# Chillout System Analysis

## Idea:

### Inputs:

- **Sales** (Daily)
- **Imported Products** (Daily)
- **Existing in Tanks** (Daily)
- **Trips** (Daily)

### Outputs:

- **Sales** (Daily & Monthly)
- **Imported Products** (Daily & Monthly)
- **Withdrawals** (Daily & Monthly)
- **Trips** (Daily & Monthly)
- **Supply plan** (Daily)

## Tables & relations:

### Tables:

- **Agents** (AgentID, Agent)
- **Existing** (ExistingID, Station_ProductID, ExistingAmount, DateID)
- **Companies** (CompanyID, Company)
- **Dates** (DateID, Day, Month, Year)
- **Distances** (DistanceID, Stations_WarehouseID, Distance)
- **Drivers** (DriverID, DriverFirstName, DriverLastName, DriverPhone)
- **Importations** (ImportationID, Station_WarehouseID, ImportedAmount, DateID)
- **Products** (ProductID, Product)
- **Quota** (QuotaID, Warehouse_ProductID, Quota , Month)
- **Sales** (SaleID, Station_ProductID, SalesAmount, DateID)
- **Sectors** (SectorID, Sector)
- **Stations** (StationID, Station, AgentID)
- **Tanks** (TankID, TankVolume)
- **Trips** (TripID, DriverID, VehicleID, DistanceID, DateID)
- **Users** (UserID, UserFirstName, UserLastName, Password, Phone)
- **Vehicles** (VehicleID, VehicleCode, VehiclePlate, VehicleCard, VehiclePhone, TrailerPlate)
- **Warehouses** (WarehouseID, Warehouse, CompanyID)
- **Withdrawals** (WithdrawalID, QuotaID, StationID, WithdrawalAmount, DateID)

### Relations:

- **Stations – Sectors**: (Station_SectorID, StationID, SectorID)
- **Warehouses – Sectors**: (Warehouse_SectorID, WarehouseID, SectorID)
- **Stations – Products**: (Station_ProductID, StationID, ProductID)
- **Warehouses – Products**: (Warehouse_ProductID, WarehouseID, ProductID)
- **Stations – Warehouses**: (Stations_WarehouseID, StationID, WarehouseID)
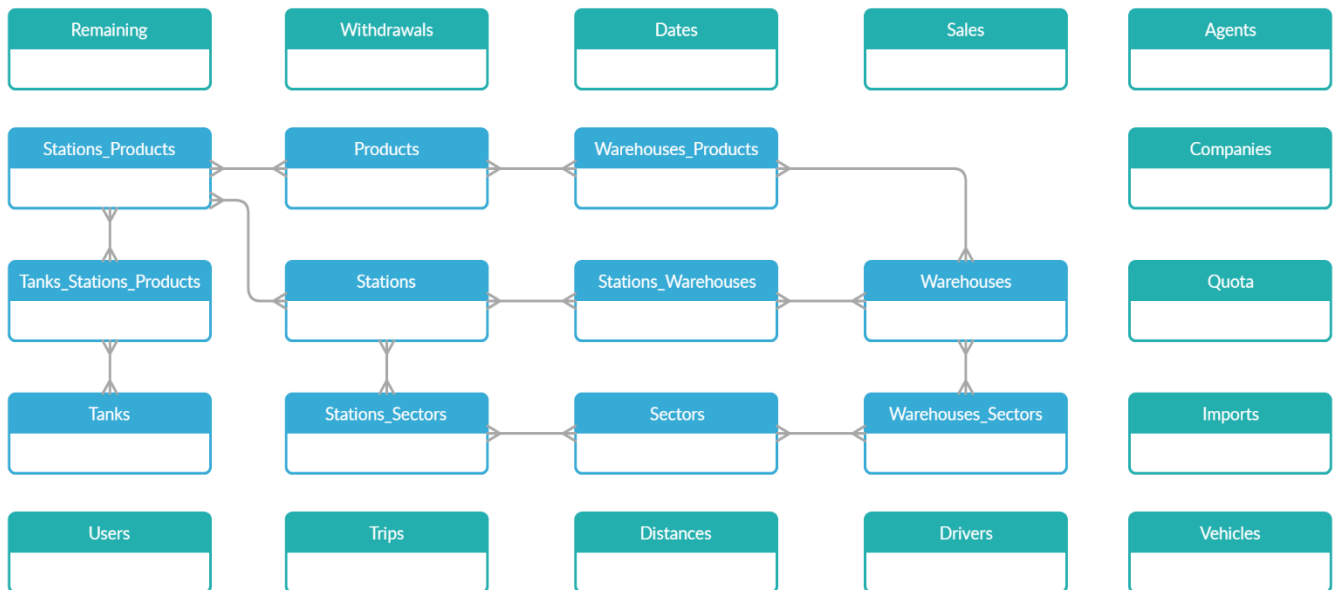- **Tanks – (Stations – Products)**: (TankID, Station_ProductID)

# Reports / Statistics:

- Daily reports:
    - **Withdrawals**:
      Represents the amount of withdrawal of each product from each Warehouse
    - **Sales**:
      Represents the amount of sales of each product of each station
    - **Imported products:**
      Represents the total amount of imported product to each station from each Warehouse
    - **Supply plan**:
      Represents the needs of each product according to the average consumption of a specific station and the tank volume of the same product

- Monthly reports:
    - **Total withdrawals from Warehouses**:
      Represents the total amount of withdrawal of each product from each Warehouse
    - **Total stations' sales**:
      Represents the total amount of sales of each product at each station
    - **Total Imported products in stations**:
      Represents the total amount of imported product to each station from each Warehouse

- Special reports:
    - **Average Imported product**:
      Represents the average of each imported product to each station
    - **EoM (End of Month) Stations' needs**:
      Represents each station's needs for each product by multiplying the average of a station's needs and the remaining days in the current month
    - **Warehouses Remaining**:
      Represents the difference between the quota specified and the current withdrawals from each Warehouse

## Schema:

| Remaining | Withdrawals | Dates | Sales | Agents |
|---|---|---|---|---|

| Stations_Products | Products | Warehouses_Products | | Companies |
|---|---|---|---|---|

| Tanks_Stations_Products | Stations | Stations_Warehouses | Warehouses | Quota |
|---|---|---|---|---|

| Tanks | Stations_Sectors | Sectors | Warehouses_Sectors | Imports |
|---|---|---|---|---|

| Users | Trips | Distances | Drivers | Vehicles |
|---|---|---|---|---|

## Pages:

١. **Login page (Authentication -> Login)**
٢. **Home page (Unspecified)**
٣. **Sectors list page (Academy)**
٤. **Stations list page (Table)**
٥. **Agents list page (Academy)**
٦. **Tanks list page (Academy)**
٧. **Companies list page (Academy)**
٨. **Warehouses list page (Academy)**
٩. **Products list page (Academy)**
١٠. **Vehicles list page (Table)**
١١. **Drivers list page (Academy)**
١٢. **Distances list page (Table)**
١٣. **Trips list page (Unspecified)**
١٤. **Users list page (Unspecified)**
١٥. **Sectors management page (Form)**
١٦. **Station management page (Form)**
١٧. **Agents management page (Academy)**
١٨. **Tanks management page (Form)**
١٩. **Company management page (Form)**
٢٠. **Warehouse management page (Form)**
٢١. **Product management page (Form)**
٢٢. **Vehicle management page (Form)**
٢٣. **Driver management page (Form)**
٢٤. **Distance management page (Form)**
٢٥. **Trips management page (Unspecified)**

٢٦. **User management page (Unspecified)**
٢٧. **Withdrawals report page (Daily / Monthly) (Table)**
٢٨. **Sales report page (Daily / Monthly) (Table)**
٢٩. **Imported products report page (Daily / Monthly) (Table)**
٣٠. **Supply plan report page (Table)**
٣١. **Average Imported product report page (Table)**
٣٢. **EoM (End of Month) Stations' needs report page (Table)**
٣٣. **Warehouses Remaining report page (Table)**

## Software & Hardware requirements:

### Software:

- Languages
  - **HTML**
  - **CSS**
  - **Typescript**
  - **Java**
  - **JPQL**

- Tools:
  - **VScode editor**
  - **IntelliJ IDE**
  - **SQL server / Mongo database**
  - **Postman**

- Others:
  - **Node.js**
  - **Angular**
  - **Apache Maven package manager**
  - **Java EE**

### Hardware:

- **Server**
- **PC**
- **Internet**