BrightLight Tutorials

Data Analytics

Exercise 1: SQL Fundamentals

Database: employees_db

Assume you have a table called **employees** with the following structure:

id	first_name	last_name	department	salary	hire_date	city
1	John	Doe	IT	55000	2018-06-15	New York
2	Jane	Smith	HR	48000	2019-07-20	Chicago
3	Mike	Johnson	Finance	60000	2017-09-30	Los Angeles
4	Sarah	Brown	IT	53000	2021-03-25	New York
5	David	White	Marketing	52000	2016-04-10	San Francisco
6	Emily	Davis	IT	62000	2015-02-14	Chicago
7	Robert	Wilson	Finance	59000	2019-10-01	Houston
8	Jessica	Moore	HR	51000	2018-05-22	Los Angeles
9	Daniel	Clark	Marketing	53000	2022-06-01	Chicago
10	Laura	Hall	IT	50000	2020-08-10	San Francisco

Questions

1. SELECT Statement

Write a SQL query to retrieve all columns from the employees table.

2. SELECT DISTINCT Statement

Write a SQL query to find all the unique departments in the employees table.

3. ORDER BY Statement

Write a SQL query to retrieve all employees' first and last names, ordered by salary in descending order.

4. LIMIT Statement

Write a SQL query to retrieve the top 5 highest-paid employees.

5. WHERE Statement

Write a SQL query to find employees who work in the IT department.

6. AND Statement

Write a SQL query to find employees who work in the Finance department **AND** have a salary greater than 58,000.

7. OR Statement

Write a SQL query to find employees who work in the HR department **OR** the Marketing department.

8. NOT Statement

Write a SQL query to find employees who **do not** work in the IT department.

9. IN Statement

Write a SQL query to find employees who are in the HR, IT, or Finance departments.

10. Combining Conditions

Write a SQL query to find employees who are in the IT department, have a salary greater than 50,000, **and** are located in New York.

11. Combining WHERE, AND, and ORDER BY

Write a SQL query to retrieve the first and last names of employees who work in the **Finance** or **Marketing** department, **earn more than 52,000**, and **order the results by salary in descending order**.

12. Combining SELECT DISTINCT, WHERE, and IN

Write a SQL query to find all the **unique cities** where employees work, **excluding those in the IT and HR departments**.

13. Combining WHERE, NOT, AND, and ORDER BY

Write a SQL query to retrieve employees who **are NOT in the Finance department**, **have a salary greater than 50,000**, and **order the results by hire date in ascending order**.

14. Combining WHERE, OR, IN, and LIMIT

Write a SQL query to find the **first 3 employees** who work in either **Chicago or Los Angeles** and **belong to the IT or Marketing department**.