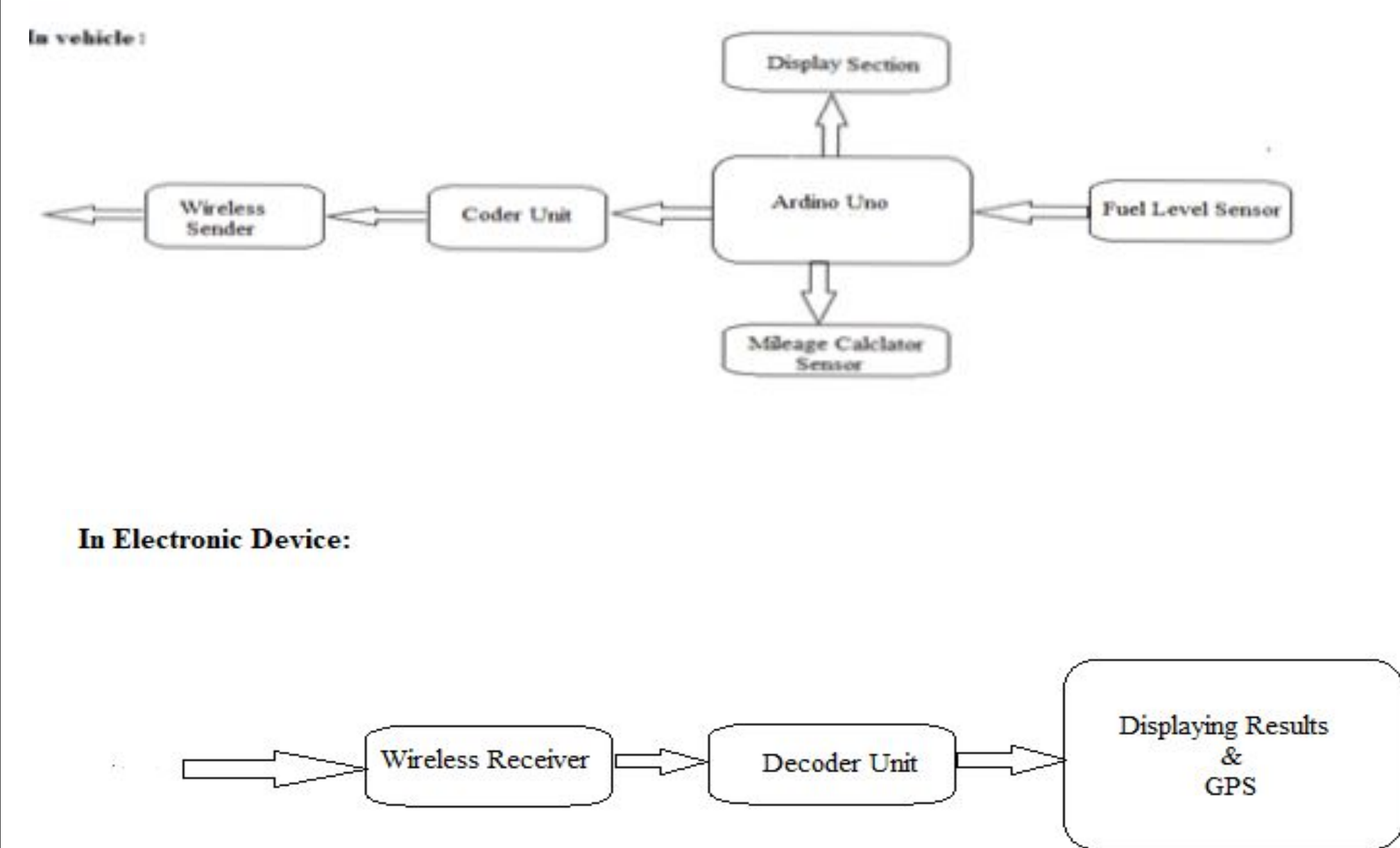
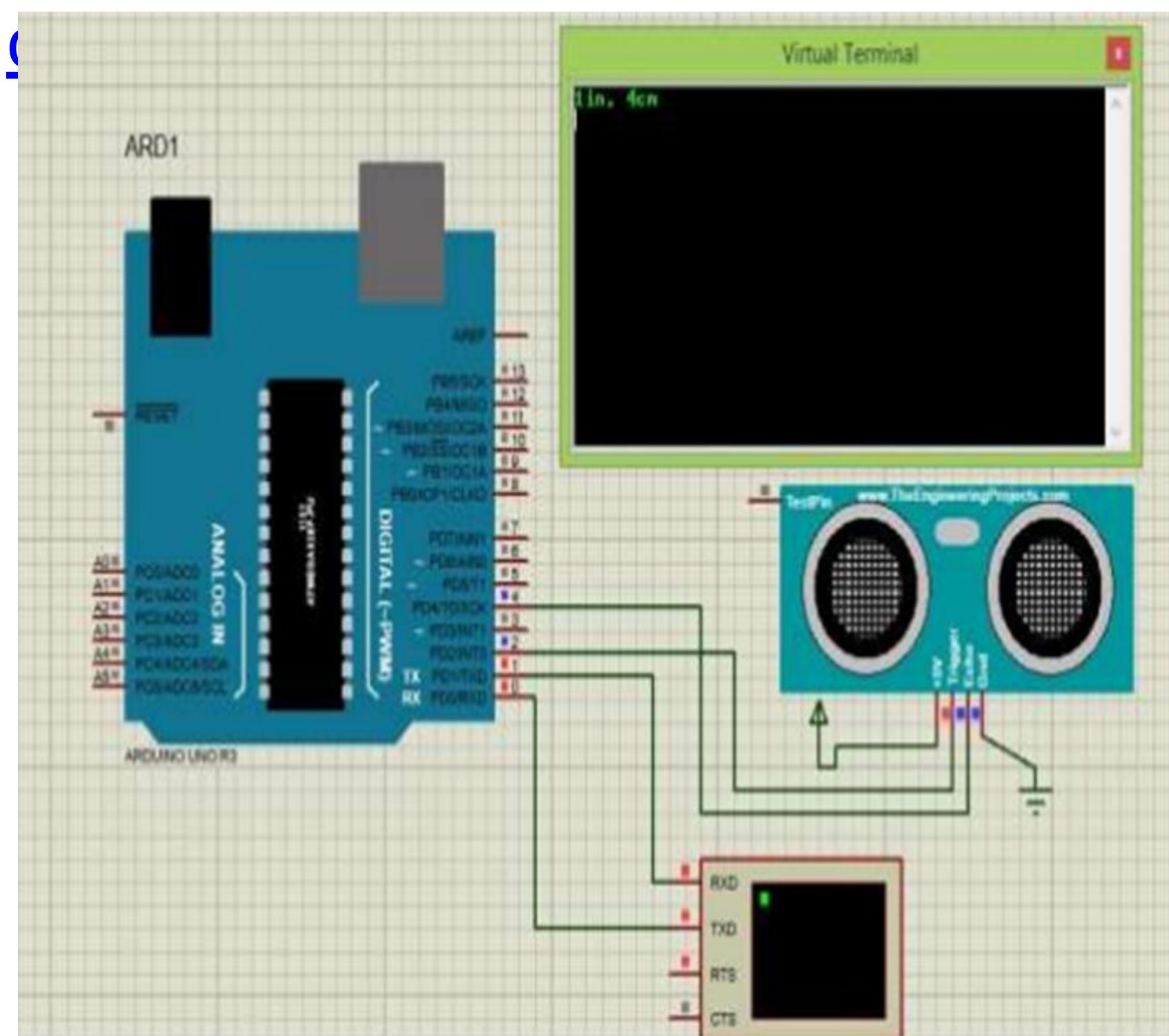


Aim

Digital Fuel Meters have a **higher precision and accuracy** compared to the **traditional and analog fuel gauges**. Malfunction in the variable resistor, capacitor or the sending unit might lead to inaccurate fuel level measurement and generally leads to misconceptions by the consumer. Thus, a Digital Fuel Gauge is designed to provide a better result to the consumer by giving the measure of the exact amount of fuel in the tank. Central Monitoring Station is designed to provide the consumer an option of accessing the fuel levels of tankers in various locations in an Integrated DB Interface.

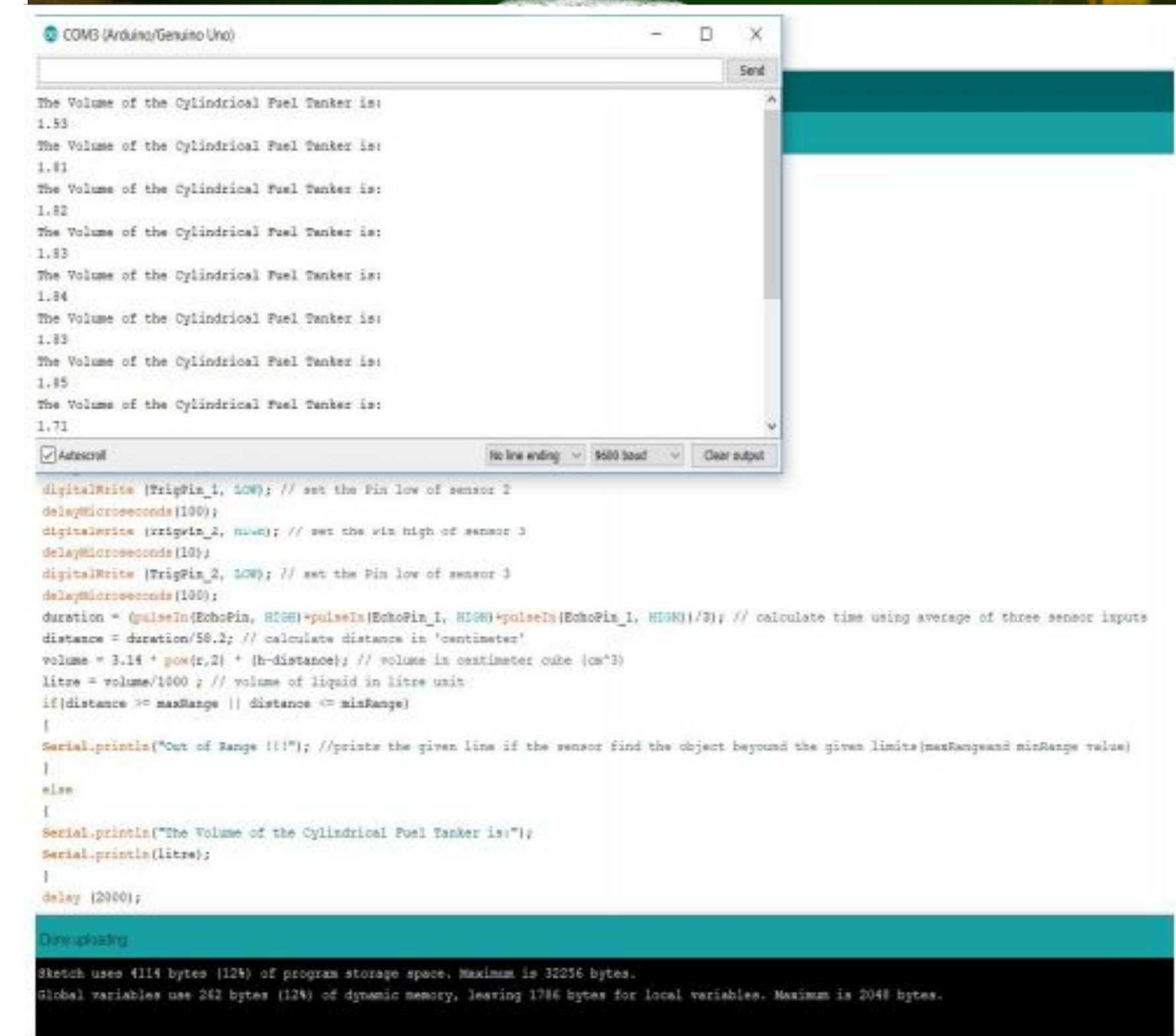
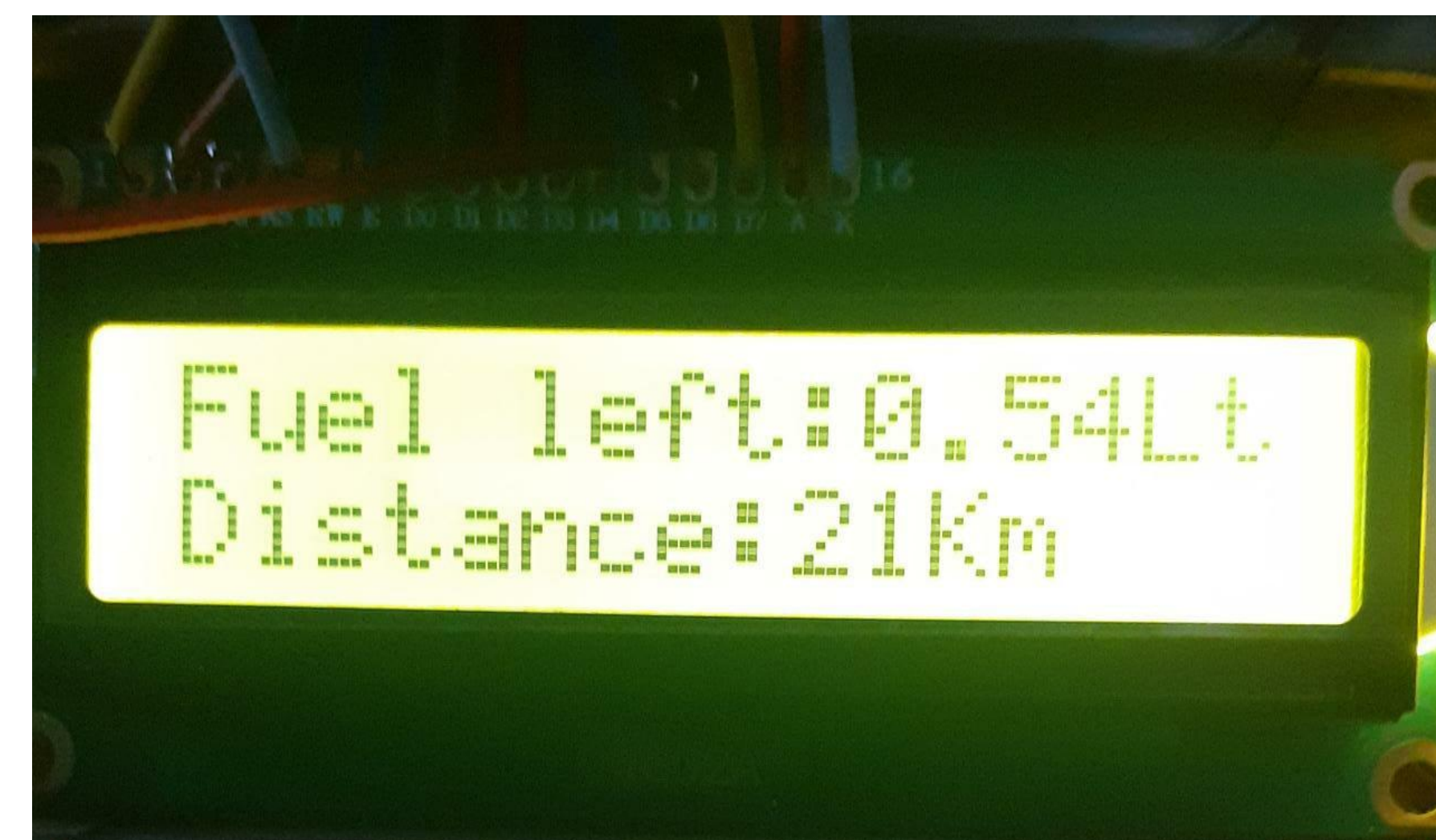
Method

- **Arduino** is an [open-source hardware](#) and [software](#) company, [micro-controllers](#) for building digital devices.
- Arduino board designs use a variety of [microprocessors](#) and controllers. The boards are equipped with sets of digital and analog [input/output](#) (I/O) pins that may be interfaced.
- The **HC-SR04 ultrasonic distance sensor** uses **sonar to determine distance** to an object with **stable readings and high accuracy of 3mm**. The module includes ultrasonic transmitter, receiver and control circuit.
- A **liquid-crystal display (LCD)** is a [flat-panel display](#) or other [electronically modulated optical device](#) that uses the [light-modulating properties of liquid](#)



Result

Digital fuel gauge displays the amount of fuel left in the tanker by measuring its quantity in terms of liters The proposed system aim is to measurement of the fuel in the vehicle tank using ultrasonic sensor. The ultrasonic sensor has a better accuracy and it is easy to calibrate and interface it with a arduino controller. The ultrasonic sensor sends ultrasonic waves and reflects it back to the receiver unit of the ultrasonic sensor. In this way we can find the level of fuel in the tank if we know the time required by the ultrasonic sensor to travel and mileage



Advantages

- This Smart digital fuel indicator system gives the exact measure of quantity of the fuel left in the tank
- The system gives the visuals for indicating the distance that the vehicle can cover with that amount of fuel
- Connecting it to a database for excellent data integrity and independence from applications programs

Further refinements

Further we have planned for improving android-based application which helps the user in conveying the useful information concerning fuel and shows the location of nearby fuel station.

CONCLUSION

The smart digital fuel indicator is very advance type indicating system. The main advantage of this system is that it can provides accurate value of fuel remaining as well as the estimated distance we can travel, with utilizes simple and digital visuals for conveying useful information to the user. All the equipment's have long life, durable and easily available. The main Features include Database Server, Web Interface, and serial communication. Hence, conclude that the required goals and objectives of our project have been achieved.

Acknowledgments

I would like to express my special thanks of gratitude to our teacher **Prof.Mahalakshmi Mam** as well as our HOD **Dr. Usha mam** who gave me the golden opportunity to do this wonderful project **Smart fuel indicator**, which also helped me in doing a lot of Research and I came to know about so many new things I am really thankful to them. Secondly i would also like to thank my parents and friends who helped me a lot in finalizing this project within the limited time frame.