Description of the problem

The problem is based on a company with multiple dealerships that sells cars and executes semantic analysis of the customer's review to rate client satisfaction. This problem also focuses on the production and shipment of cars. To create the diagram correctly it is essential to understand these aspects:

The company is organized into **dealerships** with unique names**.** Each dealership has multiple physical locations named **outlets**, **employees** that work on each outlet. The company needs to store the social security number and the salary of each employee. Some of the employees take on the role of **managers**, managing one outlet each. The date when it started managing the outlet should be stored.

Each dealership can sell a defined set of car **models**. A model is composed of a brand, name, engine and a version. For each model several **cars** can be produced. A car must be stored with the predominant color, his plaque and his identification number (VIN).

Each car is produced by a **factory** and it's crucial to know when it was produced. A factory consists of the name, location, quantity of production lines and the size of its workforce. Each factory is owned by a **brand group** that has a name, the location of its headquarters and a director. A factory needs **parts** from a **part supplier**. A part supplier, represented by its fiscal identification, name and location, can supply multiple parts. Each part is represented by a unique id, name and description.

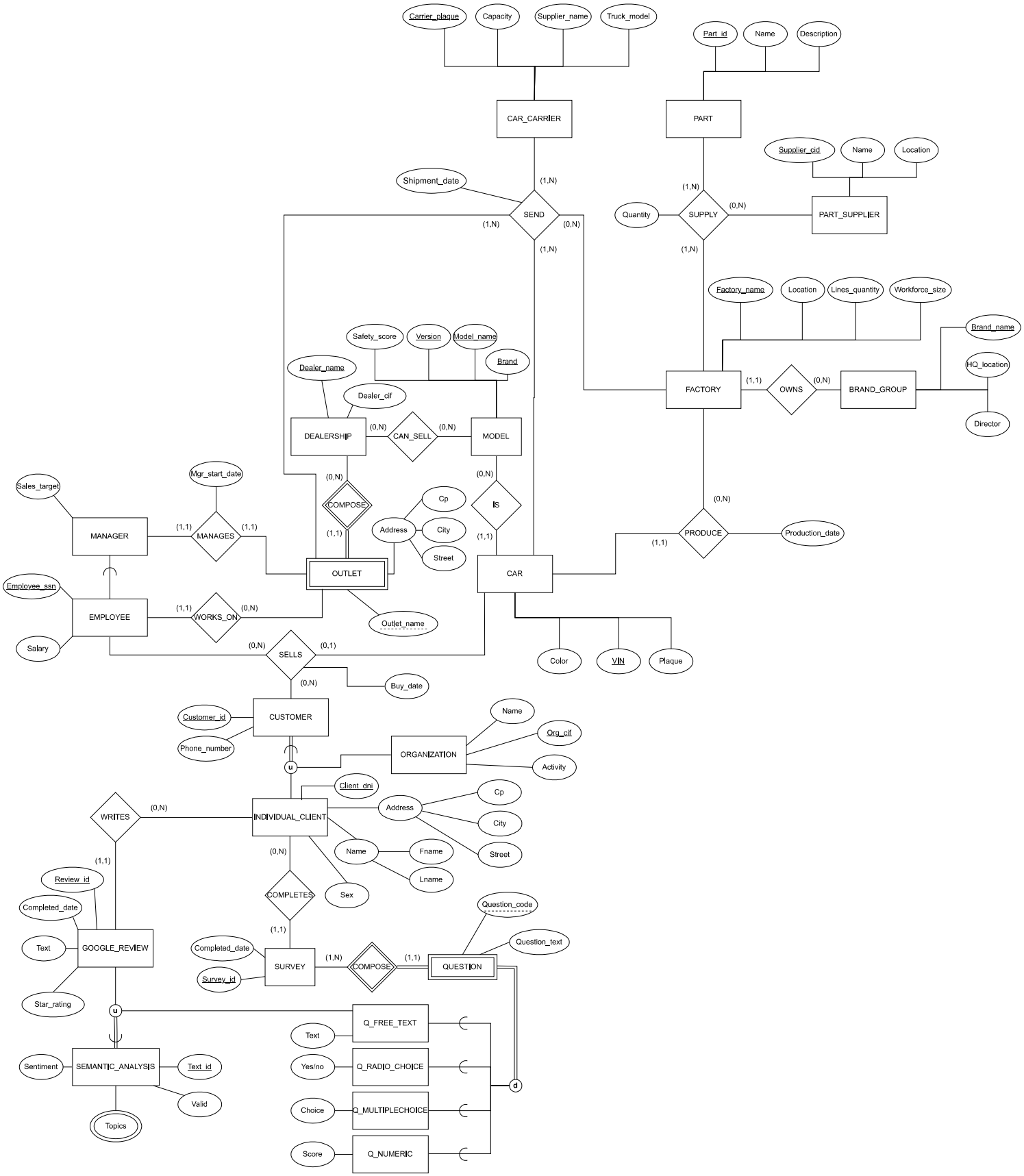
The car shipment starts from a factory to an outlet on a concrete day. The shipment will be made by a **car carrier**, identified by his unique plaque and also should store his capacity, the company that owns the truck and truck model. A car carrier can't send more cars than his capacity.

An employee can sell cars to **customers** on a specific day. A customer can be either an **organization** with name, fiscal identity certificate (CIF) and area of expertise or an **individual client** composed of a name, sex (should be 'M', 'F' or 'O' for others), id (DNI) and address (postal code, city, street). Each customer will also have a representative telephone number.

An individual client could write a google review. The review's information is meant to be stored. The relevant information of each review are the date, the text and the star rating and a unique identifier will be assigned for each review. Also, the company might send **surveys** for individual clients to complete. Each survey has as its properties a unique identifier and a completion date. Each survey is composed of **questions** which have a code as a unique identifier. Questions can be of any of the

following types: free text, radio choice (yes or no), multiple choice and a numeric score (from 0 to 10).

Both google reviews and questions of the type of free text could be analyzed with a machine learning model. The result of the analysis is named **semantic analysis** that stores if the text is valid, the sentiment (positive, negative, neutral…) and the main topics of the text extracted. Both sentiment and topics can be blank as the text is not analyzed if it is not considered valid.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Factory_name
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Lines_quantity
Workforce_size
Brand_name
HQ_location
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OWNS
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Yes/no
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