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AUTO PETROL PUMP

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ABSTRACT:

The petroleum products are one of the valuable and rare creations of the nature. The proper use and distribution is important task to survive these products. Here we are representing an "Auto Petrol Pump" which will operate without manpower. In this system RFID-card is provided to the user. After swapping of this RFID-card user can get access to fill the fuel in vehicle. One timer is set on the outlet valve of the petrol tank such that it will control the flow of fuel as per user's requirement. This system will be applicable in hilly and remote regions where workers can't work because of safety purpose.

Keyword: RFID-card, valve.

I. INTRODUCTION:

Fuel is one of the most essential things in today's world. We can see number of petrol pumps around us. Our aim is to develop the automatic petrol pump system to reduce manpower and to maintain safety of workers. Generally in remote areas workers are not ready to work during night. This problem is same in the case of hilly areas. Also traditional petrol pump there is exposure of gas, dust and flames. This will be affected to the workers health. For this purpose we are designing this worker free system. Sometimes there may be chance of robbery on pumps because payment is done in the form of hard cash. We are going to replace it by RFID card. So it will be safer than earlier one. As India is now becoming digital, this system will contribute in Digital India program. In this paper first section emphasis on the literature survey and the their work. In second section we have explained about the objective, motivation and the brief history about the petrol pump. Next section includes block diagram and its description. In next section there is flow chart of the system and its detail working. Finally we have conclude overall system.

II. LITERATURE SURVEY:

- The 8051 Microcontroller and Embedded Systems

  Muhammad Ali Mazidi

  Janice Gillispie Mazidi

  Rolin D. McKinalay

- IJCTEE papers

Embedded security system using RFID - IJCTEE ,Volume 2 Issue 1 by, Kulkarni Amruta M. and Taware Sachin paper published in year 2012.

They have developed security system for petrol distribution tankers of Petroleum Company. The simple use of RFID &GSM technologies can provide total security. For distribution of petroleum product .The another paper we referred is Automobile fuel pump control system using embedded system volume 3 Issue 2 by Susanta kumar Behara

III. OBJECTIVE:

The objective of this project is that, to change in the traditional system of petrol filling & make the system more secure. As per need of petroleum product is concern, the consumers get the amount of petrol they require and pay for it after filling it in tank. In this system we are going to do automation of petrol pump. This automatic process will be more secure and also it reduces the manpower required on pump. Our system works on the principle of "Automation". In this system manpower reduces and we achieve more accuracy than ordinary system. This system also useful if we considered safety of workers as well as fuel. This system will help us to proceed one step towards the digitalization.

IV. MOTIVATION:

By using this system we can overcome all the drawbacks which we are facing while using traditional petrol pump. Many times we see rush on petrol pump due to less number of workers. The mode of transaction is in hard cash so there may be the chance of robbery. Workers have to work for late night to provide 24 hours services. So, we are going to provide solution to all these problems through our system.

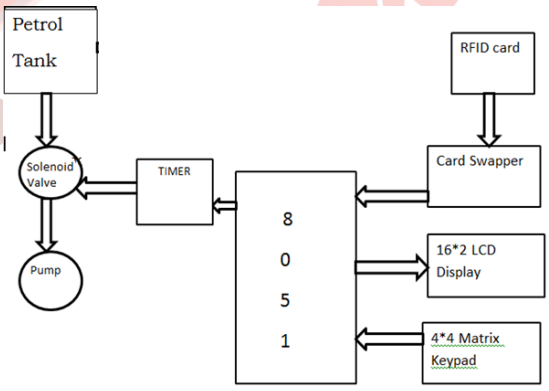
V.BRIEF HISTORY:

Lung reactions to exposure of dust, gases, and flames at work place have been studied in different populations. The emission level of pollutants that emit particulate matter less than 10 micrometers in size (PM 10) has been found very high in Ahmedabad. Hence, petrol pump workers in Ahmedabad are likely to get exposed to a high level of air pollution along with petrol and diesel vapors. Both of these factors can affect the respiratory health of petrol pump workers.

The study concludes that the deleterious effects of air pollution and petrol/diesel vapor inhalation on the lung function of petrol pump workers results in a restrictive type of lung function abnormality. The pattern of respiratory impairment changes to a mixed type as the duration of exposure increases.

VI.THEORETICAL DETAILS AND ANALYSIS:

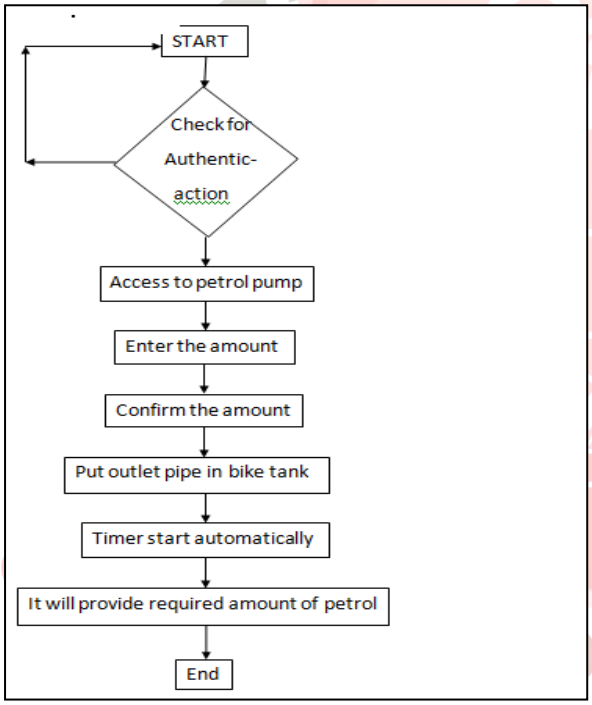
BLOCK DIAGRAM :



This is the block of proposed system auto petrol pump. Microcontroller 89c52 is the major part of the system. Other peripherals are interfaced with the microcontroller. We are using four ports and one timer of controller. Another most important part is RFID system.

RFID is the Radio Frequency Identification and Detector. When RFID card comes in contact with the RFID readers it will get detect. LCD16*2 display various messages given by controller. 4*4 matrix display keypad is used to give input to controller. We are interfacing one of timer of 89c51 with solenoid valve. Solenoid valve is electromechanical valve controlling by electric current. It is used for controlling liquid or gas flow.

II. Flow chart



VII. EXPLORING WORKING OF THE SYSTEM:

1. First the user has to swap his RFID card in RFID reader.
2. If the card is authorized then user will get access to use the fuel of that pump. If it is unauthorized then he will not able to access and system will return to original position.
3. Then system will ask for the password.
4. After entering the correct password system will ask for the amount.
5. User has to enter the amount of which he requires petrol.
6. According to entered amount timer of microcontroller get updated.
7. For that time solenoid valve get open and petrol will come out of that valve.
8. After that timer will stop, valve automatically gets close.
9. Remaining balance of that card will be displayed on LCD.
10. In this way system will work.

VIII.CONCLUSION:

In this project we are going to reduce the man power using the principle of automation. This project will be implemented in different areas where safety purpose matters. This system will give more accuracy and it will be more secure.

In the world of electronics it is important to develop the new technology to make secure the distribution of fuel with authorization of user. Our project is one idea which can change the face of today's manual system of distribution. The total central access of all these activities provide the correct approach toward security and economical need of the industries since industry itself can control distribution of fuel from thousands of miles seated in office. In short, this project probably can be implemented for the petrol distribution, on large scale to achieve various goals of industries.

IX. FUTURE SCOPE:

In petroleum products distribution our system looks for the control on product thefts

which is the most serious problem for the manufacturing industries and reduction in manpower required. It is also possible to implement the same system for milk processing industries while distributing the milk and its products to the market. In day to day life we can see that water distribution in summer is also one of the problems in front of India. So it is possible to keep control on water distribution in particular area. The rationing products like vegetable oil as well as kerosene and its sub products may be securely distributed to the customers using the same system we proposed. Also it is possible to keep record of the distributed products in market which is commercially most important for industries

X. APPLICATIONS:

1. This system can be applicable in hilly and mountain areas.
2. This system can be used in Ice Cold areas.

XI. ADVANTAGES

1. It requires very less power supply i.e. from 5V to 12V only which is easily available.

2. Also as it provides the central control on petrol distribution, thus there is no question of stilling or to change the record of distributed fuel.

3. Easy to handle for customer since only the password provided to him/her need to type on keypad and remaining work takes place automatically.

4. Sensing part helps owner to keep an eye over petrol pump and be alert. B. Limitations this system may suffer at remote area where there

5. It reduces manpower as the system is automatic.

6. Here we are using RFID system for authentication so security is more.

7. This system is most accurate since we are using automation.