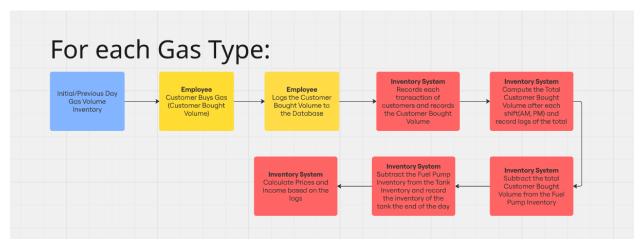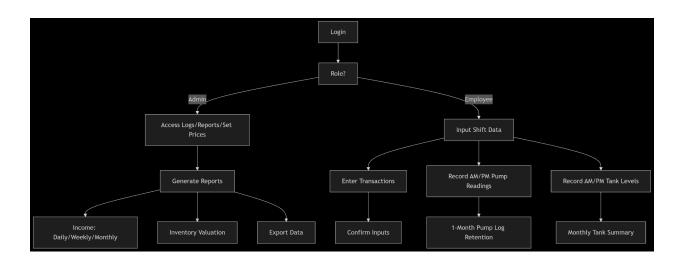# Gas Station Inventory

Specifications:

- Monthly volume logs of the three types of Gasoline

    - Diesel

    - Premium

    - Unleaded

- Track Tank Volume Inventory and transactions

    - Track the volume of fuel bought in every transaction

    - Continuously track the volume dispensed by each pump after every transaction

    - Fuel Tank inventory (Am Shift & Pm Shift)

- Convert Inventory into prices(diesel 1 has different prices from diesel 2 & 3 but the same volume, same for premium and unleaded categories)

    - Diesel (PB), Diesel (1), Diesel (2), Diesel (3)

    - Premium (PB), Premium (1), Premium (2), Premium (3)

    - Unleaded (PB)

- Income

    - Daily

    - Weekly

    - Monthly

    - Yearly

Features:

A. User Management

☐ Login page for the admin and the employee

☐ The admin can access the logs, while the employee can only input logs

☐ Confirmation window to avoid misinputs by employees

☐ Acceptable UI/UX

B. Shift Management

☐ A button to indicate when to start/end a shift to track and record fuel volumes

☐ After shifts(AM, PM), calculate the Total Pump Fuel Volume and record fuel volumes

C. Transaction Input

☐ An input page to track and record each transaction of pump fuel

☐ Pump Fuel Volume Logs should remain for 1 month

☐ Tank Fuel Logs after daily for each fuel category

D. Income and Inventory Reports

☐ Maintain the previous inventory of fuel

☐ Add a delivery log to update the current fuel inventory

☐ Calculate inventory prices based on the logs

☐ Calculate Daily, Weekly, and Monthly Income

☐ Price History Tracking

☐ Data Export(Optional)

Process Flowchart:

For each Gas Type:

```
Initial/Previous Day Gas Volume Inventory
  → Employee: Customer Buys Gas (Customer Bought Volume)
  → Employee: Logs the Customer Bought Volume to the Database
  → Inventory System: Records each transaction of customers and records the Customer Bought Volume
  → Inventory System: Compute the Total Customer Bought Volume after each shift(AM, PM) and record logs of the total
  → Inventory System: Subtract the total Customer Bought Volume from the Fuel Pump Inventory
  → Inventory System: Subtract the Fuel Pump Inventory from the Tank Inventory and record the inventory of the tank the end of the day
  → Inventory System: Calculate Prices and Income based on the logs
```

```
Login
  → Role?
     → Admin → Access Logs/Reports/Set Prices
        → Generate Reports
           → Income: Daily/Weekly/Monthly
           → Inventory Valuation
           → Export Data
     → Employee → Input Shift Data
        → Enter Transactions
           → Confirm Inputs
        → Record AM/PM Pump Readings
           → 1-Month Pump Log Retention
        → Record AM/PM Tank Levels
           → Monthly Tank Summary
```

Initial Entity Relationship Diagram:

Fuel_Tank_Inventory
PK	Fuel_tank_id	Type
FK	Fuel_type_id	int
	Fuel_name	varchar(50)
	Start_Volume	int
	End_Volume	int

Fuel_Types
PK	Fuel_type_id	int
	Fuel_name	varchar(50)
	Category	int

User
Key	Admin	varchar(50)
Key	Employee	varchar(50)

Shift
PK	Shift_id	int
	Shift_date	Date
	Shift_type	varchar(2)
	Start_time	DateTime
	End_time	DateTime
FK	User_id	int

Transaction
PK	Transaction_id	int
FK	Pump_id	int
FK	Shift_id	int
FK	Fuel_type_id	int
	Volume	int
	Transaction_date	int
	Current_price	int

Fuel_Pump_Inventory
PK	Pump_id	int
FK	Fuel_type_id	int
	Pump_Label	varchar(50)

Price
PK	Price_id	int
FK	Fuel_type_id	int
	Price	int
	Effective_date	Date

Deliveries
PK	Delivery_id	int
FK	Fuel_type_id	int
	Delivery_date	Date
	Volume	int
	Price	int