



# Databases with MySQL

## Exercises *SQL Sub-Querys* *(Solutions)*

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Use the database that was provided to solve the following queries.(USE EXERCISE).

- 1) Find the employees with the lowest and highest salaries for each Job. Order by highest to lowest salary.

	ENAME	JOB	SAL
▶	KING	PRESIDENT	50000
	SCOTT	ANALYST	30000
	FORD	ANALYST	30000
	JONES	MANAGER	29000
	ALLEN	SALESMAN	16000

```
SELECT ENAME, JOB, SAL FROM EMP WHERE SAL IN (SELECT MAX(SAL)
FROM EMP GROUP BY JOB) ORDER BY SAL DESC;
```

- 2) Find the employees with the lowest salaries for each Job. Order by salary.

	ENAME	JOB	SAL
▶	SMITH	CLERK	8000
	WARD	SALESMAN	12500
	MARTIN	SALESMAN	12500
	CLARK	MANAGER	24500
	SCOTT	ANALYST	30000
	FORD	ANALYST	30000

```
SELECT ENAME, JOB, SAL FROM EMP WHERE SAL IN (SELECT MIN(SAL)
FROM EMP GROUP BY JOB) ORDER BY SAL;
```

- 3) Find the employees that were hired most recently in each department. Order by hire date.

	DEPTNO	ENAME	HIREDATE
▶	30	JAMES	2023-12-17
	10	MILLER	2024-01-23
	20	ADAMS	2025-05-23

```
SELECT DEPTNO, ENAME, HIREDATE FROM EMP WHERE
(DEPTNO, HIREDATE) IN (SELECT DEPTNO, MAX(HIREDATE) FROM EMP
GROUP BY DEPTNO) ORDER BY HIREDATE;
```



- 4) Show the following details for each employee earning a salary greater than the average for your department. Sort by department number.

	ENAME	SAL	DEPTNO
▶	KING	5000.00	10
	JONES	4000.00	20
	SCOTT	3000.00	20
	FORD	3000.00	20
	ALLEN	1600.00	30

```
SELECT E.ENAME, E.SAL, E.DEPTNO FROM EMP E WHERE SAL > ANY
(SELECT AVG(X.SAL) FROM EMP X WHERE E.DEPTNO=X.DEPTNO GROUP
BY DEPTNO) ORDER BY DEPTNO;
```

- 5) Use subqueries to find the departments that don't have employees.

	DEPTNO	DNAME
▶	40	OPERATING

```
SELECT DEPTNO, DNAME FROM DEPT WHERE DEPTNO NOT IN (SELECT
DEPTNO FROM EMP);
```

- 6) Find the following information for the department that spends most on salaries each year.

	DEPTNO	COMPENSATION
▶	20	130500.00

```
SELECT DEPTNO, SUM(SAL*12)+SUM(IFNULL(COMM,0)) "COMPENSATION"
FROM EMP GROUP BY DEPTNOHAVING
SUM(SAL*12)+SUM(IFNULL(COMM,0)) >= ALL
(SELECT SUM(SAL*12)+SUM(IFNULL(COMM,0)) FROM EMP GROUP BY
DEPTNO);
```



7) On what year were the greatest number of employees hired?

	YEAR	NUMBER_OF_EI
▶	2023	10

```
SELECT SUBSTR (DATE_FORMAT (HIREDATE, '%Y'), 1, 10) "YEAR",  
COUNT (*) "NUMBER_OF_EMPS"  
FROM EMP GROUP BY DATE_FORMAT (HIREDATE, '%Y') HAVING  
COUNT (*) >= ALL (SELECT COUNT (*)  
FROM EMP GROUP BY DATE_FORMAT (HIREDATE, '%Y')) ;
```