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A Comprehensive Development of the Computerized System for Maintaining the Regular Records and Activities in the Petrol Bunk

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Abstract - In Petrol Pump management system, the main objective is to acquaint our user with various detail of our system which the software enables the manager of petrol pump to make reasonable decision made within a no time frame for sales, CNG, fuels like petrol, diesel, employee and should be updated towards system. In this Project, in which the project deals with the development of the computerized system for maintaining the regular records and activities in the petrol bunk are manipulated systematically. In the existing system all the record and activities at petrol station are done by manager manually. But, by this software system admin can add the quantity of different fuels like petrol, diesel which is imported in that particular month and sales detail of the petrol based on daily, monthly, yearly and there is record maintenance about the wastage of the impurities during the refining process.

Keywords: CNG Pump Automation, Fuel station, Compressed Natural Gas (CNG), Information Technology, Control System, Management.

1. INTRODUCTION

Petrol Pump Management System is developed to manage day by day records of different fuels like petrol, diesel at petrol station. In this project we will be including about how we can find out the information about the various petrol pump. This system consists of various forms and developed with the help of different programming like ASP, net languages. Using this system admin can keep tracks of quantity of fuels like petrol, diesel, CNG sold in any day, week or month. And also using sales module admin can check which employee sold how much diesel or petrol. It can also check total oil purchase, employee attendance and performance of the day at Petrol Station.

Using this Computerized designed module of Petrol Pump System admin can keep track of all the details of employee like name, address, phone or any other document can be easily available in the system. And Admin can also check joining timing and salary of employee. User can easily get reports from the Petrol Pump Management System about sold Petrol files, employee details files, etc. This is a project of computerizing petrol pump day by day activities that include

- Managing Inventory of different types of fuels at Petrol Station.
- Records of Financial Transaction in the system.
- Maintaining Employee Basic Information, Documents, Attendance, Salary Payments.
- Prevent the outside user to Manipulate data like reports files, records in the petrol station without admin permission.
- Limiting access from other different users
- Keeping records of credit sales and their payments.
- Keeping Record of daily Fuel price changes and making calculating as per it.

2. STUDY OF EXISTING SYSTEM

The Existing System of petrol pump management system is manual which is very slow, not having accurate, time-consuming and in a disorganized manner. In this system all report work is done manually. Admin have to check petrol pump machine at each petrol station and manually have to calculate the sold petrol. An essential part of the system analysis, is for developer to understand the current situation of the system. In this existing system all the records are maintained in the register, which is need to be converted into automated system.

All the Problems occurred in Existing Systems are:

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- Lack of privacy And accuracy not guranteed in the system.
- Risk is manipulation of data without admin permission.
- Not at all Secure, Anyone can outside access data easily.
- Lack of Co-ordination between Admin and User.

3. LITERATURE SURVEY

2.1 Paper Name: Automation gasoline Bunk Management using victimization prepaid Cards.

Author: L. Sujihelen

Description: This Paper shows the development of operated by manually gasoline, as of this method the automated petrol pumps using cloud communication and Arduino aboard of RFID reader is proposed during this computerized petrol pump management system.

2.2 Paper Name: IOT Based Petrol Bunk Management for Self-Operation using RFID and Raspberry PI.

Author: Parthasarth I K S

Description: This paper stress on upcoming with a software system which may ad libitum dispense the fuel like petrol and diesel and deduct the amount from postpaid RFID card at petrol station.

2.3 Paper Name: Automation of Petrol Bunk Biotelemetry System and Petro Card.

Author: F.M.J. Willemsa and T. Ignatengo

Description: The paper puts forward automation of petrol bunk smart solution to this phenomenon and designing of this automation system based on ATMEGA 8A.

2.4 Paper Name: Centralized automation of petrol bunk management and safety using RFID and GSM technology.

Author: Sahana S. Rao

Description: This paper implements the “Automation” of the filling fuel at petrol bunk using RFID and GSM technology. The transaction are made customer friendly I.e. at customer’s fingertips with customer’s smart phone.

4. PROPOSED METHODOLOGY

System Architecture

As shown in figure System Architecture of Petrol Pump Management System by using RSA Algorithm, which consists of different component like Registration, Login, Add New Customer, Transaction, General Report, Daily Petrol and Diesel Transaction, or Add Expenses, etc. In which Registration, at the time of registration username and password these two options are provided and required to login page, or to get access to login page. After getting login that particular username and password get stored automatically in database of petrol system.

Second component in it is Add New Customer, in which we can add new entry for customer which had to pay later for particular petrol or diesel. And there is a drop-down list which keep all the records of particular customer and daily in and out customer.

In transaction section of all credit and debit kind of transaction which is money transaction get done and it automatically get stored and gets updates in database of system. In General Report section, we have created report for that transaction which will keep all records of employee, petrol, diesel in the system. There is also other section in architecture of petrol pump management system are daily petrol and diesel transaction, add expense in which all these records will be recorded like how many fuels is in the tanks.

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5. PROPOSED SYSTEM

The Proposed System has the MySql connectivity for the database. As Admin can keep track of employee salary, attendance and any other details. Now it's easy for Admin to add or remove employee and with the help of this system Admin can generate salary based on working hours of employee from the system data effortlessly. Admin can check daily price of fuels like petrol and diesel at online platform easily. In this Admin can create different like transaction report, customer report, salary report, sold petrol reports, etc with the help of report module from system. As in system only authentic user can access to admin account, only /admin can update or manipulate data of the system at petrol station. In proposed system user can check sold petrol from his monitor by clicking on some report button. Admin also able to keep track of sold oils in one day or in one month.

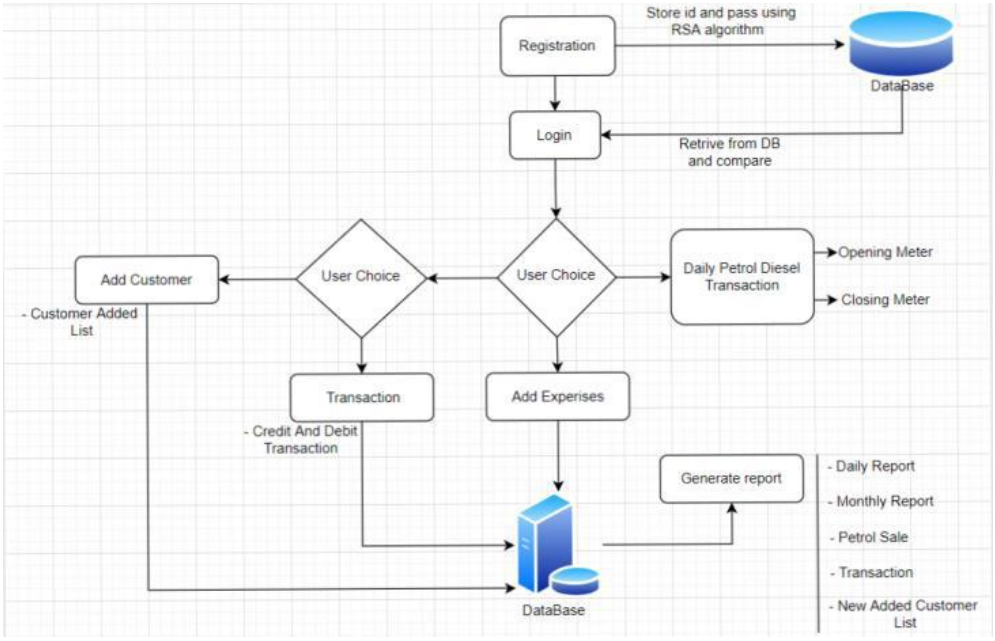

Figure 1: System Architecture of Petrol Pump Management System

Advantages of Proposed System

• All the information about sale, purchase, stock will be maintain properly in this system.

• All manual calculation of sale or all the money management will be performed by the computer automatically.

• This system will provide timely report information. It will produce report for sale, bill and stock information.

• The computer can hold amount of data in its storage device. The operation and speed of the computer is very high. We can calculate result and print any report within a second.

• Any difficulties we can solve easily.

• A database application can be stored in computer effectively. It is very user friendly and easy to handle. So, the computerized system is more suitable than the manual system.

• It is user friendly: - This means that these projects can be handled without any much distortion. Also, there is no need to have to study this software and then to use it.

• Cost effectiveness: - This Project is very cheaper as they don't require the hardware equipment. Means this project can be completed in the low cast. Here you have to only use the software language like vb and ms-access.

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• Easy to backup: - The back up of this project is very easy to handle. Also, the record if deleted by mistake be deleted permanently it will store in the database files.

• Data Security: - In our project we have provided the password facility so that each module can have their data security. Here also the report module which cannot be opened without the password so for that we have provided the security purpose.

• Finally, the main advantage is that it can be used in any pump without one pc and there is no need of any type of the extra hardware requirements.

RSA Algorithm

RSA stands for Rivert- Shamir- Adleman's algorithmic. RSA algorithm in which at registration time user gets login to system by alternative as victimization username and password. That username and password is provided to user for login activates. Initially password is in human legible type but after performing encryption and decryption operation on it using RSA algorithm. Then that password gets stored in Database of System. At the time of Login activity, the entered password gets compared to hold on data in database, if it matches to hold on data then user gets with success login in the system, however if it not matches to hold on data then it shows "incorrect Password" massage on Login page of system. Like this RSA algorithm rule is additionally get used for security purpose in this system therefore nobody can access data while not permission of user which shows, Data Security in the system.

6. RESULT ANALYSIS

Now proposed system is more advanced and computerized than existing system. The project has several features and easy to manage like system is user friendly, cost effective, Backup, support, Secured Data, highly efficient, Computerized System. As system was manual work it was so difficult for admin to keep record in register which was time-consuming and tedious task to do daily. So, for efficient work we have developed the system to computerized all the records of fuels and employee at petrol station. By which because of this system it got easier for admin to maintain a daily record. As shown in figure 3 it also so How proposed System is way better than existing system.

Comparison between existing system and proposed system

• Existing system was not user friendly whereas proposed system is User friendliness is provided in the application with various controls.

• The system makes the overall project management much easier and flexible as compare to existing system.

• In proposed system, it can be accessed over the internet at anytime, anywhere but for existing system you have present at petrol station.

• In proposed system there is no risk of data mismanagement at any level while the project development is under process, but in existing system there is high risk of data loss and data security as anyone can manipulate data easily without knowing Admin.

• It provides high level of security using different protocols like https etc, which is not possible in existing system because it is manual system.

7. CONCLUSIONS

In Today's Technology world it is so important to keep your data and system secure, So it's important to have knowledge of every updated new technology for secure system and for distribution of fuels and to stay records of a similar fuels with approved user. In Petrol Pump Management System as Data is getting to store in system, System helps to store all the data about sales of fuels and customer order in computer and there is no need to do any kind of paper work, or to keep register for keeping tracks of employee ad petrol, diesel. This project in all probability will be enforced for the employment of alternative task apart from gasoline costs on massive scale to attain varied Goles of business. Data is going to be preserved carefully for long time in the system at petrol station, so that proper backup system is required otherwise there is chance of losing entire data. For this system we have left the options open so that if there is any other future requirement from admin side in the system for the enhancement of the system then it is possible to implement them.

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7. FUTURE SCOPE

Being a computerized petrol pump management system, the system has good scope to be improved further in future by the choice of Administrator like:

- Administrator can begiven more rights so that he will be able to change order details as per the particular required by system.
- Type 4 driver is provided which will get used for system to work faster even it gets different loads at particular time by admin.
- We will develop the system on LAN to setup the connection between other petrol pump of same company at petrol station.
- We can provide more advance software for petrol pump management system including more facilities for its better performance at petrol station.
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers in petrol pump management system.
- This System is hosted as online for access worldwide.

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