



Topic: SQL, Database Schema

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Important Notes:

All queries should be submitted in a sql file with the query number as the file name. set prefix as 3-2 to differentiate the query file for the day.

The query definition should be in this file.

Case 1

Assume you are working on a database for a car dealership. The database contains the following tables:

Table: Cars

CarID (int, PK)

Brand (varchar(50))

Model (varchar(50))

Year (int)

Mileage (int)

Price (decimal(10,2))

Available (bit)

Table: Customers

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CustomerID (int, PK)
FirstName (varchar(50))
LastName (varchar(50))
Email (varchar(100))
PhoneNumber (varchar(20))
Table: Sales

SaleID (int, PK)
CarID (int, FK to Cars.CarID)
CustomerID (int, FK to Customers.CustomerID)
SaleDate (date)
SalePrice (decimal(10,2))

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Write SQL queries to accomplish the following tasks:

1. Retrieve the top 10 most expensive cars from the Cars table.
2. Retrieve the average price of all available cars from the Cars table.
3. Retrieve the list of customers who have purchased a car, along with the total number of cars each customer has purchased.
4. Retrieve the list of customers who have not yet made a purchase.
5. Insert a new car into the Cars table with the following information: Brand='Toyota', Model='Corolla', Year=2022, Mileage=0, Price=20000, Available=1.
6. Update the price of all cars in the Cars table by adding 10% to their current price.
7. Delete all sales from the Sales table that occurred before January 1, 2022.

Case 2

Consider you've one employee database system. Create table schema and add data according to the following queries.

1. Write a query that returns the first and last name of all employees who have a title that contains the word "Manager".
2. Write a query that returns the department name and the average salary of all employees in each department.
3. Write a query that returns the number of employees who were hired in each year, sorted by year.
4. Write a query that returns the first name, last name, and salary of the top 10 highest-paid employees.
5. Write a query that updates the salary of all employees in the "Sales" department to be 10% higher than their current salary.
6. Write a query that deletes all employees who were hired before the year 2000.
7. Write a query that creates a new table called "employee_stats" that contains the following columns: "department_name", "total_employees", and "average_salary". The table should include one row for each department.
8. Write a query that returns the first and last name of all employees who have the same last name as their manager.
9. Write a query that returns the top 5 departments with the highest average salary.

10. Write a query that returns the first and last name of all employees who have at least one dependent. Sort the results by last name.