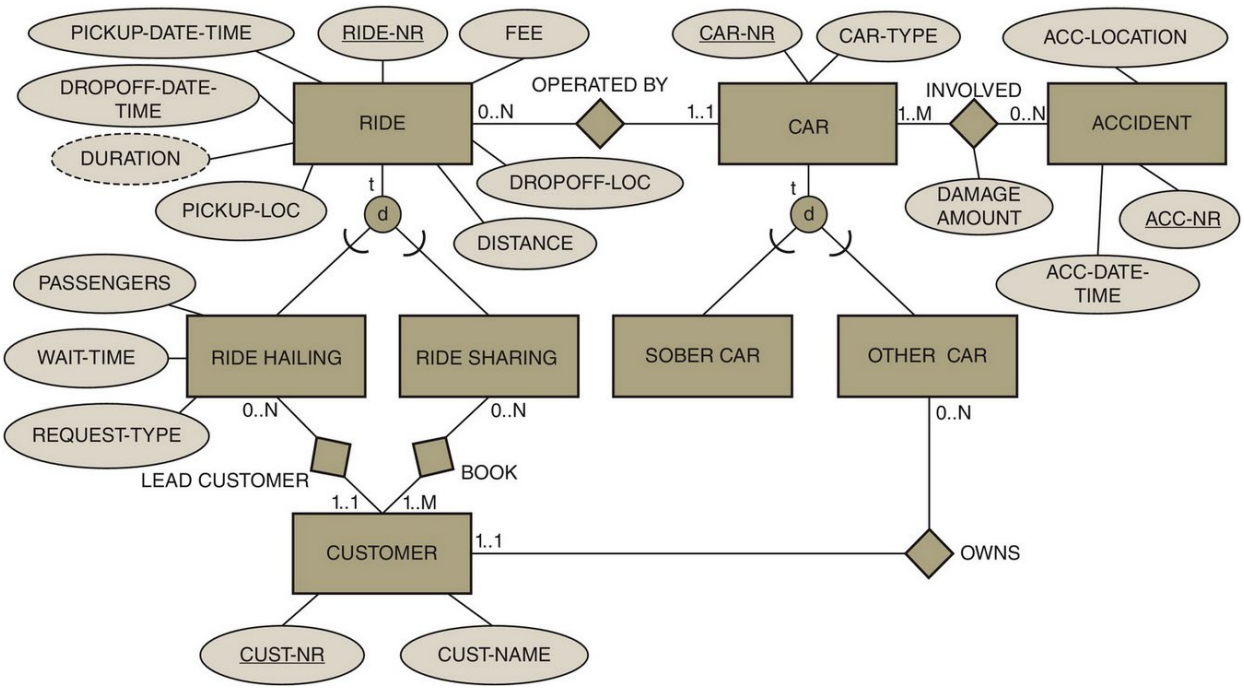
Case Study Sober Ltd.

NOTE: This is the case study discussed during your tutorial and practical exercises in the first four teaching weeks (Canvas Units 1, 2, 3 and 4).

Sober is a new taxi company deploying self-driving cars to provide cab services. Although it operates its own fleet of self-driving cabs, people can also register their cars as Sober cabs and have them provide taxi services whenever they are not using their cars. For the latter, Sober also wants to keep track of the car owners.

The following is an EER diagram depicting the conceptualisation of the database to support Sober Ltd in keeping track of their business:



Task 1 [22 Marks]:

Study the conceptual schema (EER diagram above) and provide a description of the business requirements being captured by the diagram. Your description shall be a list of bulleted points describing, **in plain English to be read as a narrative in natural language**, the meaning of the following EER features:

a) Main entity types with attributes.

b) Relationship types in which the main entity types participate with meaningful attributes, where appropriate.

c) Cardinality constraints holding for the type of relationships.

d) Generalisation/specialisation relationship types holding among entity types.

e) Constraints holding among the specified generalisation/specialisation relationship types.

Task 2 [19 Marks]:

In line with the practical exercises from the first teaching weeks (Units 1, 2 and 3), submit **a relational schema** reflecting as correct as possible the EER model and diagram as stated above. The relational schema must make explicitly clear the following key aspects:

- Which relations and attributes are being considered and the rationale behind.
- Which attributes are defined as primary and foreign keys and the rationale behind, e.g., relationships and cardinality constraints being captured.

Task 3 [9 Marks]:

Implement the previous relational schema by taking into consideration all the logical constraints in terms of data type definitions as well as primary / foreign key relationships. You should use your UH Oracle for this implementation. Your Oracle account will be checked for marking of this task.