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***Chillout System Analysis***

# Idea:

## Inputs:

* **Sales** (Daily)
* **Existing in Tanks** (Daily)
* **Trips** (Daily)

## Outputs:

* **Sales**
* **Distances covered**
* **Imports**
* **Needs** (Daily)
* **Withdrawals (Companies)**
* **Withdrawals (Remaining)**
* **Withdrawals (Warehouses)**

# Tables & relations:

## Tables:

* **Agents** (AgentID, AgentName, IsHidden)
* **Distances** (DistanceID, WarehouseID, StationID, Distance, IsHidden)
* **Drivers** (DriverID, DriverFirstName, DriverMiddleName, DriverLastName, DriverPhoneNumber, IsHidden)
* **Existing** (ExistingID, StationID, ProductID, ExistingAmount, Day, Month, Year)\*
* **Transfers** (TransferID, WarehouseID, StationID, ProductID, TransferredAmount, Day, Month, Year, IsHidden)\*
* **Products** (ProductID, ProductName, IsHidden)
* **Quota** (QuotaID, WarehouseID, ProductID, QuotaAmount , Month, Year)
* **Sales** (SaleID, StationID, ProductID, SalesAmount, Day, Month, Year)\*
* **Sectors** (SectorID, SectorName, IsHidden)
* **Stations** (StationID, StationCode, StationName, AgentID, SectorID, Location, IsHidden)
* **Tanks** (TankID, TankVolume, ProductID, IsHidden)
* **Trips** (TripID, DriverID, VehicleID, outboundDistanceID, inboundDistanceID, TransferIDs, Day, Month, Year)\*
* **Users** (UserID, UserFirstName, UserMiddleName, UserLastName, PhoneNumber, Password, Role)
* **Vehicles** (VehicleID, VehicleCode, VehiclePlate, VehicleCard, VehiclePhone, TrailerPlate, IsHidden)
* **Warehouses** (WarehouseID, WarehouseName, CompanyName, SectorID, IsHidden)

## Relations:

### Many-to-One:

* **Distances – Stations**
* **Distances – Warehouses**
* **Existing – Products**
* **Existing – Stations**
* **Quota – Products**
* **Quota – Warehouses**
* **Sales – Products**
* **Sales – Stations**
* **Stations – Agents**
* **Stations – Sectors**
* **Tanks – Products**
* **Transfers – Products**
* **Transfers – Stations**
* **Transfers – Trips**
* **Transfers – Warehouses**
* **Trips – Distances**
* **Trips – Drivers**
* **Trips – Vehicles**
* **Warehouses – Sectors**

### One-to-Many:

* **Trips – Transfers**
* **Stations – Tanks**
* **Warehouses – Products**

# Illustrations:

* (**\***) refer to tables using date picker / calendar to view / modify their data at any chosen date
* Actual date and time are not important; neither the local machine date time nor the global one
* Acknowledgement (التمام اليومي) uses the date picker, then access the sales / existing tables separately.

# Reports:

## Custom reports:

* **Distances covered**:

Represents the total distance covered and the trips' count each day in the month and along the month.

* **Imports**:

Represents the amount imported from each product to each station and their total.

* **Needs**:

Represents the needed amount of each product to cover each station's needs each day.

* **Sales**:

Represents the amount of sales of each product of each station and their total.

* **Withdrawals (Companies)**:

Represents the withdrawals from each company between the specified dates.

* **Withdrawals (Remaining)**:

Represents the difference between the quota specified and the current withdrawals from each warehouse between the specified dates.

* **Withdrawals (Warehouses)**:

Represents the withdrawals from each warehouse between the specified dates.

# Schema:

# Pages:

1. **Registration Page**
2. **Login page**
3. **Home page**
4. **Agents:**
   1. **Create**
   2. **List**
5. **Distances:**
   1. **Create**
   2. **List**
6. **Drivers:**
   1. **Create**
   2. **List**
7. **Products:**
   1. **Create**
   2. **List**
8. **Quotas**
9. **Sectors:**
   1. **Create**
   2. **List**
10. **Stations:**
    1. **Create**
    2. **List**
11. **Trips:**
    1. **Create**
    2. **List**
12. **Users:**
    1. **Create**
    2. **List**
13. **Vehicles:**
    1. **Create**
    2. **List**
14. **Warehouses:**
    1. **Create**
    2. **List**
15. **Acknowledgements:**
    1. **Sales**
    2. **Existing in Tanks**
16. **Reports:**
    1. **Distances Covered**
    2. **Imports**
    3. **Needs**
    4. **Sales**
    5. **Withdrawals:**
       1. **Companies**
       2. **Remaining in Tanks**
       3. **Warehouses**

# Requirements:

## Languages

* **HTML**
* **CSS**
* **Typescript**
* **Java**
* **JPQL**

## Tools:

* **VScode (editor)**
* **IntelliJ (IDE)**
* **Mongo (database)**
* **Postman (Testing RESTful web services)**

## Others:

* **Node.js (runtime)**
* **Angular (framework)**
* **Apache Maven (package manager)**
* **Java EE**