



IoT based Automated petrol system

¹Nitesh Ghone, ²Sanjay Chilwarkar, ³Rahul Padwal, ⁴Prof. Vinita Bhandiwad
^{1,2,3}Reading BE INFT, ⁴Guide

Vidyalankar Institute of Technology, Wadala, Mumbai, Maharashtra, India

1. ABSTRACT

Current days fuel stations are operated manually. These fuel pumps are time-consuming and require more man-power. 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 elective and can be installed anywhere the customer self-going to avail the services the payment is done by online or by cashless method. The simple and proper use of web technology provides a total security and atomization in the distribution of fuel. It has easy operated web technology and graphics user interface (GUI). It interfaces with high-speed fuel dispenser which is convenient for the consumer to operate. In our system every user have its own account on website. Which have username and password for login purpose. User enter the amount details on website and user get unique random code which is use for recognized amount. User enter the mobile number and that random code on petrol machine and machine gives exact amount of petrol.

Keywords: self services, web technology, random code, cashless transaction

I. 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 filling, RFID based petrol pump, medical field etc. As far as RFID 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 the system of current petrol pump is not ideal. There are lot of disadvantages of current system, therefore we develop a system which is very efficient and more secure. This system useful for cashless transaction and uses less man power.

II. EXISTING SYSTEM

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.

In current scenario, the process of petrol pump is too lengthy, time consuming, expensive and less secure. In current process customer go to petrol pump, give the money to worker and they release a petrol. In this process all activities happen manually, so chances of mistakes is more.

III. LIMITATION OF EXISTING SYSTEM

In the current petrol pump system, when worker wants to enter an amount like 100 or 200, there is a default button for such value. According to the machine setting, the machine shows the value as 100, but internally, the value is read as 80 or 90 instead of 100. Also, when we buy petrol for 100 rupees, they do not give the perfect amount of petrol for that value. The petrol given has a lesser value, like 99.60 Hence, there is lack of accuracy. More manpower is needed, as 8 to 10 people are needed to manage a single petrol pump. Each of these workers have a salary of 8000-1000, which the owner of the petrol pump must bear. Therefore, a monthly amount of about Rs 1 lakh has to be spent by the owner, which is very

expensive. There are also security flaws, as theft of petrol might happen.

IV. PROPOSED SYSTEM

All these problems can be 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 online or by cashless method. The simple and proper use of web technology provides a total security and atomization in the distribution of fuel. It has easy operated web technology and graphics user interface (GUI).

It interfaces with high-speed fuel dispenser which is convenient for the consumer to operate. In our system every user has its own account on website. Which has username and password for login purpose. User enters the amount details on website and user gets a unique GR code which is used for recognized amount. User enters the mobile number and that GR code on the petrol machine and the machine gives the exact amount of petrol.

We design the website for payment transaction, website.

User will login to website and after he gets an access. After login website will show the page of amount that is needed by the user for filling that petrol.

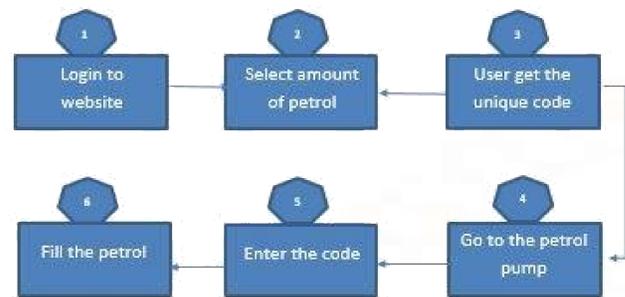
After entering the amount, the amount will be deducted from the user's wallet and user gets a unique GR code.

User will go to the petrol pump and he will enter the mobile number and that random code.

System will verify that mobile number and that code. If it verifies successfully the system will release the exact amount of petrol which is requested by the user.

We use web technology; user must have registered to the use and MySQL database for transaction and embedded system use for petrol machine.

User side process



Server side process

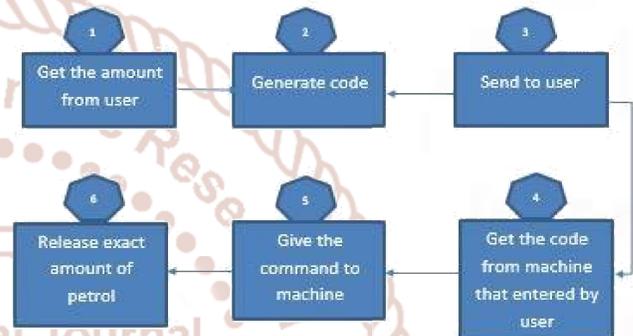


Fig 1. process diagram

V. ADVANTAGES OF PROPOSED SYSTEM

This system will make it possible to operate the petrol pump 24/7 without help of any manpower. There will be a centralized server having the database of the customer with the details of customer like Customer Name, random code etc which will take care of the monetary functioning of the system i.e. the deduction of money, amount of petrol, the balance etc.

The project fulfills the concept of cashless India. This system can be automated, wherein the customer will put money, which the system will detect, and will provide the customer with the fuel.

Smart petrol pump is an automated petrol machine which overcomes all problems of the current system.

Smart petrol pump is a machine which doesn't need a manual interface, it is a self-working machine.

Smart petrol machine automatically recognizes the amount given by customer using a unique code that is given by the website at the time of payment and gives the exact petrol accordingly to amount.

The system save the man power and give the accuracy. Fraud in petrol machine will reduce.

Save the time and very user friendly.

Cashless transaction happen so chances of robbery get reduced.

VI. CONCLUSION

The proposed system is self services automated petrol pump which helps to improve the fuel distribution system. It also overcome all problem of current system. It is easy to use and very efficient for customer use. The proposed system requires less money than for installation and maintenance so the petrol pump owner also recommended to this system and because of unmanned system the much amount of man power will save.

ACKNOWLEDGMENT

It has been a sincere desire of very individual to get an opportunity to express our views, skill, attitude and talent in which we are procient to give satisfaction and condence to do or to produce something useful for humankind. A project is one such avenue through which an engineer gives went to feelings and expressions. We sincerely wish to thank our principal Dr.S.A.Patekar and vice principal Prof. Varsha Bhosale for motivating us to do this project. We express our gratitude to our Head of Department Prof.Meenakshi Arya and our project guide Miss.Vinita Bhandiwad for her valuable suggestions and inspiring guidance. Her suggestions have helped us in many different ways to complete our project. Her leadership qualities motivated us and depth knowledge of her eld of interest was an addition in getting us prepared to work on our project. She was always present to clear our doubts whenever we faced any hurdles when on the project. She was tremendous patience and always helps us by giving new ideas and clearing our concepts at the same time.

REFERENCES

- 1) Self operated petrol pump International Journal Of Advance Research, Ideas And Innovations In Technology.ISSN:2454-132X.
- 2) Multi-Automized Fuel Pump With User Security INTERNATIONAL JOURNAL OF SCIENTIFIC and TECHNOLOGY RESEARCH VOLUME 3, ISSUE 5, May 2014.

- 3) Robert H. Chen , Liquid Crystal Displays: Fundamental Physics and Technology, 2011 edition published by Wiley-Blackwell.
- 4) D. Calcutt, Frenderick Cowan,Hassan Parchizadeh,8051 Microcon-trollers, Hardware, Software, and Applications,1998 edition published by Butterworth Heinemann Ltd.
- 5) Stephen B.Miles, Sanjay E Sharma, John R.Williams,RFID Technology and applications,2008 Cambridge University Press.
- 6) Joerg Eberspaecher, Hans-Joerg Voegel, Christian Bettstetter,GSM Switching, Services, and Protocols 2001 edition published by Wiley.
- 7) Stephen B.Miles, Sanjay E Sharma, John R. Williams,RFID Technology and applications,2008 edition published by Cambridge University Press.
- 8) D. Calcutt, Frenderick Cowan,Hassan Parchizadeh,8051 Microcon-trollers Hardware, Software, andApplications,1998 edition published by Butterworth-Heinemann Ltd 001.