SQL Query Interview Questions and Answers

We have created three sample tables: Student Table, Program Table, and Scholarship Table. We will be using these tables to perform various query operations.

Student Table

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science
202	Umesh	Sharma	8.44	2021-09-01 08:30:00	Mathematics
203	Rakesh	Kumar	5.60	2021-09-01 10:00:00	Biology
204	Radha	Sharma	9.20	2021-09-01 12:45:00	Chemistry
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
208	Navleen	Kaur	7.00	2021-09-01 06:30:00	Mathematics

Program Table

STUDENT_REF_ID	PROGRAM_NAME	PROGRAM_START_DATE
201	Computer Science	2021-09-01 00:00:00

STUDENT_REF_ID	PROGRAM_NAME	PROGRAM_START_DATE
202	Mathematics	2021-09-01 00:00:00
208	Mathematics	2021-09-01 00:00:00
205	Physics	2021-09-01 00:00:00
204	Chemistry	2021-09-01 00:00:00
207	Psychology	2021-09-01 00:00:00
206	History	2021-09-01 00:00:00
203	Biology	2021-09-01 00:00:00

Scholarship Table

STUDENT_REF_ID	SCHOLARSHIP_AMOUNT	SCHOLARSHIP_DATE
201	5000	2021-10-15 00:00:00
202	4500	2022-08-18 00:00:00
203	3000	2022-01-25 00:00:00
201	4000	2021-10-15 00:00:00

Let us start by taking a look at some of the **most asked SQL Query interview questions**:

1. Write a SQL query to fetch "FIRST_NAME" from the Student table in upper case and use ALIAS name as STUDENT_NAME.

SELECT upper(FIRST_NAME) as STUDENT_NAME from Student;

Output:

SHIVANSH
UMESH
RAKESH
RADHA
KUSH
PREM
PANKAJ
NAVLEEN

2. Write a SQL query to fetch unique values of MAJOR Subjects from Student table.

SELECT DISTINCT MAJOR from STUDENT;
or
SELECT MAJOR FROM STUDENT GROUP BY(MAJOR);

Output:

Computer Science
Mathematics
Biology
Chemistry
Physics
History
English

3. Write a SQL query to print the first 3 characters of FIRST_NAME from Student table.

SELECT SUBSTRING(FIRST_NAME, 1, 3) FROM Student;

Output:

Shi
Ume
Rak
Rad
Kus
Pre
Pan
Nav

4. Write a SQL query to find the position of alphabet (‘a’) int the first name column ‘Shivansh’ from Student table.

SELECT INSTR(FIRST_NAME, 'a') FROM Student WHERE FIRST_NAME = 'Shivansh';

Output:

5

5. Write a SQL query that fetches the unique values of MAJOR Subjects from Student table and print its length.

SELECT MAJOR,LENGTH(MAJOR) FROM Student GROUP BY(MAJOR);
or
SELECT DISTINCT MAJOR, LENGTH(MAJOR) FROM Student;

Output:

MAJOR	LENGTH(MAJOR)
Computer Science	16
Mathematics	11
Biology	7
Chemistry	9
Physics	7
History	7
English	7

6. Write a SQL query to print FIRST_NAME from the Student table after replacing ‘a’ with ‘A’.

SELECT REPLACE(FIRST_NAME, 'a', 'A') FROM Student;

Output:

ShivAnsh
Umesh
RAkesh
RAdhA
Kush
Prem
PAnkAj
NAvleen

7. Write a SQL query to print the FIRST_NAME and LAST_NAME from Student table into single column COMPLETE_NAME.

SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS COMPLETE_NAME FROM Student;

Output:

Shivansh Mahajan
Umesh Sharma
Rakesh Kumar
Radha Sharma
Kush Kumar
Prem Chopra
Pankaj Vats
Navleen Kaur

8. Write a SQL query to print all Student details from Student table order by FIRST_NAME Ascending and MAJOR Subject descending .

SELECT * FROM Student ORDER BY FIRST_NAME , MAJOR DESC;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics
208	Navleen	Kaur	7	2021-09-01 06:30:00	Mathematics
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry
203	Rakesh	Kumar	5.6	2021-09-01 10:00:00	Biology
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science
202	Umesh	Sharma	8.44	2021-09-01 08:30:00	Mathematics

9. Write a SQL query to print details of the Students with the FIRST_NAME as 'Prem' and 'Shivansh' from Student table.

SELECT * from Student WHERE FIRST_NAME IN ('Prem' , 'Shivansh');

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History

10. Write a SQL query to print details of the Students excluding FIRST_NAME as 'Prem' and 'Shivansh' from Student table.

SELECT * from Student WHERE FIRST_NAME NOT IN ('Prem', 'Shivansh');

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
202	Umesh	Sharma	8.44	2021-09-01 08:30:00	Mathematics
203	Rakesh	Kumar	5.6	2021-09-01 10:00:00	Biology
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
208	Navleen	Kaur	7	2021-09-01 06:30:00	Mathematics

11. Write a SQL query to print details of the Students whose FIRST_NAME ends with 'a'.

SELECT * FROM Student WHERE FIRST_NAME LIKE '%a';

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry

12. Write an SQL query to print details of the Students whose FIRST_NAME ends with 'a' and contains six alphabets.

SELECT * FROM Student WHERE FIRST_NAME LIKE '_____a';

13. Write an SQL query to print details of the Students whose GPA lies between 9.00 and 9.99.

SELECT * FROM Student WHERE GPA BETWEEN 9.00 AND 9.99;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English

14. Write an SQL query to fetch the count of Students having Major Subject 'Computer Science'.

SELECT Major, COUNT(*) as TOTAL_COUNT FROM Student WHERE MAJOR = 'Computer Science';

Output:

MAJOR	TOTAL_COUNT
Computer Science	1

15. Write an SQL query to fetch Students full names with GPA >= 8.5 and <= 9.5.

SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS FULL_NAME FROM Student WHERE GPA BETWEEN 8.5 and 9.5;

Output:

Shivansh Mahajan
Radha Sharma

16. Write an SQL query to fetch the no. of Students for each MAJOR subject in the descending order.

SELECT MAJOR, COUNT(MAJOR) from Student group by MAJOR order by COUNT(MAJOR) DESC;

Output:

MAJOR	COUNT(MAJOR)
Mathematics	2

MAJOR	COUNT(MAJOR)
Physics	1
History	1
English	1
Computer Science	1
Chemistry	1
Biology	1

17. Display the details of students who have received scholarships, including their names, scholarship amounts, and scholarship dates.

```
SELECT
   Student.FIRST_NAME,
   Student.LAST_NAME,
   Scholarship.SCHOLARSHIP_AMOUNT,
   Scholarship.SCHOLARSHIP_DATE
FROM
   Student
INNER JOIN
   Scholarship ON Student.STUDENT_ID = Scholarship.STUDENT_REF_ID;
```

Output:

FIRST_NAME	LAST_NAME	SCHOLARSHIP_AMOUNT	SCHOLARSHIP_DATE
Shivansh	Mahajan	5000	2021-10-15 00:00:00
Umesh	Sharma	4500	2022-08-18 00:00:00
Rakesh	Kumar	3000	2022-01-25 00:00:00

FIRST_NAME	LAST_NAME	SCHOLARSHIP_AMOUNT	SCHOLARSHIP_DATE
Shivansh	Mahajan	4000	2021-10-15 00:00:00

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

SELECT * FROM Student WHERE student_id % 2 != 0;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science
203	Rakesh	Kumar	5.6	2021-09-01 10:00:00	Biology
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English

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

SELECT * FROM Student WHERE student_id % 2 = 0;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
202	Umesh	Sharma	8.44	2021-09-01 08:30:00	Mathematics
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
208	Navleen	Kaur	7	2021-09-01 06:30:00	Mathematics

20. List all students and their scholarship amounts if they have received any. If a student has not received a scholarship, display NULL for the scholarship details.

```
SELECT
   Student.FIRST_NAME,
   Student.LAST_NAME,
   Scholarship.SCHOLARSHIP_AMOUNT,
   Scholarship.SCHOLARSHIP_DATE
FROM
   Student
LEFT JOIN
   Scholarship ON Student.STUDENT_ID = Scholarship.STUDENT_REF_ID;
```

21. Write an SQL query to show the top n (say 5) records of Student table order by descending GPA.

SELECT * from Student ORDER BY GPA DESC LIMIT 5;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science
202	Umesh	Sharma	8.44	2021-09-01 08:30:00	Mathematics

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

SELECT * FROM Student ORDER BY GPA DESC LIMIT 5, 1;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics

23. Write an SQL query to determine the 5th highest GPA without using LIMIT keyword.

```
SELECT * FROM Student s1
WHERE 4 = (
   SELECT COUNT(DISTINCT (s2.GPA))
   FROM Student s2
   WHERE s2.GPA >= s1.GPA
);
```

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science

24. Write an SQL query to fetch the list of Students with the same GPA.

```
SELECT s1.* FROM Student s1, Student s2 WHERE s1.GPA = s2.GPA AND s1.Student_id != s2.Student_id;
```

25. Write an SQL query to show the second highest GPA from a Student table using sub-query.

```
SELECT MAX(GPA) FROM Student
WHERE GPA NOT IN(SELECT MAX(GPA) FROM Student);
```

Output:

9.56

26. Write an SQL query to show one row twice in results from a table.

```
SELECT * FROM Student
UNION ALL
SELECT * FROM Student ORDER BY STUDENT_ID;
```

27. Write an SQL query to list STUDENT_ID who does not get Scholarship.

```
SELECT STUDENT_ID FROM Student
WHERE STUDENT_ID NOT IN (SELECT STUDENT_REF_ID FROM Scholarship);
```

Output:

204
205
206
207
208

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

```
SELECT * FROM Student WHERE STUDENT_ID <= (SELECT COUNT(STUDENT_ID)/2 FROM Student);
```

29. Write an SQL query to fetch the MAJOR subject that have less than 4 people in it.

```
SELECT MAJOR, COUNT(MAJOR) AS MAJOR_COUNT FROM Student GROUP BY MAJOR HAVING COUNT(MAJOR) < 4;
```

Output:

MAJOR	MAJOR_COUNT
Biology	1
Chemistry	1
Computer Science	1
English	1
History	1
Mathematics	2
Physics	1

30. Write an SQL query to show all MAJOR subject along with the number of people in there.

SELECT MAJOR, COUNT(MAJOR) AS ALL_MAJOR FROM Student GROUP BY MAJOR;

Output:

MAJOR	ALL_MAJOR
Biology	1
Chemistry	1
Computer Science	1
English	1
History	1

MAJOR	ALL_MAJOR
Mathematics	2
Physics	1

31. Write an SQL query to show the last record from a table.

```
SELECT * FROM Student WHERE STUDENT_ID = (SELECT MAX(STUDENT_ID) FROM STUDENT);
```

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
208	Navleen	Kaur	7	2021-09-01 06:30:00	Mathematics

32. Write an SQL query to fetch the first row of a table.

```
SELECT * FROM Student WHERE STUDENT_ID = (SELECT MIN(STUDENT_ID) FROM Student);
```

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	8.79	2021-09-01 09:30:00	Computer Science

33. Write an SQL query to fetch the last five records from a table.

```
SELECT *
FROM (
   SELECT *
   FROM Student
   ORDER BY STUDENT_ID DESC
   LIMIT 5
) AS subquery
ORDER BY STUDENT_ID;
```

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
205	Kush	Kumar	7.85	2021-09-01 08:30:00	Physics
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
208	Navleen	Kaur	7	2021-09-01 06:30:00	Mathematics

34. Write an SQL query to fetch three max GPA from a table using co-related subquery.

```
SELECT DISTINCT GPA FROM Student S1
WHERE 3 >= (SELECT COUNT(DISTINCT GPA) FROM Student S2 WHERE S1.GPA <= S2.GPA) ORDER BY S1.GPA DESC;
```

Output:

9.78
9.56
9.2

35. Write an SQL query to fetch three min GPA from a table using co-related subquery.

```
SELECT DISTINCT GPA FROM Student S1
WHERE 3 >= (SELECT COUNT(DISTINCT GPA) FROM Student S2 WHERE S1.GPA >= S2.GPA) ORDER BY S1.GPA;
```

Output:

5.6
7
7.85

36. Write an SQL query to fetch nth max GPA from a table.

```
SELECT DISTINCT GPA FROM Student S1
WHERE n >= (SELECT COUNT(DISTINCT GPA) FROM Student S2 WHERE S1.GPA <= S2.GPA) ORDER BY S1.GPA DESC;
```

37. Write an SQL query to fetch MAJOR subjects along with the max GPA in each of these MAJOR subjects.

```
SELECT MAJOR, MAX(GPA) as MAXGPA FROM Student GROUP BY MAJOR;
```

Output:

MAJOR	MAXGPA
Biology	5.6
Chemistry	9.2
Computer Science	8.79
English	9.78
History	9.56
Mathematics	8.44
Physics	7.85

38. Write an SQL query to fetch the names of Students who has highest GPA.

SELECT FIRST_NAME, GPA FROM Student WHERE GPA = (SELECT MAX(GPA) FROM Student);

Output:

FIRST_NAME	GPA
Pankaj	9.78

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

Query to get current date :
SELECT CURDATE();
Query to get current date and time :
SELECT NOW();

40. Write a query to create a new table which consists of data and structure copied from the other table (say Student) or clone the table named Student.

CREATE TABLE CloneTable AS SELECT * FROM Student;

41. Write an SQL query to update the GPA of all the students in 'Computer Science' MAJOR subject to 7.5.

UPDATE Student SET GPA = 4.0 WHERE MAJOR = 'Computer Science';

42. Write an SQL query to find the average GPA for each major.

SELECT MAJOR, AVG(GPA) AS AVERAGE_GPA FROM Student GROUP BY MAJOR;

Output:

MAJOR	AVERAGE_GPA
Biology	5.6
Chemistry	9.2
Computer Science	4
English	9.78
History	9.56
Mathematics	7.72
Physics	7.85

43. Write an SQL query to show the top 3 students with the highest GPA.

SELECT * FROM Student ORDER BY GPA DESC LIMIT 3;

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
207	Pankaj	Vats	9.78	2021-09-01 02:30:00	English
206	Prem	Chopra	9.56	2021-09-01 09:24:00	History
204	Radha	Sharma	9.2	2021-09-01 12:45:00	Chemistry

44. Write an SQL query to find the number of students in each major who have a GPA greater than 7.5.

SELECT MAJOR, COUNT(STUDENT_ID) AS HIGH_GPA_COUNT FROM Student WHERE GPA > 3.5 GROUP BY MAJOR;

Output:

MAJOR	HIGH_GPA_COUNT
Biology	1
Chemistry	1
Computer Science	1
English	1
History	1
Mathematics	2
Physics	1

45. Write an SQL query to find the students who have the same GPA as 'Shivansh Mahajan'.

SELECT * FROM Student WHERE GPA = (SELECT GPA FROM Student WHERE FIRST_NAME = 'Shivansh' AND LAST_NAME = 'Mahajan');

Output:

STUDENT_ID	FIRST_NAME	LAST_NAME	GPA	ENROLLMENT_DATE	MAJOR
201	Shivansh	Mahajan	4	2021-09-01 09:30:00	Computer Science