SQL INTERVIEW QUESTION

LEVEL - EASY

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Q1: What is order of execution in sql?

FROM > WHERE > GROUP BY > HAVING > SELECT > ORDER BY > LIMIT

ORDER	CLAUSE	FUNCTION
1	from	Choose and join tables to get base data.
2	where	Filters the base data.
3	group by	Aggregates the base data.
4	having	Filters the aggregated data.
5	select	Returns the final data.
6	order by	Sorts the final data.
7	limit	Limits the returned data to a row count.

Q1: What is order of execution in sql?

FROM > WHERE > GROUP BY > HAVING > SELECT > ORDER BY > LIMIT

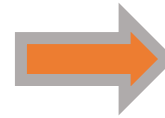**Example:**

SELECT category, AVG(sales) AS avg_sales

FROM SalesData

WHERE year > 2020

GROUP BY category
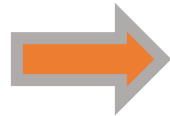
HAVING COUNT(*) > 10

ORDER BY avg_sales DESC

LIMIT 3

category	avg_sales
Electronics	121.9
Home & Kitchen	91
Books	88.2

Q2: Find monthly sales and sort it by desc order

INPUT

order_date 🔒 date	sales 🔒 integer
2021-01-01	20
2021-01-02	32
2021-02-08	45
2021-02-04	31
2021-03-21	33
2021-03-06	19
2021-04-07	21
2021-04-22	10

OUTPUT

years 🔒 numeric	months 🔒 text	totalsales 🔒 bigint
2021	Feb	76
2021	Jan	52
2021	Mar	52
2021	Apr	31

```
CREATE TABLE Products (
        Order_date date,
        Sales int );

INSERT INTO Products(Order_date,Sales)
VALUES
('2021-01-01',20), ('2021-01-02',32), ('2021-02-08',45), ('2021-02-04',31),
('2021-03-21',33), ('2021-03-06',19), ('2021-04-07',21), ('2021-04-22',10)
```

Q2: Find monthly sales and sort it by desc order

Solution PostgreSQL:

SELECT extract(year from Order_date) as years, to_char(Order_date,'Mon') as months,
    sum(Sales) as TotalSales
FROM Products
GROUP BY 1,2
ORDER BY TotalSales DESC

Solution MySql:

SELECT YEAR(Order_date) AS Years, MONTH(Order_date) AS Months, SUM(Sales) AS TotalSales
FROM Products
GROUP BY YEAR(Order_date),MONTH(Order_date)
ORDER BY TotalSales DESC;

Q3: Find the candidates best suited for an open Data Science job. Find candidates who are proficient in Python, SQL, and Power BI.

Write a query to list the candidates who possess all of the required skills for the job. Sort the output by candidate ID in ascending order.

INPUT

candidate_id integer	skills character varying
101	Power BI
101	Python
101	SQL
102	Tableau
102	SQL
108	Python
108	SQL
108	Power BI
104	Python
104	Excel

OUTPUT

candidate_id integer	skill_count bigint
101	3
108	3

```
CREATE TABLE Applications (
        candidate_id int,
        skills varchar);

INSERT INTO Applications(candidate_id,skills)
VALUES
(101, 'Power BI'), (101, 'Python'), (101, 'SQL'), (102, 'Tableau'), (102, 'SQL'),
(108, 'Python'), (108, 'SQL'), (108, 'Power BI'), (104, 'Python'), (104, 'Excel')
```

Q3: Find the candidates best suited for an open Data Science job. Find candidates who are proficient in Python, SQL, and Power BI.

Write a query to list the candidates who possess all of the required skills for the job. Sort the output by candidate ID in ascending order.

Ans: will solve in 3 steps

1. Filter data for 3 skills (Python, SQL, and Tableau) using IN operator

2. Find count of skills for each group using the COUNT function and group students using GROUP BY clause

3. Finally filter the data having count = 3 and sort the output by student id

Query:

select candidate_id, count(skills) as skill_count
from Applications
where skills IN ('Python', 'SQL', 'Power BI')
group by candidate_id
having count(skills) = 3
order by candidate_id

SQL Online Assessment

1. If we divide 0 with a NULL, what will be the error/output

    A) 0   **B) NULL**   C) Division Error   D) Query will not execute

2. If we divide a NULL with 1 *(or any number),* what will be the error/output

    A) 0   **B) NULL**   C) Division Error   D) Query will not execute

3. If we divide a NULL with NULL, what will be the error/output

    A) 0   **B) NULL**   C) Division Error   D) Query will not execute

4. If we divide any 0 with any number, what will be the error/output

    A) 0   B) NULL   C) Division Error   D) Query will not execute

5. If we divide 0 with 0 *(or any number),* what will be the error/output

    A) 0   B) NULL   **C) Division Error**   D) Query will not execute

NOTE: Perform any operation (sum, subtract, div, multiply) with NULL value, output will be NULL

SQL Online Assessment

6. WHERE FirstName LIKE 'A%' . Which names does this query return? Select all that are applicable.

A) ARJUN   B) TARA   C) BHEEM   **D) ABHIMANYU**

7. WHERE FirstName LIKE '_R%' . Which names does this query return? Select all that are applicable.

A) AR   **B) KRISHNA**   **C) ARJUN**   D) ROHINI

8. WHERE FirstName LIKE '%D%' . Which names does this query return? Select all that are applicable.

A) NAKUL   **B) MADHAV**   **C) SUNDAR**   D) MOON

9. WHERE FirstName LIKE 'M%N' . Which names does this query return? Select all that are applicable.

A) MADHAV   **B) MADAN**   **C) MOHAN**   D) NEON

10. WHERE FirstName LIKE 'M_ _ _%' . Which names does this query return? Select all that are applicable.

A) MAN   B) GOPAL   **C) MAANSI**   D) HARI

SQL Online Assessment

11. From the given WHERE clauses, which will return only rows that have a NULL in a column?

A) WHERE column_name <> NULL

B) WHERE column_name IS NULL

C) **WHERE column_name = NULL**

D) WHERE column_name NOT IN (*)

12. From the given WHERE clauses, which will return only rows that have a NOT NULL in a column?

A) WHERE column_name <> NULL

B) WHERE column_name IS NULL

C) WHERE column_name = NULL

D) WHERE column_name != NULL

13. Use of limit and offset in sql together in a sql query. Select all that are applicable.

A) SELECT * FROM artists LIMIT 5 OFFSET 2;

B) SELECT * FROM artists 5, OFFSET 2;

C) SELECT * FROM artists LIMIT 5 , 2;

D) SELECT * FROM artists 2, 5;

14. Which of the update queries listed below is/are valid?

A) UPDATE Supplier SET city='Pune' AND Phone='9123456' AND Fax='044-54321'

B) UPDATE Supplier SET city='Pune', Phone='9123456', Fax='044-54321'

C) Options A & B

D) None of the above

SQL Theoretical Questions

1. What is SQL?

2. What are the subsets of SQL or types of SQL commands and briefly explain?

3. What is the sequence of execution in SQL?

4. Advantages & disadvantage of SQL

5. What is Database? And how to create a database in SQL?

6. What is DBMS?

7. What are Tables and Fields?

8. What are Constraints in SQL?

9. What is a primary key and foreign key?

10. How to create and delete a table in SQL?

11. What is a "TRIGGER" in SQL?

SQL Theoretical Questions

12. How to change a table name in SQL?

13. What is join in SQL? List its different types.

14. What is Normalization in SQL?

15. How to insert a date in SQL?

16. What are the TRUNCATE, DELETE and DROP statements?

17. What are the different types of SQL operators?

18. What are Aggregate and Scalar functions?

19. What does a window function do in SQL?

20. What are operators, share it's types and examples

21. Difference between rank, dense_rank and row_number in sql

22. What are clustered and non-clustered index in SQL?

मा शुच:

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