## Section 2: Databases

You are appointed by a car dealership to create their database infrastructure. There is only one store. In each business day, cars are being sold by a team of salespersons. Each transaction would contain information on the date and time of transaction, customer transacted with, and the car that was sold.

The following are known:

- Each car can only be sold by one salesperson.

- There are multiple manufacturers’ cars sold.

- Each car has the following characteristics:

- Manufacturer

- Model name

- Serial number

- Weight

- Price

Each sale transaction contains the following information:

- Customer Name

- Customer Phone

- Salesperson

- Characteristics of car sold

Set up a PostgreSQL database using the base `docker` image [here](https://hub.docker.com/\_/postgres) given the above. We expect at least a `Dockerfile` which will stand up your database with the DDL statements to create the necessary tables. Produce entity-relationship diagrams as necessary to illustrate your design.

Your team also needs you to query some information from the database that you have designed. You are tasked to write a `sql` statement for each of the following task:

1) I want to know the list of our customers and their spending.

2) I want to find out the top 3 car manufacturers that customers bought by sales (quantity) and the sales number for it in the current month.

For the SQL command, first we need to know which table we want to select from to study the data that we want. After we identify the correct table to choose from, then based on the relationship we select the column that we want and the specific row to further study the data.

At times, if the datas are from two different tables, we might need to use the JOIN statement in order to merge our data neatly and minimizing the large data sets displayed from using a single query.

**I want to know the list of our customers and their spending:**

SELECT customer\_name, price FROM sale\_transaction;

**I want to find out the top 3 car manufacturers that customers bought by sales (quantity) and the sales number for it in the current month:**

SELECT COUNT \*

FROM sale\_transaction;

WHERE

BETWEEN ‘2021-01-01’ AND ‘2021-01-31’

ORDER BY manufacturer DESC

LIMIT 3;

**Note: I am having issue to pull the image from postgresql as it is my initial installation, there might be some command lines or setups which I am not familiar with. Previously, I only have experience using Microsoft SQL Server and to connect to the database name.**