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:

Existing		Sales		Quota

Trips		Distances		Drivers

Agents		Transfers		Vehicles

Users		Sectors		Stations

Tanks		Warehouses		Products

Pages:

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