SQL INTERVIEW QUESTIONS

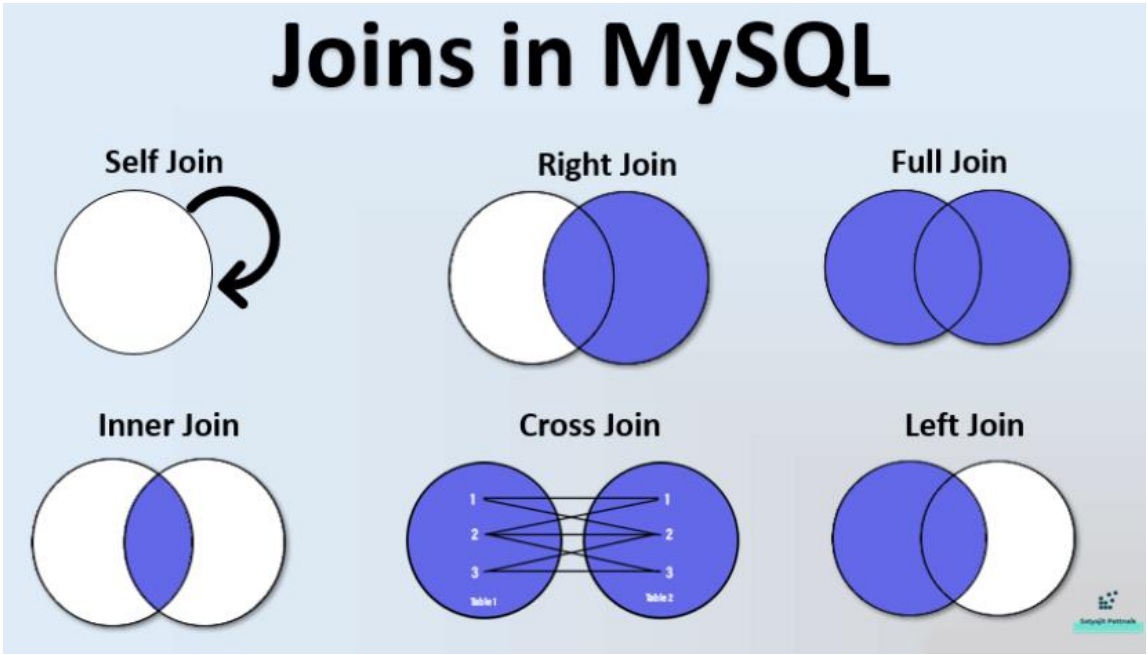
SORTING

- In order to sort a table, we need to use the ORDER BY Clause
- In order to get the results sorted based on certain columns, we need to use this. Usage of asc or desc has to be defined to have the results in ascending or descending orders. Default value being asc (ascending)

  - select field1, field2 from tablename where <clause>order by field1
  - select field1, field2 from tablename where <clause>order by field1 asc
  - select field1, field2 from tablename where <clause>order by field1 desc

JOINS

In most of the real world problems, we might need data from multiple tables, that's where Joins comes into picture.



List the keywords below in order of the occurrence in a query.

1. Group by
2. Order by
3. Select
4. Where
5. From
6. Limit
7. having

Find the first 5 characters from a column.

LEFT(COLUMN, 5)

Find the 3rd to 6th character of a column.

SUBSTR() function

Mask a column such that the last few characters are converted to *.

CONCAT(LEFT(COLUMN,5),'*****')

Retrieve name of employees who have age greater than what Ravi has

NESTED QUERY

Retrieve name of employees who have age greater than what Ravi has and store it in a view.

CREATE VIEW AS (QUERY)

JOIN QUESTIONS

There would be multiple join related questions

Let say, you have employee details in employee table, and project details in project table.

- Question: Find the list of employees that are assigned to some projects
- Question: Find the total list of employees along with their respective project names (Employees with no project details should have their project as null)

FACEBOOK QUESTION

- This was asked in one of the facebook interviews for a Sr.Data Analyst position

Let say you have wifi_id, wifi_speed, wifi_latency,date

- Question 1: Find the average wifi speed for eachwifi
- Question 2: Find the average wifi speed for eachwifi in the last 2 days

CASE STUDY BASED INTERVIEW QUESTIONS

Sample Table – Worker

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
001	Monika	Arora	100000	2014-02-20 09:00:00	HR
002	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
003	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
004	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
005	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
006	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
007	Satish	Kumar	75000	2014-01-20 09:00:00	Account
008	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Sample Table – Bonus

WORKER_REF_ID	BONUS_DATE	BONUS_AMOUNT
1	2016-02-20 00:00:00	5000
2	2016-06-11 00:00:00	3000
3	2016-02-20 00:00:00	4000
1	2016-02-20 00:00:00	4500
2	2016-06-11 00:00:00	3500

Sample Table – Title

WORKER_REF_ID	WORKER_TITLE	AFFECTED_FROM
1	Manager	2016-02-20 00:00:00
2	Executive	2016-06-11 00:00:00
8	Executive	2016-06-11 00:00:00
5	Manager	2016-06-11 00:00:00
4	Asst. Manager	2016-06-11 00:00:00
7	Executive	2016-06-11 00:00:00
6	Lead	2016-06-11 00:00:00
3	Lead	2016-06-11 00:00:00

Write an SQL query to fetch “FIRST_NAME” from Worker table in upper case.

The required query is:

Select upper(FIRST_NAME) from Worker;

Write an SQL query to fetch unique values of DEPARTMENT from Worker table.

The required query is:

```
Select distinct DEPARTMENT from Worker;
```

Write an SQL query to print the first three characters of **FIRST_NAME** from Worker table.

The required query is:

Select substring(FIRST_NAME,1,3) from Worker;

Write an SQL query to find the position of the alphabet (‘a’) in the first name column ‘Amitabh’ from Worker table.

The required query is:

```
Select INSTR(FIRST_NAME, BINARY'a') from
Worker where FIRST_NAME = 'Amitabh';
```

Write an SQL query that fetches the unique values of DEPARTMENT from Worker table and prints its length.

The required query is:

Select distinct length(DEPARTMENT) from Worker;

Write an SQL query to print details of the Workers whose FIRST_NAME contains ‘a’.

The required query is:

```
Select * from Worker where FIRST_NAME like '%a%';
```

Write an SQL query to print details of the Workers whose FIRST_NAME ends with ‘h’ and contains six alphabets.

The required query is:

```
Select * from Worker where FIRST_NAME like '_____h';
```

Write an SQL query to fetch the no. of workers for each department in the descending order.

The required query is:

```
SELECT DEPARTMENT, count(WORKER_ID)
No_Of_Workers
FROM worker
GROUP BY DEPARTMENT
ORDER BY No_Of_Workers DESC;
```

Write an SQL query to print details of the Workers who are also Managers.

The required query is:

```
SELECT DISTINCT W.FIRST_NAME,
T.WORKER_TITLE
FROM Worker W
INNER JOIN Title T
ON W.WORKER_ID = T.WORKER_REF_ID
AND T.WORKER_TITLE in ('Manager');
```

Write an SQL query to show only odd rows from a table.

The required query is:

```
SELECT * FROM Worker WHERE MOD
(WORKER_ID, 2) <> 0;
```

Write an SQL query to show only even rows from a table.

The required query is:

```
SELECT * FROM Worker WHERE MOD
(WORKER_ID, 2) = 0;
```

Write an SQL query to show the current date and time.

Following MySQL query returns the current date:

SELECT CURDATE();

Following MySQL query returns the current date and time:

SELECT NOW();

Following SQL Server query returns the current date and time:

SELECT getdate();

Following Oracle query returns the current date and time:

SELECT SYSDATE FROM DUAL

Write an SQL query to show the top n (say 10) records of a table.

Following MySQL query will return the top n records using the LIMIT method:

```
SELECT * FROM Worker ORDER BY Salary DESC
LIMIT 10;
```

Following SQL Server query will return the top n records using the TOP command:

```
SELECT TOP 10 * FROM Worker ORDER BY
Salary DESC;
```

Following Oracle query will return the top n records with the help of ROWNUM:

```
SELECT * FROM (SELECT * FROM Worker ORDER
BY Salary DESC)
WHERE ROWNUM <= 10;
```

Write an SQL query to determine the nth (say n=5) highest salary from a table.

The following MySQL query returns the nth highest salary:

```
SELECT Salary FROM Worker ORDER BY Salary DESC LIMIT n-1,1;
```

The following SQL Server query returns the nth highest salary:

```
SELECT TOP 1 Salary
FROM (
SELECT DISTINCT TOP n Salary
FROM Worker
ORDER BY Salary DESC
)
ORDER BY Salary ASC;
```

Write an SQL query to determine the 5th highest salary without using TOP orlimit method.

The following query is using the correlated subquery to return the 5th highest salary:

```
SELECT Salary
FROM Worker W1
WHERE 4 = (
SELECT COUNT( DISTINCT ( W2.Salary ) )
FROM Worker W2
WHERE W2.Salary >= W1.Salary
);
```

Use the following generic method to find nth highest salary without using TOP or limit.

```
SELECT Salary
FROM Worker W1
WHERE n-1 = (
SELECT COUNT( DISTINCT ( W2.Salary ) )
FROM Worker W2
WHERE W2.Salary >= W1.Salary
);
```

Write an SQL query to fetch the list of employees with the same salary.

The required query is:

```
Select distinct W.WORKER_ID, W.FIRST_NAME,
W.Salary
from Worker W, Worker W1
where W.Salary = W1.Salary
and W.WORKER_ID != W1.WORKER_ID;
```

Write an SQL query to show the second highest salary from a table.

The required query is:

```
Select max(Salary) from Worker
where Salary not in (Select max(Salary) from
Worker);
```

Write an SQL query to fetch the first 50% records from a table.

The required query is:

```
SELECT *
FROM WORKER
WHERE WORKER_ID <= (SELECT
count(WORKER_ID)/2 from Worker);
```

Write an SQL query to fetch the departments that have less than five people in it.

The required query is:

```
SELECT DEPARTMENT, COUNT(WORKER_ID) as
'Number of Workers' FROM Worker GROUP BY
DEPARTMENT HAVING COUNT(WORKER_ID) <
5;
```

Write an SQL query to print the Cname of employees having the highest salary in each department.

The required query is:

```
SELECT t.DEPARTMENT,t.FIRST_NAME,t.Salary
from(SELECT max(Salary) as
TotalSalary,DEPARTMENT from Worker group by
DEPARTMENT) as TempNew
Inner Join Worker t on
TempNew.DEPARTMENT=t.DEPARTMENT
and TempNew.TotalSalary=t.Salary;
```

Thank You !!