

LET'S START WITH SQL :)

Top SQL Questions asked in interviews(Part-2)

How to think on what SQL clause/operator/function to choose?

1.Data retrieval

- **SELECT**: Use for retrieving data from one or more tables.

2. Data Filtering

- **WHERE**: Filter records based on specific conditions
- **AND, OR, NOT**: Combine multiple conditions.
- **BETWEEN** : Range search
- **IN**: Checks whether a specified value matches any value in a subquery or a list
- **LIKE** : Pattern matching(%, _)

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3. Aggregation on data

- **AVG()**: Returns the average value of a numeric column.
- **MIN()**: Returns the minimum value in a column.
- **MAX()**: Returns the maximum value in a column.
- **SUM()**: Returns the total sum of a numeric column.
- **COUNT()**: Counts the number of non-NULL values in a specified column
- **COUNT(*)**: Counts the total number of rows in a table, including rows with NULL values.

4. Grouping and Filtering Groups

- **GROUP BY**: Groups rows that have the same values in specified columns
- **HAVING**: Filters groups based on specified conditions (used with GROUP BY).

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5. Sorting data

- **ORDER BY:** Sorts the result set by one or more columns.

6. Data retrival from combination of 2 or more tables

- **INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN:** Combine rows from two or more tables based on related columns.

7. Conditional logic

- **CASE :** Perform conditional logic within a query using WHEN, THEN and ELSE
- **IF :** Return values depending on whether a condition is true or false.

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How to solve SQL questions

Step 1: Understand what the question says?

Retrieving data, aggregating results, joining tables, or performing updates/deletes.

Step 2: Check data types, constraints ,primary key, foreign keys, and relationships between tables

Step 3: Use the Appropriate SQL Clauses and Functions

Step 4: Ensure appropriate indexes on columns used in WHERE, JOIN, and ORDER BY clauses.

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Top SQL Questions asked in interviews(Part-2)

Leetcode Questions

1. Swap Salary : <https://leetcode.com/problems/swap-salary/description/>
2. Duplicate Emails : <https://leetcode.com/problems/duplicate-emails/description/>
3. Employees Earning More Than Their Managers :
<https://leetcode.com/problems/employees-earning-more-than-their-managers/description/>
4. Not Boring Movies : <https://leetcode.com/problems/not-boring-movies/description/>
5. Classes More Than 5 Students: <https://leetcode.com/problems/classes-more-than-5-students/description/>

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Leetcode Questions

Swap Salary

Q. Write a solution to swap all 'f' and 'm' values (i.e., change all 'f' values to 'm' and vice versa) with a single update statement and no intermediate temporary tables.

Input:

Salary table:

id	name	sex	salary
1	A	m	2500
2	B	f	1500
3	C	m	5500
4	D	f	500

Output:

id	name	sex	salary
1	A	f	2500
2	B	m	1500
3	C	f	5500
4	D	m	500

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Leetcode Questions

Duplicate Emails

Q. Write a solution to report all the duplicate emails. Note that it's guaranteed that the email field is not NULL.

Return the result table in any order.

Input:

Person table:

+-----+-----+	
id email	
+-----+-----+	
1 a@b.com	
2 c@d.com	
3 a@b.com	
+-----+-----+	

Output:

+-----+	
Email	
+-----+	
a@b.com	
+-----+	

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Leetcode Questions

Employees Earning More Than Their Managers

Q. Write a solution to find the employees who earn more than their managers.

Employee table:

id	name	salary	managerId
1	Joe	70000	3
2	Henry	80000	4
3	Sam	60000	Null
4	Max	90000	Null

Output:

Employee
Joe

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Leetcode Questions

Not Boring Movies

Q. Write a solution to report the movies with an odd-numbered ID and a description that is not "boring".

Return the result table ordered by rating in descending order.

Input:

Cinema table:

id	movie	description	rating
1	War	great 3D	8.9
2	Science fiction		8.5
3	irish	boring	6.2
4	Ice song	Fantasy	8.6
5	House card	Interesting	9.1

Output:

id	movie	description	rating
5	House card	Interesting	9.1
1	War	great 3D	8.9

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Leetcode Questions

Classes More Than 5 Students

Write a solution to find all the classes that have at least five students.

Input:

Courses table:

student	class
A	Math
B	English
C	Math
D	Biology
E	Math
F	Computer
G	Math
H	Math
I	Math

Output:

class
Math