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## Self-Operated Petrol Pump

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**Abstract:** In current days fuel stations are operated manually. These fuel pumps are time-consuming and require more manpower. To place fuel stations in distant area it very costly to provide excellent facility to the consumers all these problem are sorted out by the use of unmanned petrol pump which requires less time to operate and it is effective and can be installed anywhere the customer self-going to avail the services the payment is done by electronic clearing system. The simple and proper use of microcontroller and GSM technology provides a total security and atomization in the distribution of fuel. It has easy operated mobile phone system and graphics user interface (GUI). It interfaces with high-speed fuel dispenser which is convenient for the consumer to operate. In our system the password will be provided to the user and customer has to enter this password on the LCD provided by the fuel station which will help the petrol company to create authentication for the user also the distribution of the fuel is not possible until it gets verified by the database. In short, we provide a secure system for fuel distribution. The advancement of this project can help industry financially

**keywords:** GSM, LCD, GUI, Atomization.

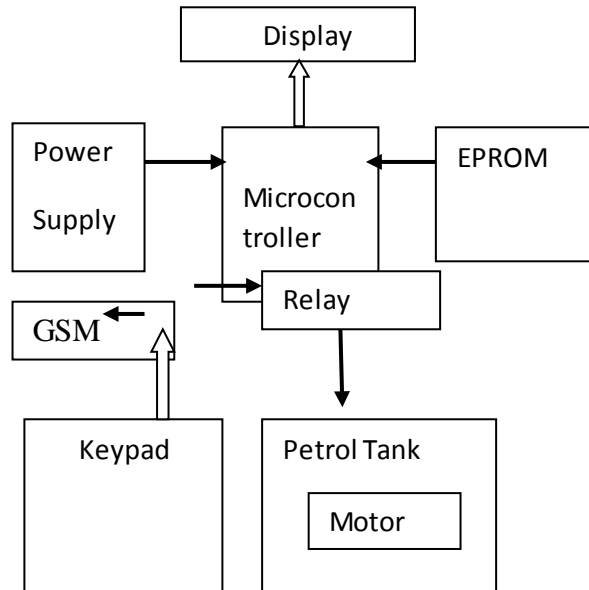
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### INTRODUCTION

The 21st century is aptly known as the internet age because of the increasing use of internet in the day to day activities. Examples of these applications include online banking and brokerage, cash management, tax filing, computerized petrol pump, medical field. As far as computerized petrol pump is concerned, a lot has already been done in this field. Each and every data is being inserted with the help of the computers. But as far as the safety of Fuel pump is concerned we are still in the world. Leakage of petrol or any oil leads to a blast and stealing of petrol may lead to a debacle. The aim of the system is to provide an authentication to the user & control the opening or closing of the tank valve according to the amount demanded. We will use GSM technology for this purpose. This project is fully automated with the help of various electronic devices, components, and circuits. Mainly this project is featured on the microcontroller and smart card in which microcontroller acts as an active device while smart card act as a passive device. Automatic petrol pump provides the feature of instant recharge. The smart card is added to an account which has a specific amount of money and it is necessary to have a smart card for this service. Only by the help of smart card, a customer can access this service. It is a type of self-service system. After dispensing, an exact amount of

balance is deducted from the smart card with a receipt date and time. It gives the accurate information about selling and control over any adulteration. There is no dispensing takes place when the account balance is low and it will show on the display. GSM system is interfaced to the microcontroller via UART (Universal asynchronous receiver transmitter) through which customer can access the accurate information about the balance availability and status of the smart card. LCD display is used to show up the information. Relay Driver is used to driving the electromagnetic relay and relays act as an electromagnetic switch for the Pump and motors. Overall Automation has added a new look to petrol pump which is very attractive with zero rushes as there is no serviceman. There are so many profits for the customers and the owners of the petrol company after installing the automated petrol pump with accuracy and security services. It blocks the black selling of petrol and minimizes the human involvement.

### **BLOCK DIAGRAM**



### **BLOCK DIAGRAM DESCRIPTION**

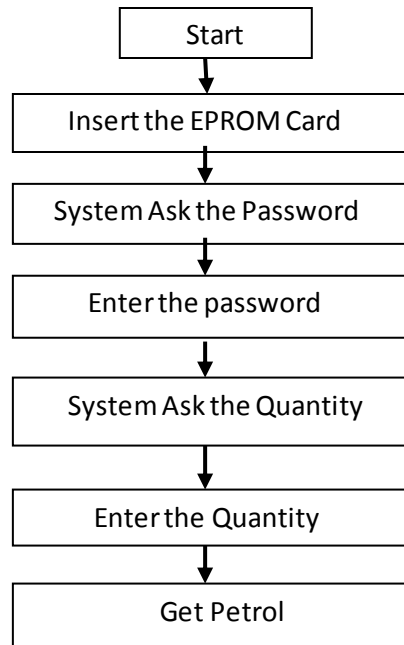
For sharing Microcontroller AT89S52 is the main device which is programmed to access all the necessary information and it acts as the central processing device of the whole system. The supply voltage is from 4.0V to 5.0. The maximum operating frequency of AT89S52 is 11.0592 MHz Microcontroller is interfaced with mobile via UART of information to the customer regarding the dispensing petrol and available balance. The keypad is used for filling out the amount. LCD display is used to show up the proper details. The relay is used as an electromagnetic switch for both pump and motor. The onboard power supply is used for regulating the power supply and control out the voltage and current flow. EPROM Based Card is used read.

The smart card which includes the majestic signal. GSM module is used to connect with SIM and the microcontroller. It is directly connected to the microcontroller. The fuel tank is attached to the engine. UART stands for universal asynchronous receiver transmitter used to connect the GSM module and microcontroller.

### **SCOPE OF THE PROJECT**

First of all the petrol pump with our technology can be possible to operate all the time without help of manpower, In this project there will be a centralized server having the database of the customer like Customer Name, Card No, After paying the cash the balance can be increased and depending upon the use of the card for purchase of petrol the balance will be deducted.

### **FLOWCHART**



**FLOWCHART DESCRIPTION**

In our system first, we insert EPROM Based Card. It is used to read the smart card which includes the majestic signal. After inserting EPROM based card, the system asks the password then we enter confidential password, Then system ask the quantity. After that enter quantity and get petrol.

**RESULT**

Petrol pump with our technology can be possible to operate all the time without help of manpower, In this project there will be a centralized server having the database of the customer like Customer Name, Card No, After paying the cash the petrol balance can be increased and depend upon the use of the card for purchase of petrol the petrol balance will be deducted.



**OUR FUTURE SYSTEM**



### **CONCLUSION**

First of all the petrol pump with our technology can be possible to operate all the time without help of manpower, In this project there will be a centralized server having the database of the customer like Customer Name , Card No, After paying the cash the petrol balance can be increased and depending upon the use of the card for purchase of petrol the petrol balance will be deducted

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