



Hands-on Lab : Relational Model Concepts

Estimated time needed: 10 minutes

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

Now in this lab, let us try and apply the concepts we have learned in this module to a real-world example of a database.

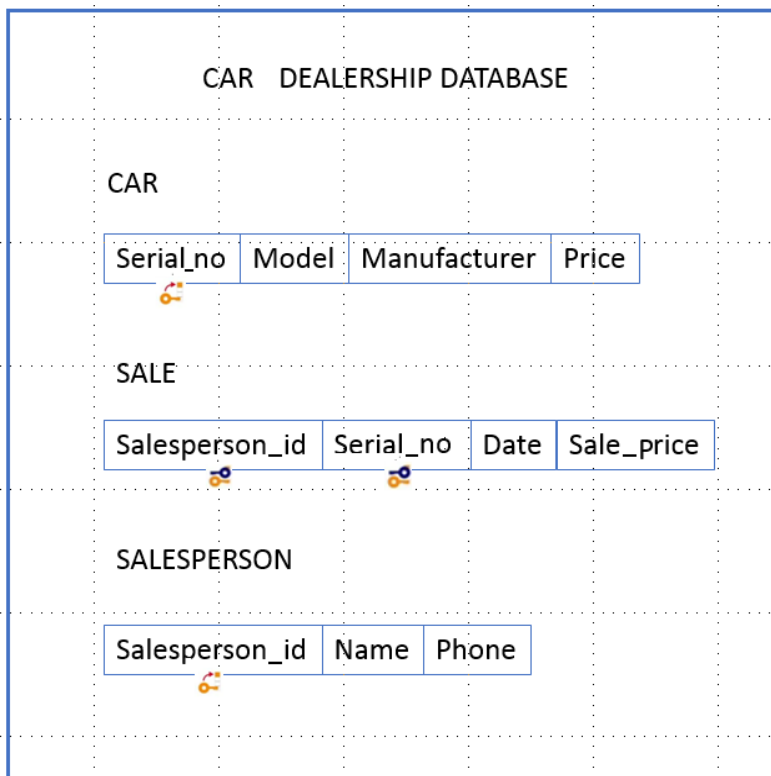
Objectives

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

Exercise

In this exercise, we will be working on a relational database schema called Car Dealership. A database has to be designed to keep track of 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 above 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

1. 1
2. 2
3. 3

1. Three. The Car Dealership database schema contains the following 3 relations or tables: CAR, SALE, SALESPERSON.

- 2.
3. </details>

Copied!

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 the following 4 columns: Serial No, Model, Manufacturer, 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 the relation name and type of each of the columns, which are the attributes.

▼ Answer

Salesperson_id, Name, Phone

Congratulations! You have completed this lab, and you are ready for the next topic.

Author(s)

- [Rav Ahuja](#)
- [Sandip Saha Joy](#)

Changelog

| Date | Version | Changed by | Change Description |
|------------|---------|-----------------|----------------------------|
| 2020-12-23 | 2.1 | Steve Ryan | ID Review |
| 2020-12-03 | 2.0 | Sandip Saha Joy | Created revised md version |
| 2018 | 1.0 | Rav Ahuja | Created initial version |

© IBM Corporation 2020. All rights reserved.