



# International Journal of Innovative Research in Computer and Communication Engineering

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## QR Code Analyzed Fuel Management Petrol Bunk System

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**ABSTRACT:** With the rapid growth of life, usage of automobile is increasing day by day, leading to an increase of fuel filling stations. In the present scenario, these filling stations are totally manually operated which consumes time & requires man power. Wherein sparsely populated areas, the labor cost is more, due to less population density. Due to less availability of labor, and climatic conditions some of these filling stations wouldn't be open for 24\*7. Keeping these factors in mind, a mechatronics approach is made to design an automatic fuel filling system, which would be cost effective, open 24\*7, minimum labor required and optimum time taken to fill fuel. The car has to be parked in a specific region, wherein using image processing a close loop system will be generated which guides the robotic arm to align itself to the fuel tank. Once the arm has aligned itself, the consumer has to enter the amount for the quantity of petrol to be filled in the car by swiping his card in the machine. The pump gets actuated and the tank starts getting filled with fuel. Once the entered volume of fuel had been filled in the car, the pump stops the supply of fuel and the arm returns to its initial position. Using this approach even the owner could monitor the pump online from any corner of the world and also overcome the idea of petrol theft.

**KEYWORDS:** QR code based, reduce petrol theft, image processing

### I.INTRODUCTION

Resource Planning System is a pre-defined software system designed & developed specially for the Petrol Pump Owners, keeping in view with the specific requirements of the Pump Operations. The basic purpose of this application is to manage & maintain all the activities which are performed at each & every Petrol Station, make the existing system more comfortable. The activities on a petrol pump are increasing in variety and keeping record of all these activities is a tricky job. Pump Management System will help you to do this with an ease and controlling and checking of the activities will become very easy for you.

The normal working of the pump is based on the activities performed in each shift and the sale comprises of fuel items like Petrol, Diesel and other items like oil, lubricants, distilled water etc. The sale of the fuel items is based on the meter readings of the dispensing pumps, the lubricant & other item sale is based on the actual quantity sold. The total sale is either in cash or against credit cards, petro cards or the sale is made to the regular customers on credit. In addition to these regular activities, there are various check points like dip records, density records, attendants' records, power consumption records which need to be updated.

Keeping track of all these activities and maintaining all the required records is a big task. You would be required to do all this yourself, or you may have to appoint a person having this vision who also understands the importance of all



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these records. Today, doing all this manually is neither practical nor advisable. Resource Planning System is specially designed software which will take care of all this on your behalf. In all petrol pumps if supervisor want to maintain the record of the pumps then he has to go to each pumps for calculating the readings of each pumps. But in our paper we have provided facility to the supervisor in such that he can keep records of each pump just by sitting on one computer. If the supervisor wants to calculate to liters sold by an employee then he can view that just by clicking on module named liters sold this will display him the detail information of that employee how much he was given the petrol at the starting of the day and how much he has sold in whole day and the amount he has calculated. Also the supervisor can see whether the target given to him was completed or not. Also he can keep the record of the employee which are deleted and also can view whether the employee is paid the bonus or not. This will provide the supervisor to do his job easily any time he wants to access the data from the report of the any employee.

Also if the supervisor wants the record of the pump then he can view that easily without having any effort of going to their and calculating the reading individually of the pump. This will be useful for viewing the information of all the pump available in the petrol pump. QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode) first designed for the automotive industry in Japan. A barcode is a machine-readable optical label that contains information about the item to which it is attached. A QR code uses four standardized encoding modes (numeric, alphanumeric, byte/binary, and kanji) to efficiently store data; extensions may also be used. The QR code system became popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard UPC barcodes. Applications include product tracking, item identification, time tracking, document management, and general marketing.

## II. EXISTING SYSTEM

The main aim of INDIAN OIL PETROL BUNK MANAGEMENT SYSTEM is to reduce the waiting time and the betrayal activity. The existing method is user need to get a bill manually by user demand. The main issue is user need to wait more time in queue to get a bill. The waiting time depends upon the consumer's numbers in a bunk. If the consumer count increases we need to wait more time to get a bill. We rectify that problem by proposed a new methodology. That is we automated the billing system of Indian oil.

### Disadvantage

- Waiting time may be high
- Need man power

## III. PROPOSED WORK

This paper allows us to get acquainted with the work culture, people and environment. Paper was great opportunity for us to learn and work in the environment. This helps us to maintain the user needs and records are computerized. This is used to view the details whenever we needed. The main theme of this paper is to automate the petrol bunk management system by generating QR code according to the user demand for fuel.

### MODULES

- Authentication
- Registration
- Fuel Fill
- Server Update
- QR Code Generation

### AUTHENTICATION

Authentication is a process in which the credentials provided are compared to those on file in a database of authorized users' information on a local operating system or within an authentication server. If the credentials match, the process is completed and the user is granted authorization for access. The permissions and folders returned define both the

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environment the user sees and the way he can interact with it, including hours of access and other rights such as the amount of allocated storage space. The process of an administrator granting rights and the process of checking user account permissions for access to resources are both referred to as authorization. The privileges and preferences granted for the authorized account depend on the user's permissions, which are either stored locally or on the authentication server. The settings defined for all these environment variables are set by an administrator.

## REGISTRATION

In this paper user need to register their detail in our server. The details contain the user name, vehicle number, details like that. Those details we get is only for verification purposes. By using those details we can further identify the vehicle using those information.

## FUEL FILL

In this paper user can fill the fuel to their vehicle according to their needs. Here after registration the user need to log in to their account using username and password. After that we need to enter the amount of fuel as per our requirement.

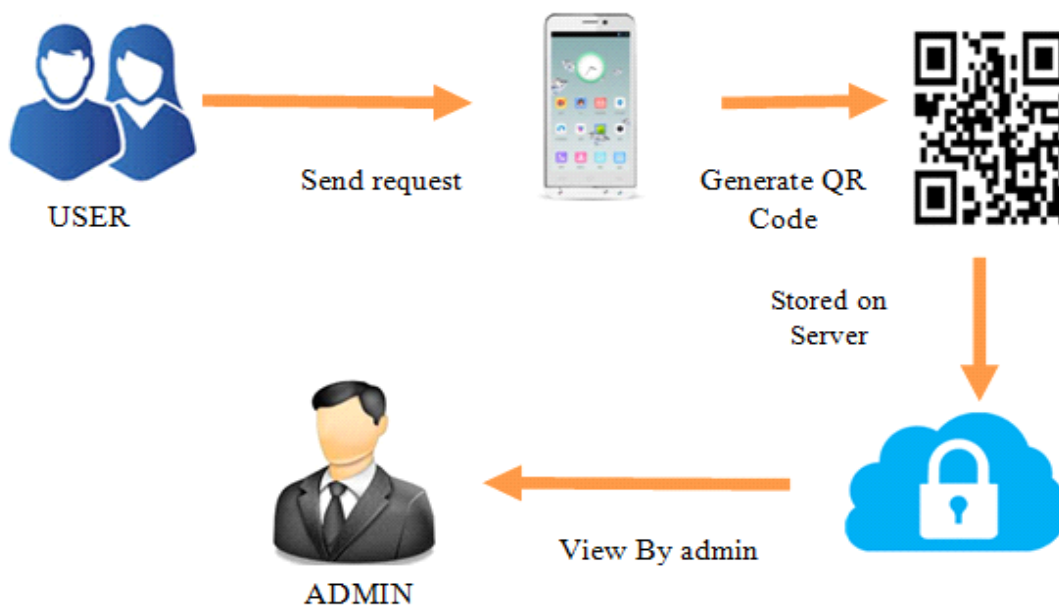
## SERVER UPDATE

This paper after the user gave request for fuel we need to update the information in server this is the process we doing in this paper.. Here the data or the requirement needed for fuel need to maintained in the server.

## QR CODE GENERATION

After those details updated in the server we get the quick response code according to user requirements. Using this QR code we can get out fuel in petrol bunk. The worker scanned the QR code and fill fuel according to your requirement of the fuel.

## ARCHITECTURE



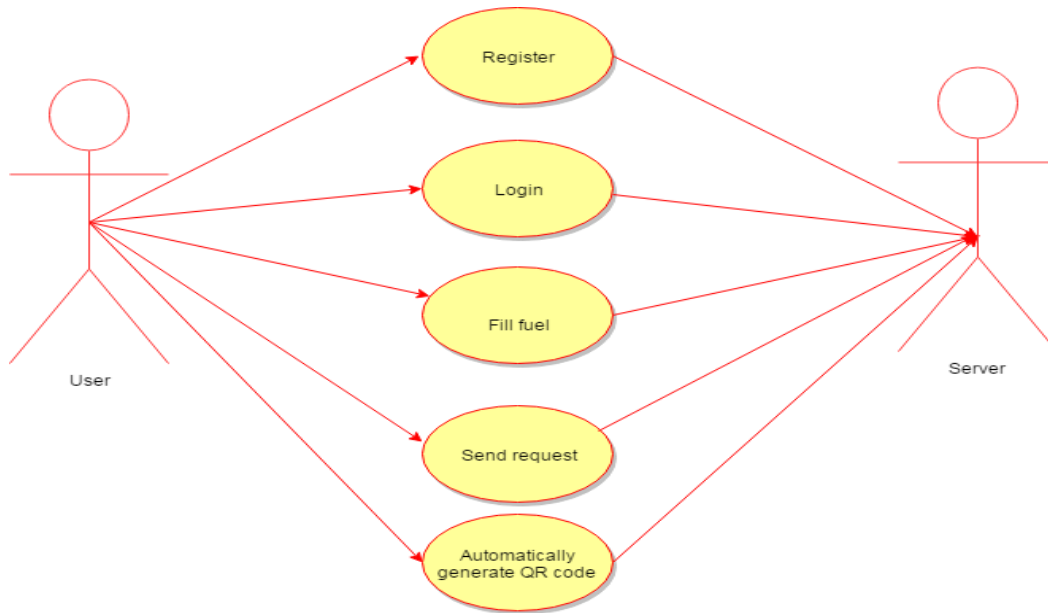
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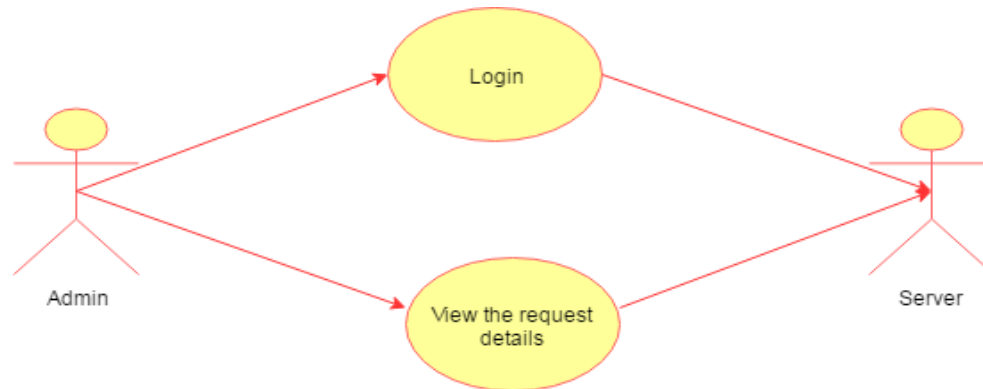
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Vol. 5, Issue 2, February 2017

## USER:



## ADMIN:



## SEQUENCE DIAGRAM

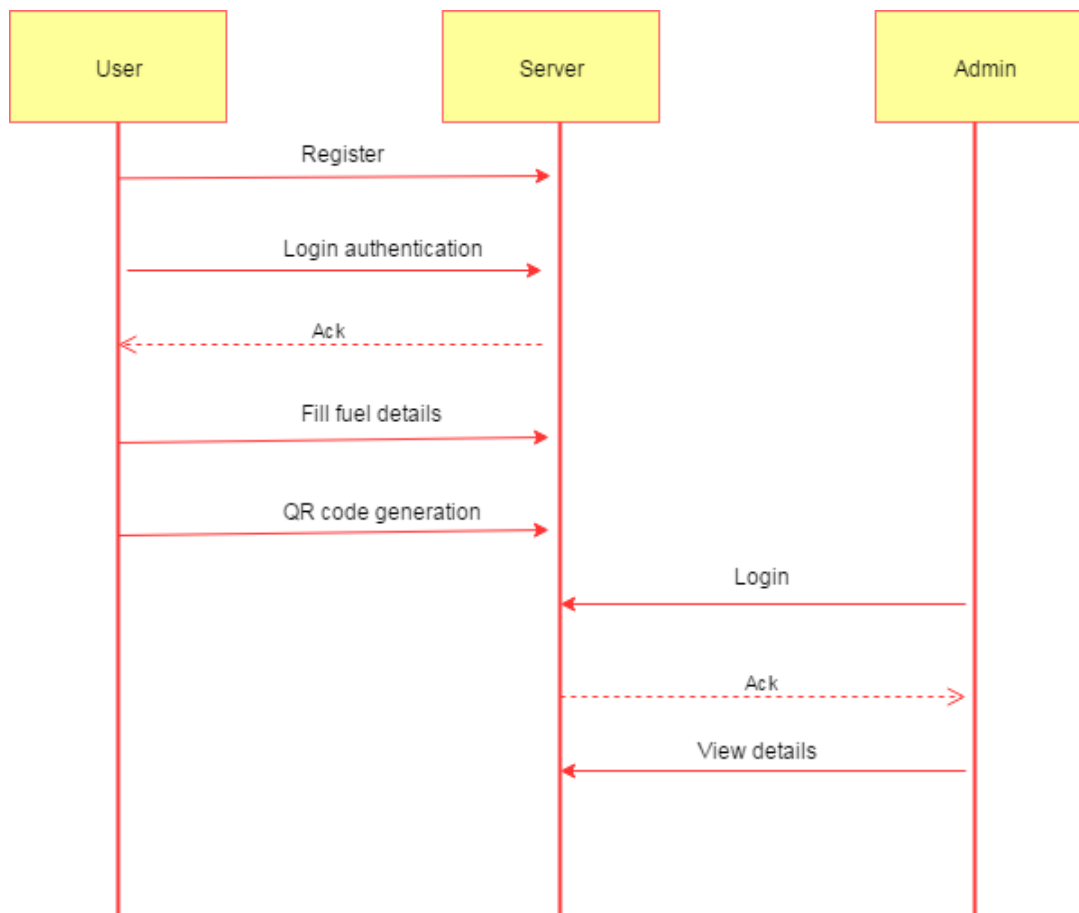
A Sequence diagram is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence.

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## IV. CONCLUSION

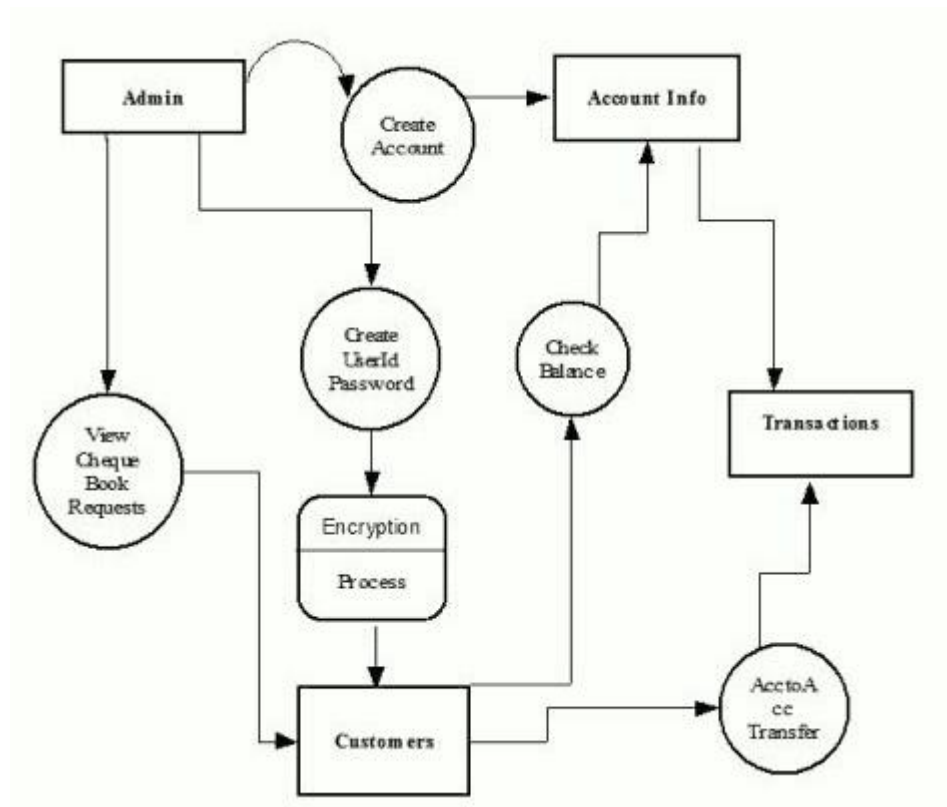
With the invention of this Automatic Vehicle Fueling System, it is expected to reduce the crime rate happen in petrol station where the system does not require the car user to come out from the car and several security precautions are also implement in this system such as payment machine with pin identification and emergency alarm. This also giving convenient for the car users as they no need to pump the fuel by holding the nozzle personally. The component of the system is made up of inflammable material which it will not causing combustion or explosion happen. Safety of the car users are in consider for every fueling process where an emergency stop button is also create for the purpose of emergency. The process of the operation is designed in sequence in relative to the actual fueling process. However, there is some limitation in our system. This system only provides car user to make payment by using credit card. Further improvement on this system can be done by including several payment methods such as by cash or by personal identification card. This Automatic Vehicle Fueling System also unable to allow car user to choose the type of fuel to fill in their car. This minor addition system adding to it will increase the reliability of the whole system.

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## V.FUTURE ENHACEMENT

Now days petrol bunk involves a lot of manual process is needed. So it wastes of time, money and lot of burden to the customers. In future days all are completely digitalized. The work done is very fast comparing to the manual work. It also benefit to both side such as customer and owner. If all the things are digitalized, there is no cheating process in a petrol bunk. Because all the information are updated to the server. If all the things are digitalized work done is so quickly customer is more satisfied.

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