******

***Chillout System Analysis***

# Idea:

## Inputs:

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

## Outputs:

* **Sales** (Daily & Monthly)
* **Transferred Products** (Daily & Monthly)
* **Transfers** (Daily & Monthly)
* **Trips** (Daily & Monthly)
* **Supply plan** (Daily)

# Tables & relations:

## Tables:

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

## Relations:

### One-to-Many:

* **Distances – Stations**
* **Distances – Warehouses**
* **Existing – Stations**
* **Existing – Products**
* **Transfers – Warehouses**
* **Transfers – Stations**
* **Transfers – Products**
* **Quota – Warehouses**
* **Quota – Products**
* **Sales – Stations**
* **Sales – Products**

### Many-to-One:

* **Stations – Agents**
* **Stations – Sectors**
* **Warehouses – Sectors**
* **Tanks – Products**
* **Trips – Drivers**
* **Trips – Vehicles**

### Many-to-Many:

* **Companies – Warehouses:** (Company\_WarehouseID, CompanyID, WarehouseID)
* **Stations – Products:** (Station\_ProductID, StationID, ProductID)
* **Stations – Tanks:** (Station\_TankID, StationID, TankID)
* **Stations – Warehouses:** (Station\_WarehouseID, StationID, WarehouseID)
* **Warehouses – Products:** (Warehouse\_ProductID, WarehouseID, ProductID)

# 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
* Daily acknowledge (التمام اليومي) uses the date picker, then access the sales, existing or Transfers tables separately

# Reports / Statistics:

## Daily reports:

* **Transfers**:

Represents the amount of transfer of each product from each Warehouse

* **Sales**:

Represents the amount of sales of each product of each station

* **Transferred products:**

Represents the total amount of transferred 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 transfers from Warehouses**:

Represents the total amount of transfer of each product from each Warehouse

* **Total stations' sales**:

Represents the total amount of sales of each product at each station

* **Total Transferred products in stations**:

Represents the total amount of transferred product to each station from each Warehouse

## Special reports:

* **Average Transferred product**:

Represents the average of each transferred 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 transfers from each Warehouse

# Schema:

# Pages:

1. **Login page (Authentication -> Login)**
2. **Home page (Unspecified)**
3. **Sectors list page (Academy)**
4. **Stations list page (Table)**
5. **Agents list page (Academy)**
6. **Tanks list page (Academy)**
7. **Companies list page (Academy)**
8. **Warehouses list page (Academy)**
9. **Products list page (Academy)**
10. **Vehicles list page (Table)**
11. **Drivers list page (Academy)**
12. **Distances list page (Table)**
13. **Trips list page (Unspecified)**
14. **Users list page (Unspecified)**
15. **Sectors management page (Form)**
16. **Station management page (Form)**
17. **Agents management page (Academy)**
18. **Tanks management page (Form)**
19. **Company management page (Form)**
20. **Warehouse management page (Form)**
21. **Product management page (Form)**
22. **Vehicle management page (Form)**
23. **Driver management page (Form)**
24. **Distance management page (Form)**
25. **Trips management page (Unspecified)**
26. **User management page (Unspecified)**
27. **Transfers report page (Daily / Monthly) (Table)**
28. **Sales report page (Daily / Monthly) (Table)**
29. **Transferred products report page (Daily / Monthly) (Table)**
30. **Supply plan report page (Table)**
31. **Average Transferred product report page (Table)**
32. **EoM (End of Month) Stations' needs report page (Table)**
33. **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**