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Fuel Theft Alert and Monitoring System

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***Abstract*—The Project works in the field of the fuel management system, which handles the theft alert and sensors, logs which determines the live situation of the fuel tank. The sensors like temperature, level and pressure are used for the observations of the tank while GPS tracking is for the tracking of the fuel tank during the transportation and for the human security there is RFID card, which configure that delivery of fuel, is done by the correct person. The cloud computing of the data will help the industries to see the data any were in the world at any time.**

Keywords—Sensors, Interfacing, Cloud Storage, Tracking, GPS

I. INTRODUCTION

As we all know, today fuel is a non-renewable energy on the earth and this makes fuel a precious thing for the humanity. Industries, which use fuel, are having a headache of fuel theft and fuel related problems.

The major problem seen by the world of fuel is fuel theft and for that, they do not have any major solution or parameter to have control on it. We hereby have a project titled "Fuel theft Alert and Fuel monitoring system".

Our project mainly monitors the fuel in tank with GPS tracking of the tank with RFID Verification of the human on truck and with additional feature of the panic button in the fuel tank the tank contains three sensors temperature, Pressure and fuel level sensors.

All the three sensors have their unique feature, which helps to get the data of tank. The temperature sensor gives the temperature sensor gives the temperature of the tank while Pressure sensor tells about the pressure of the tank while the level sensor is the sensor, which tells us about the level of the fuel inside the tank.

All the data collectively stored to the cloud and the alert and data is sent to the data centre to measure all the parameters on the tank and calculate the data given for the safety and for the industries to check consumptions and security of the fuel and to maintain the log for the annual budget of the industries.

The main purpose of the product is to give security to the fuel and to manage the fuel related problems of the industries.

II. EASE OF USE

Fuel Management system making the logs on the given data by the sensors and tracking.

Keeping the logs of the sensors of temperature, Pressure and level to maintain the standard for the accounting of the fuel to the industries.

The GPS tracking of the truck for the safeguard of tank and in case of emergency to take proper decision for the situations.

RFID for ID solution that make sure that fuel is delivered to right recipient.

III. LIST OF COMPONENTS

Arduino UNO
Temperature Sensor
MQ2 Sensor
Level Sensor

IV. BLOCK DIAGRAM

Internet of Things (IOT) is a concept that considers pervasive presence in the

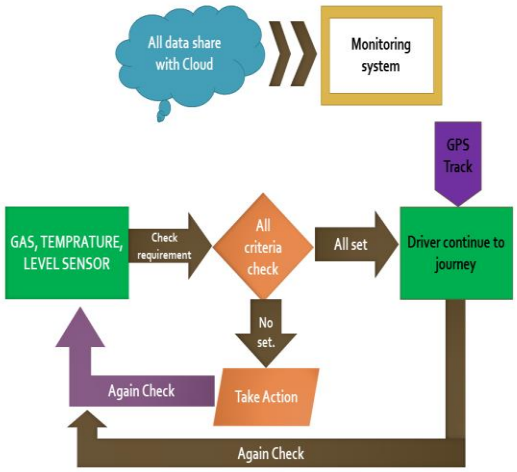

Fig. 1

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environment of things and unique addressing scheme to interact with each other. Cloud computing is an emerging computing technology that uses the central remote server to maintain data and application. Internet Of Things (IOT) is a concept and a paradigm that considers pervasive presence in the environment of a variety of things that through wireless and wired connections and unique addressing schemes are able to interact with each other and cooperate with other things to create new applications/services and reach common goal.

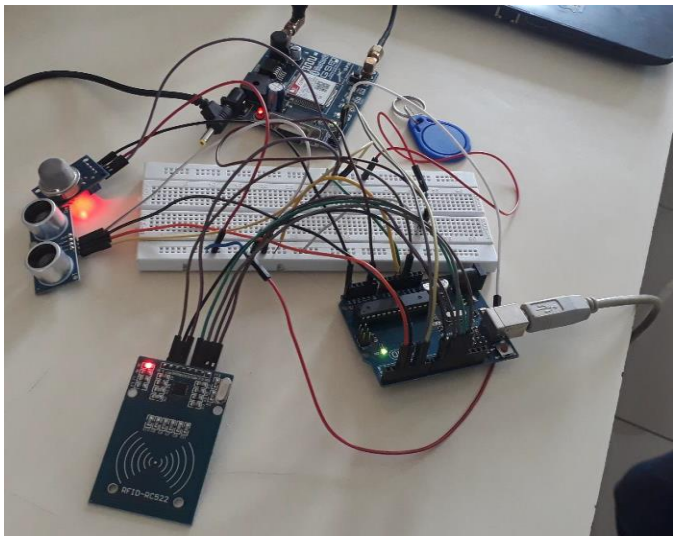

Fig. 2 Sensors Interfaced Using Arduino UNO

V. CIRCUIT DIAGRAM

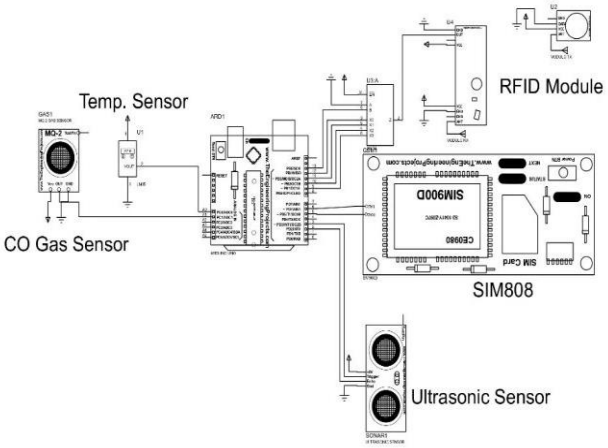

Fig. 3 Circuit Diagram

For the aim of real-time monitoring and dynamic mobile data-recording, this study developed a fuel consumption calculating system, which combined Vehicle Tracking System (VTS), GPRS/3G, GPS and Web Server by using Machine to Machine (M2M) framework. In this design, the VTS could extract the necessary information from the vehicles, and with GPRS/3G and GPS techniques, it could achieve both data instantaneity and location preciseness.

Before the GPRS/3G and GPS technique applied in fuel measurement, the fleet managers could only record calculates and analysis car-driving data by paper-works, the calculation, analysis and data proof of fuel consumption were the most important parts and advantages.

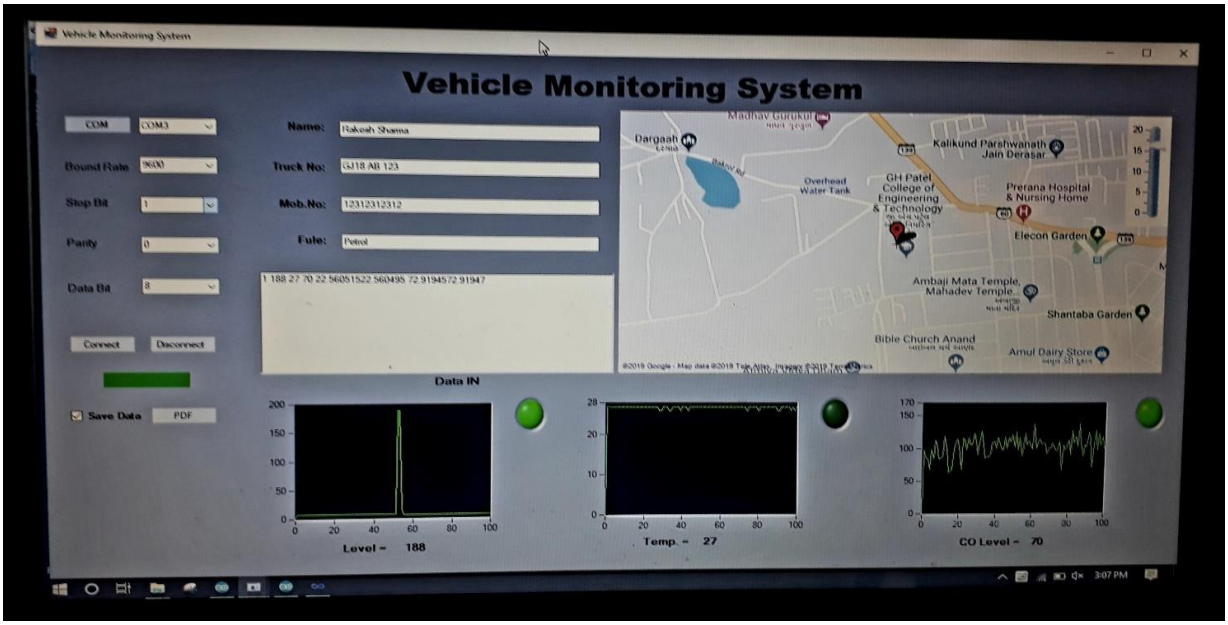

Fig. 4

Data Centre Monitor screen with graphs

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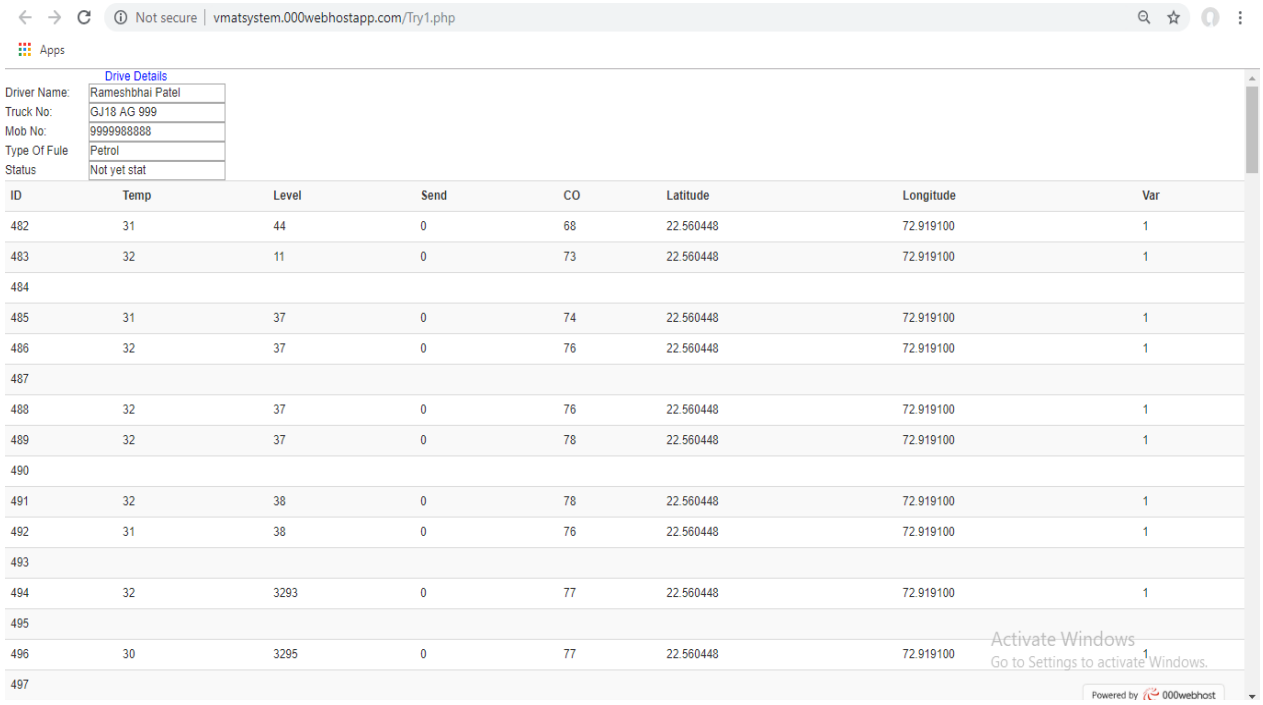

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Apps

Drive Details

Driver Name:	Rameshbhai Patel
Truck No:	GJ18 AG 999
Mob No:	9999988888
Type Of Fule	Petrol
Status	Not yet stat

ID	Temp	Level	Send	CO	Latitude	Longitude	Var
482	31	44	0	68	22.560448	72.919100	1
483	32	11	0	73	22.560448	72.919100	1
484							
485	31	37	0	74	22.560448	72.919100	1
486	32	37	0	76	22.560448	72.919100	1
487							
488	32	37	0	76	22.560448	72.919100	1
489	32	37	0	78	22.560448	72.919100	1
490							
491	32	38	0	78	22.560448	72.919100	1
492	31	38	0	76	22.560448	72.919100	1
493							
494	32	3293	0	77	22.560448	72.919100	1
495							
496	30	3295	0	77	22.560448	72.919100	1
497							

Activate Windows
Go to Settings to activate Windows.

Powered by 000webhost

Fig. 5

Website Screen with sensor's reading

Fig. 6

Mobile Screen with Sensors reading and location with Help message.

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VI. SUMMARY

The Fuel Monitoring System will provide the security to the fuel which will help fuel industries to be stress free about the fuel transportation and fuel theft.
The sensors will take the logs and will help in the accounting of the fuel industries while GPS tracking is for monitoring the Fuel tank while transporting the fuel.
For the Human verification RFID card is used which will help to know that delivery is done by the right person.

VII. SCOPE OF WORK:

In monitoring system the sensors can be more and the safety to the tankers can be provided.
Information transformation and representation of web-application. In future there can be enhancement of this application.

Enhancing the system security from unauthorized access is also open issue.

VIII. REFERENCES

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