

# SQL Medium Level Interview Questions

SQL Interview Questions 20 July 2021

Intro: SQL will be the fuel for any kind of database

→

① What is DDL & DML? what is the difference

DDL = Data Defining language  
DML = Data Manipulation language

DDL ⇒ structural change of a table called DDL  
[cannot be rollback]

DML ⇒ We are trying to insert the record  
delete the record  
update the record  
we are playing with the data not structure  
called as DML  
[can be rollback]

DDL (structure change)

- CREATE
- ALTER
- DROP
- TRUNCATE

DML (data changes)

- SELECT
- INSERT
- UPDATE
- DELETE

② What is the diff b/w Truncate vs Delete vs Drop?

1) TRUNCATE :- It is a DDL Command which cleans the complete the table.  
[not row by row, Complete table will get clean  
Columns created will get new change, data inside  
in column will get delete.]  
→ Cannot be rollback. (DDL)



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2) Delete :- Delete is a DML command.

↳ by using where condition we can select which are rows to delete, rows to exclude.

↳ It is in our control

↳ either we can delete the complete table or by limit by where condition

↳ Delete can be rollback (DML)

DELETE from ;  
DELETE from where ;

3) DROP :-

Entire table along with structure will be drop.

DROP table ;

\* Never be rollback (DDL)

\* structure also gone

③ When is Group By used ?

⇒ Most of the SQL codes used with 'Group By'

↳ Always a data is like 1 transaction with 1 entry is stored.

Situation :-

- Total sales by 'Country'
- Total sales by 'Product'
- Total sales by 'Customer'

Groupby is used to get record at "Aggregated" at feature level.

Ex:-

India	5M
USA	4M
UK	2M
China	1M

Grouping by aggregation

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④ What is diff b/w "Where" clause & "Having" clause?

⇒ Where condition can be applied to filter the data on the "existing" column on the "table"

Ex:- where Country = 'India' where age >= 18  
where Country = 'UK'

⇒ Having condition also to filter the data but on "aggregated" column

Ex:- select Country, Count of transaction  
↑ Having for aggregation.

## Where

Where clause is used to filter records from table based on specified condition

→ Where (without Group by)

→ row by row operation

→ select, update, delete

## Having

Having clause is used to filter records for "groups" based on specified condition

Having + Group by

Column operation

→ only select



Summary

⑤ What are scalar & aggregate functions in SQL?

## Scalar

- a) Extract
- b) Length

## Aggregate

- a) MIN c) AVG e) Count
- b) MAX d) SUM

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stay in follow!



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⑥ What does 'coalesce' function in SQL?

•  $\rightarrow$  When we are doing joins

Ex:- customer table with order table

If customer not made any purchase it will be shown as "NULL" (default)

We use coalesce to replace null with "zero"  
situation: while doing aggregation

$$\text{sales} = \begin{matrix} 200 \\ 300 \\ \text{Null} \end{matrix} \left. \vphantom{\begin{matrix} 200 \\ 300 \\ \text{Null} \end{matrix}} \right\} \text{Average} = \text{not possible}$$

$$\text{sales} = \begin{matrix} 200 \\ 300 \\ 0 \end{matrix} \left. \vphantom{\begin{matrix} 200 \\ 300 \\ 0 \end{matrix}} \right\} \text{Average} = \text{possible.}$$

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⑦ What are 'Constraints'? How many Constraints are there?

Constraints :-

Where we put restriction to the columns/table

- i) Primary key
- ii) Foreign key
- iii) Default
- iv) check
- v) unique key

Ex:- Table we have all employees

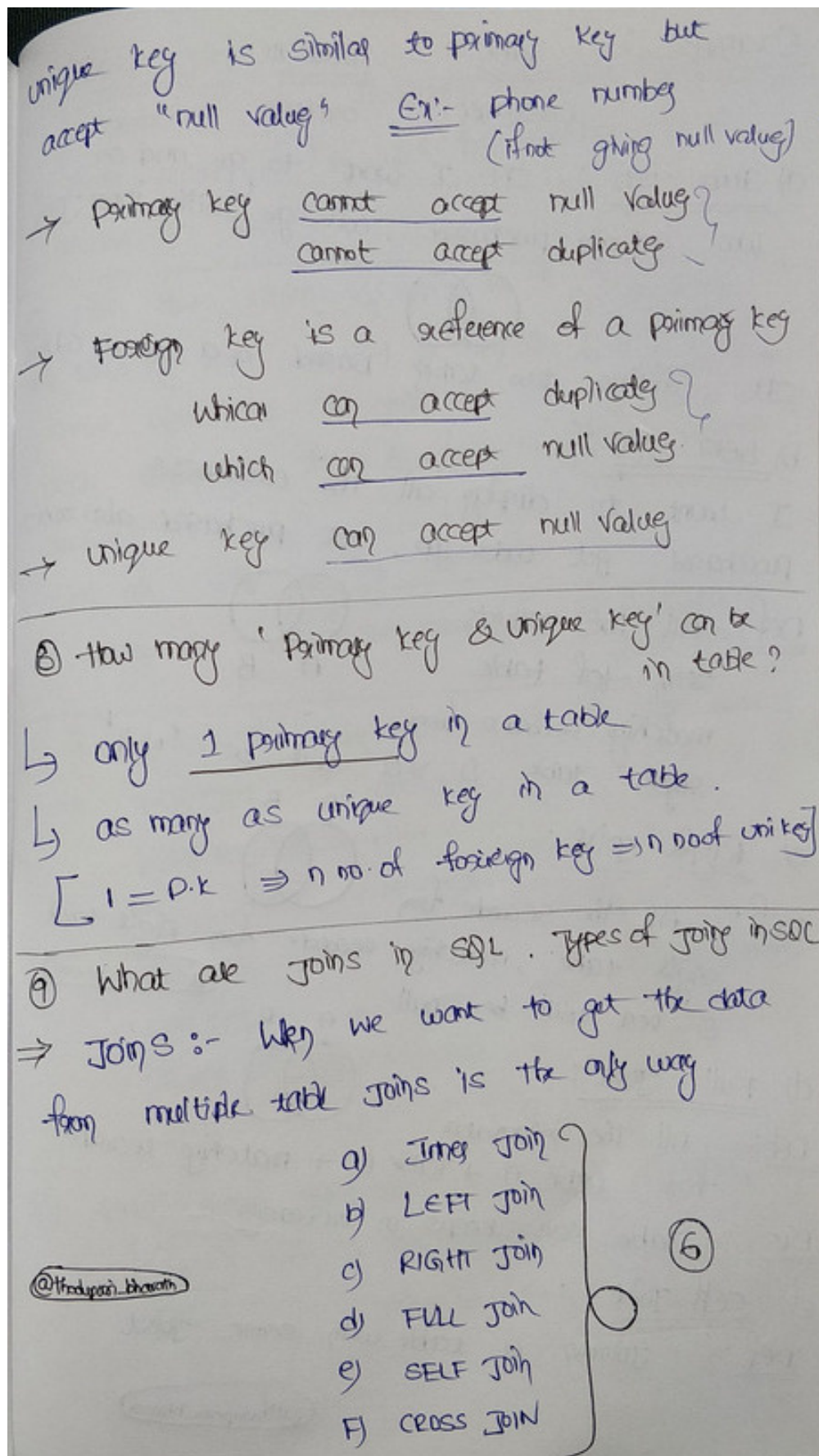
Employee id  $\Rightarrow$  Primary key.

Employee can be multiple dept  $\Rightarrow$  Foreign key.






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Example :- Table A      Table B  
customer      order

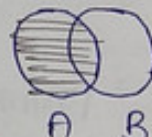
a) Inner Join :- If I want to go and see who actually purchased, will go with inner join



It combines two tables based on a common column


b) Left Join :-  
I want to display all the customers purchased get order ID, not purchased also

Def :- All the records from left table matching records from right table & rest will be 'Null'



c) Right Join :-

Def :- All the records from right table, matching records from left table & rest will be null.




d) Full Join :-

Def :- All the information from table A + Table B + matching records

Dis :- Table size keeps on increasing.

e) Self Join :-

Def :- Joining a table with same join



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CROSS JOIN  
→ Cartesian join, Combination of Left & Right  
\* Every record of 'A' will be matching with all record in table 'B'.

⑩ Diff b/w union & union all ?

\* Row by row  $\Rightarrow$  union & union all  
same operations as join  
union combines the two/more tables  
duplicate  
union all with including duplicates  
\* union all faster than union (due to verification of duplication)

Conditions

- 1) equal no of columns 'n' is
- 2) data type similar by removing

⑪ What is the order of execution of SQL code ?

$\Rightarrow$

FROM	$\rightarrow$ extract
WHERE	$\rightarrow$ Filter
GROUP BY	$\rightarrow$ aggregation
HAVING	$\rightarrow$ similar to
SELECT	$\rightarrow$ select
ORDER BY	$\rightarrow$ Asc, Desc
LIMIT	$\rightarrow$ Limit the rows

⑫ How many joins required to join 8 tables?

$\Rightarrow$   $(n-1) \Rightarrow$  To join 8 tables  
Joins =  $(8-1) \Rightarrow 7$  joins.

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