Computerized Petrol Distribution System Using IOT

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***Abstract*: As we know that now a days at Petrol distribution system there is a wastage of petrol because of increase in vehicle usage. This purpose of petroleum management is to manage proper distribution of petrol with the help of computerized equipment and full-fledged computer software. Purpose petroleum management system can lead to error free, secure, reliable and fast distribution of petrol to several petrol station. In this system solenoid valve is used for automation and sensors like flow sensor, leakage sensor for sensing the flow as well as the leakage of petrol. As the petrol is distributed with the help of gate and it is handled with the help of humans, so easy manipulation of gate is not possible. Opening gate for extra time will lead to wastage of petrol. This system will distribute petrol properly to the organization and avoid situation like fraud with customers. This system will also count the amount of petrol going from refineries to petrol station with the help of flow sensor. If the petrol pipe is leaked then that could also be detected using different sensors like leakage sensor. This system will detect the leaked location and send it to admin, As per the requirement spiced by organization the computerized system will open the valve for the time span which the organization will request. When the time gets over the valve will get closed automatically that could be detected and action will be taken on it. Due to which the gate can be controlled by Web Application, The system will notify the organization before supplying the petrol with the means of message on their phone.**

***Keywords*: Sensors, solenoid valve, IOT.**

1. INTRODUCTION

This system will detect the leaked location and send it to admin, As per the Requirement specified by organization the computerized system will open the valve for the specific time span which the organization will request. We are also counting the amount of petrol going from one petrol station to the customer vehicle with the help of the flow sensor. If the petrol pipe is leaked then that also could be detected by the leakage sensor used in the system. This purpose of petroleum management is to make petrol distribution organized and efficient as petrol is available in very less amount. Petroleum management system can lead to error free, secure, reliable and fast distribution of petrol to particular area. We are using solenoid valve for automation and sensors like flow, Leakage sensor for sensing the flow as well as the leakage of petrol.

OBJECTIVE OF THE PROJECT

• The major goal of this project is to make the petrol supply convenient, which could be easily supplied to the organization**.**

• Other than this it need to be made automatic so that all the process is to be done with the help of computerized applications or android app.

• Because of this automation the amount of petrol supplied to the petrol Station will be equally distributed as per the requirement of the petroleum.

• All the work will be done automatically such as opening solenoid valve and closing them.

• Data is going to be centralized so a centralized work can be managed easily.

2. Algorithm

2.1 Algorithm Steps

• Link the database to the system.

• Take proper input from the user and petrol station via registration form and store the data in the database.

• Then system will analyze the requirement and send signal to Arduino for provide the further features like time span, notification.

• Based on the requirements the bill will be generated by our system and user can directly pay by using payment gateway.

• The system automatically open the particular gate for particular time and send notification to the organization.

• All different gates can be open simultaneously from the system as per the requirements.

• When the whole time span will be over, Then system will close the particular gates automatically.

• If the leakage is occur then its will calculate the time and the co-ordinates of the area.

• The total amount of the petrol is been calculate by using the flow sensor.

2.2 AES Algorithm Details

AES is an iterative rather than Feistel cipher. It is based on substitution permutation network. It comprises of a series of linked operations, some of which involve replacing inputs by specific outputs (substitutions) and others involve shuffling bits around (permutations).

Interestingly, AES performs all its computations on bytes rather than bits. Hence, AES treats the 128 bits of a plaintext block as 16 bytes. These 16 bytes are arranged in four columns and four rows for processing as a matrix.

Unlike DES, the number of rounds in AES is variable and depends on the length of the key. AES uses 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 rounds for 256-bit keys. Each of these rounds uses a different 128-bit round key, which is calculated from the original AES key.

• You take the following AES steps of encryption for a 128-bit block.

• Derive the set of round keys from the cipher key.

• Initialize the state array with the block data (plaintext).

• Add the initial round key to the starting state array.

• Perform nine rounds of state manipulation.

• Perform the tenth and final round of state manipulation.

• Copy the final state array out as the encrypted data (ciphertext).

3. SYSTEM ARCHITECTURE

3.1 SYSTEM WORKING

Petrol has been a major issue in India as we have petrol crises in India, The ratio of vehicle usage have increased in this 2-3 years because of which petrol usage has also been increased and no proper management have been done. As we know that nowadays the tanker are used to supply petrol to specify petrol station, due to which some amount of petrol is been wastage, other than that their is large amount of investment for this system. Organization need to fill offline forms for their registration for getting petrol to their organization. Other than that people need to pay the amount in cash. By introducing this system the issue of petrol usage will be solved and petrol can be saved in more amount. This system will provide petrol to the organization as per their requirement. As all the petrol management is been done automated, so there will be a centralized database and proper distribution of petrol will be done. Here we have online forms for organiza- tion to register themselves on the system. We have added online payment option in this system using payment gateway. Notification will be given to the particular organization about the petrol supply. Sensors are been added to check the amount of petrol distribution.

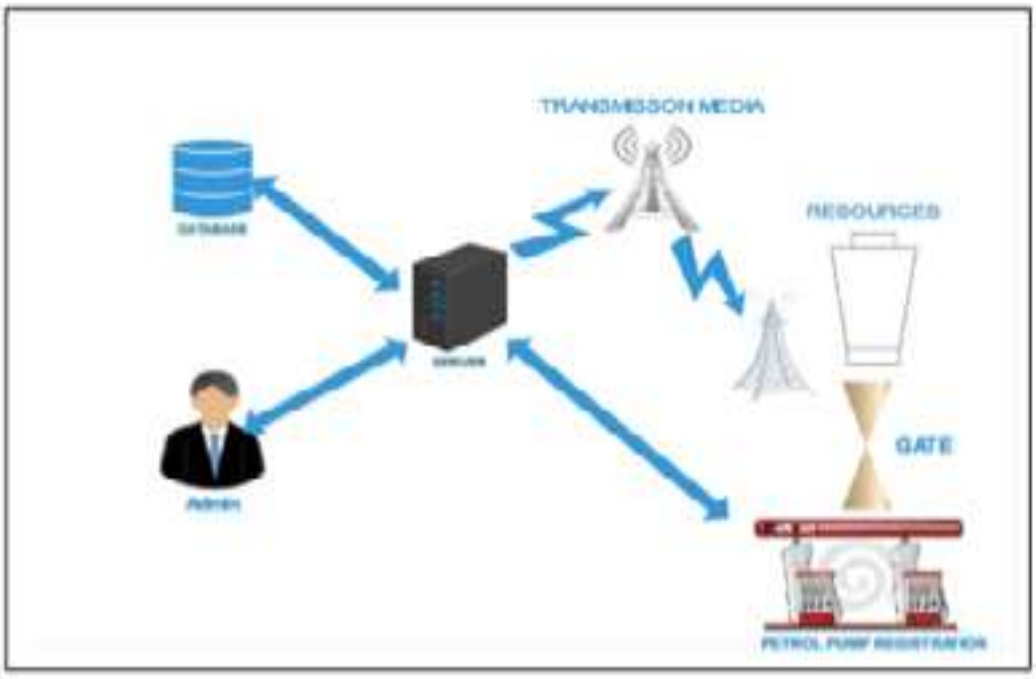

Figure: System Architecture

4.EXPECTED RESULT

4.1 Experiments need to conduct for analysis

In this analysis, we have identified that flow sensor is facing some problem to interface with the system, after couple of tries it has been successfully executed.

4.1.1 Expected output

This system is showing the proper output as accepted, the system database is manage And it is able to open solenoid valve as well as detect the flow and leakage of petrol.

5.CONCLUSION

Propose system is going to help the society for proper petrol distribution and digitization of petrol distribution will leads to go faster petrol distribution. It also make a The product of our digital India concept, It allows organization to get sufficient petrol so that the more usage of petrol is avoided and centralized system is been maintained.

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