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**TOPIC**

The average petrol station installs over 10 000 liters of petrol tanks for different kinds of fuel giving them a combined fuel capacity of 50 000 liters e.g. (20 000 liters of unleaded petrol, 10 000 for super,   
and 10 000 for Diesel).

These petrol tanks are used on a daily basis and if the usage is not correctly managed this will lead to the station running out of fuel and not being able to supply sufficient fuel to its customers. Currently many of our petrol stations conduct their fuel reserves calculations manually which involves a member of the staff having to check how much fuel is left using a specialized stick-like device which is placed in a special opening of the fuel tanks. This method is tedious, inconsistent, and may have an effect on the health of the people who carry out these duties.

We at Kings’ Solutions propose to have a system that will assist a petrol station in calculating, monitoring and managing fuel reserves, ensuring that people who are running the enterprise have access to reliable information and statistics regarding their fuel reserves.

**MISSION**

Mission is to develop a fuel management system that will monitor a petrol station’s services as well as manage the petrol station’s fuel services.

**AIM**

Our aim is to come up with a solution that will help save time and money for a petrol station by developing a system that will automate manual activities so as to help managers attend to other important activities.

**OBJECTIVES**

The objective is to develop a system that will aid the petrol station manager and staff members in regulating and measuring fuel reserves, with a comprehensive, easy to use system, thus eliminating the operation of manually checking on fuel tanks. This system will produce reliable readings and reports.

**FUNCTIONAL REQUIRMENTS**:

* The System must calculate how much fuel is being dispensed by the fuel dispensers.
* Manager must be able to register and remove staff on the system.
* The system must report if fuel tanks are running low.
* Managers must be able to check how much fuel is left in the tanks.
* Managers must be able to enter how much fuel has been filled in the fuel tanks.

**NON- FUNCTIONAL REQUIRMENTS**

* The system must run a log of attendants who access fuel dispensers.
* System must be able to generate reports from the system.

**SPECIFIC PACKAGES**our system will be a desktop application which will only be accessed at the work place. Information will only be accessed only at the work premises. Managers can only be able to alter changes to the system at certain periods of hours in a day.

**TECHNOLOGIES AND TECHNIQUES TO BE USED:**

* Java programming language (desktop (Native)).
* Structured Query Language as a DML for Microsoft SQL Server (Or MySQL Server – as alternative).
* Wireless networking for interconnectivity of the whole system.
* An Agile development approach will be used to develop the system.

**FUEL MANAGEMENT SYSTEM EVENT TABLE:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Event | Trigger | Source | Use Case | Response | Destination |
| Log In | Staff and Manager can log in to the system | Staff, Manager | LogIn | Logging in to the system | Staff, Manager |
| Register User | Manager gets to register staff member on the system | Manager | RegisterUser | Staff Registered | Manager |
| Check fuel | Staff checks for fuel readings | Staff, Manager | CheckFuel | Fuel Readings  report | Staff |
| Dispense fuel | Staff pours fuel into a vehicle | Staff | FuelDispense | Fuel Receipt | Staff |
| Fuel Status | Manager checks for fuel status | Manager | FuelStatus | Fuel Status | Manager |
| Fill Tank | Manager needs to enter how much fuel has been refilled | Manager | FillTank | Refilled fuel tank readings | Manager |
| Monthly report | Manager wants monthly report End of month | Manager | PrintMonthlyReport | Monthly Report | Manager |
| Dispenser usage | System logs which dispenser is used and by who | system, manager | DispenserUsageLog | Log of dispenser usage | Manager |
| User Log Out | Manager, Staff log out of the system | Manager, staff | LogOut |  |  |