

EXERCISE 1 : SQL FUNDAMENTALS

Database : employees - db

1. SELECT Statement

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

`SELECT * FROM employees;`

outcome Output

<u>id</u>	<u>first-name</u>	<u>last-name</u>	<u>department</u>	<u>salary</u>	<u>wire-date</u>	<u>City</u>
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	2021-03-28	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	2018-08-21	Los Angeles
9	Daniel	Clark	Marketing	53000	2022-06-01	Chicago
10	Laura	Hall	IT	50000	2020-08-10	San Francisco

2. SELECT DISTINCT statement

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

SELECT DISTINCT department
FROM employees;

department
New York
IT
HR
Finance
Marketing

3. ORDER BY statement

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

SELECT first_name,
 last_name,
 salary
FROM employees
ORDER BY salary DESC;

First-name	last-name	salary
Emily	Davis	62000
Mike	Johnson	60000
Robert	Wilson	59000

4. LIMIT Statement

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

```
SELECT first-name,  
       last-name,  
       salary  
FROM employees  
ORDER BY salary DESC  
LIMIT 5;
```

first-name	last-name	salary
Emily	Davis	62000
Mike	Johnson	60000
Robert	Wilson	59000
John	Doe	55000
Sarah	Brown	53000

5. WHERE Statement

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

```
SELECT first-name,  
       last-name,  
       department
```

FROM employees

WHERE department = 'IT';

first-name	last-name	department
John	Doe	IT
Sarah	Brown	IT
Emily	Davis	IT
Laura	Hall	IT

6. AND statement

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

```
SELECT first_name,  
       last_name,  
       department,  
       salary
```

FROM employees

WHERE department = 'finance' AND salary > 58000

first_name	last_name	department	salary
Mike	Johnson	Finance	60000
Robert	Wilson	Finance	59000

7. OR statement

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

```
SELECT first_name,  
       last_name,  
       department
```

FROM employees

WHERE department = 'HR' OR department = 'Marketing'

First-name	Last-name	department
Jane	Smith	HR
Jessica	Moore	HR
David	White	Marketing
Daniel	Clark	Marketing

IT

8. NOT statement

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

```
SELECT first-name,
       last-name,
       department
  FROM employees
 WHERE department NOT IN ('IT');
```

first-name	last-name	department
Jane	Smith	HR
Mike	Johnson	Finance
David	White	Marketing
Robert	Wilson	Finance
Jessica	Moore	HR
Daniel	Clark	Marketing

9. IN Statement

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

```
SELECT first_name,  
       last_name,  
       department  
FROM employees  
WHERE department IN ('HR', 'IT', 'Finance');
```

first-name	last-name	department
John	Doe	IT
Jane	Smith	HR
Robert	Wilson	Finance
Mike	Johnson	Finance
Sarah	Brown	IT
Emily	Davis	IT
Jessica	Moore	HR
Laura	Hall	IT

10. Combining Conditions

Write an SQL query to find employees who are in the IT department, have a salary greater than \$0 000 and are located in New York.

```
SELECT first_name,  
       last_name,  
       department,  
       salary,  
       city  
FROM employees  
WHERE department = 'IT' AND salary > 50000 AND  
      city = 'New York';
```

first-name	last-name	department	salary	city
John	Doe	IT	55000	New York
Sarah	Brown	IT	53000	New York

11. Combining WHERE, AND and ORDER BY
 Write an SQL query to retrieve the first-name and last names of employees who work in the finance or Marketing department earn money than 52000 and order the results by salary in descending order.

```

SELECT first-name, last-name, department, salary
FROM employees
WHERE department = 'finance' OR department = 'Marketing'
AND salary > 52000
ORDER BY salary DESC;
  
```

first-name	last-name	department	salary
Mike	Jackson	Finance	60000
Robert	Wilson	Finance	59000
Daniel	Clark	Marketing	53000

12. Combining SELECT DISTINCT, WHERE and IN.
Write an SQL query to find all the unique cities where employees work, excluding those in the IT department and HR departments.

~~SELECT first-name, last-name, department, city
FROM employees~~

~~SELECT DISTINCT city
FROM employees
WHERE department NOT IN ('IT', 'HR');~~

City
Marketing
finance

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

~~SELECT first-name, last-name, department, salary, hire-date
FROM employees
WHERE department NOT IN ('Finance') AND salary > 50 000
AND salary > 50 000
ORDER By hire-date ASC;~~

first_name	last_name	department	salary	hire_date
Emily	Davis	Marketing	\$2000	2016-06-10
David	White	IT	62000	2015-02-14
Jessica	Moore	Marketing	\$2000	2016-04-10
John	Doe	HR	\$1000	2018-05-22
Sarah	Brown	IT	\$5000	2018-06-15
Daniel	Clark	IT	\$3000	2021-03-25
		Marketing	\$3000	2022-06-01

14. Combining WHERE, OR, IN, and LIMIT

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

```
SELECT first_name, last_name, department, city
FROM employee
WHERE city IN ('Chicago', 'Los Angeles')
AND department IN ('IT', 'Marketing')
LIMIT 3;
```

first_name	last_name	department	City
Emily	Davis	IT	Chicago
Daniel	Clark	Marketing	Chicago