Hands-on Lab: Relational Model Concepts

In this module, you have learned the concepts of a relational model, including entity, attribute, relation, degree, and cardinality.

Now, in this lab, let's apply the concepts learned in this module to a real-world example of a database.

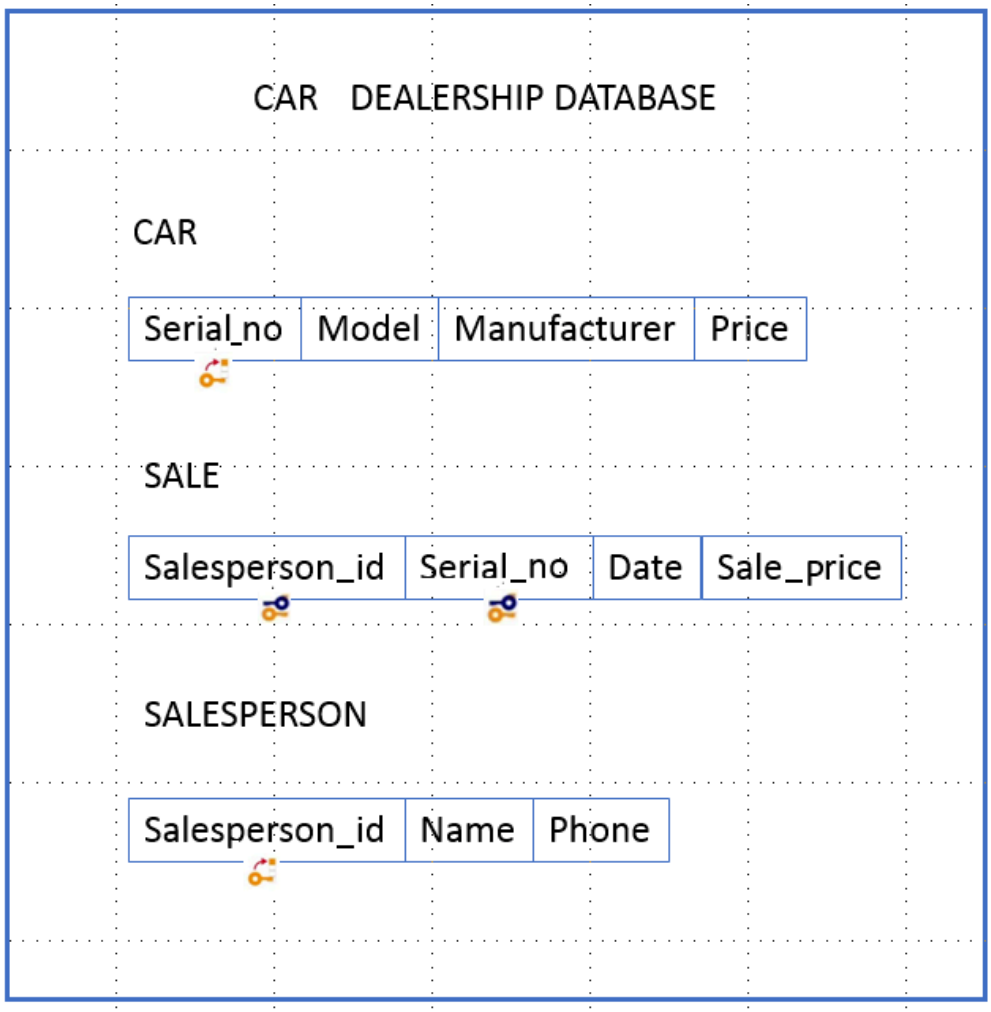
Objectives

After completing this lab, you will evaluate your knowledge of relational model concepts.

Exercise

In this exercise, you will work on a relational database schema called Car Dealership, which someone designed to track automobile sales in a car dealership.

Schema diagram for the Car Dealership relational database:



Relational instance of SALE:

Salesperson_id	Serial_no	Date	Sale_price
10001	1we4ds87	12/03/2020	$ 10,000.00
10005	d63jw3ty	12/03/2020	$ 5,000.00
10009	sy63bjd1	13/03/2020	$ 25,000.00
10001	k2k4edr8	13/03/2020	$ 49,000.00
10051	w3r334ac	13/03/2020	$ 8,000.00

- Now let us go through some questions based on the database schema of Car Dealership and relational instance of SALE:

1. How many relations does the Car Dealership database schema contain?

   ▼ Hint

   A relation is also the mathematical term for a table.

   ▼ Answer

   Three. The Car Dealership database schema contains three relations or tables: CAR, SALE, and SALESPERSON.

2. How many columns does the relation Car contain?

   ▼ Hint

   A relation is also the mathematical term for a table. A table is a combination of rows and columns. The columns are the attributes or fields.

   ▼ Answer

   Four. The relation Car contains four columns: Serial No, Model, Manufacturer, and Price.

3. How many rows does the relation Sale contain?

   ▼ Hint

   A relation is also the mathematical term for a table. A table is a combination of rows and columns. The rows are the tuples.

   ▼ Answer

   Five

4. What is the degree of the relation Salesperson?

   ▼ Hint

   Degree refers to the number of attributes or columns in a relation.

   ▼ Answer

   Three

5. Identify the cardinality of the relation Sale.

▼ Hint

Cardinality refers to the number of tuples, or rows, in a relation.

▼ Answer

Five

6. Identify the attributes of the relation Salesperson.

▼ Hint

A relational schema specifies each column's relation name and type, which are the attributes.

▼ Answer

Salesperson_id, Name, Phone