

1.What is SQL?

Ans:

SQL stands for Structured Query Language. It is the standard language for relational database management systems. It is especially useful in handling organized data comprised of entities (variables) and relations between different entities of the data.

2.What are Constraints in SQL?

Ans:

Constraints are used to specify the rules concerning data in the table. It can be applied for single or multiple fields in an SQL table during creation of table or after creating using the ALTER TABLE command. The constraints are:

NOT NULL - Restricts NULL value from being inserted into a column.

CHECK - Verifies that all values in a field satisfy a condition.

DEFAULT - Automatically assigns a default value if no value has been specified for the field.

UNIQUE - Ensures unique values to be inserted into the field.

INDEX - Indexes a field providing faster retrieval of records.

PRIMARY KEY - Uniquely identifies each record in a table.

FOREIGN KEY - Ensures referential integrity for a record in another table.

3.What is a Primary Key?

Ans:

The PRIMARY KEY constraint uniquely identifies each row in a table. It must contain UNIQUE values and has an implicit NOT NULL constraint.

4.What is a UNIQUE constraint?

Ans:

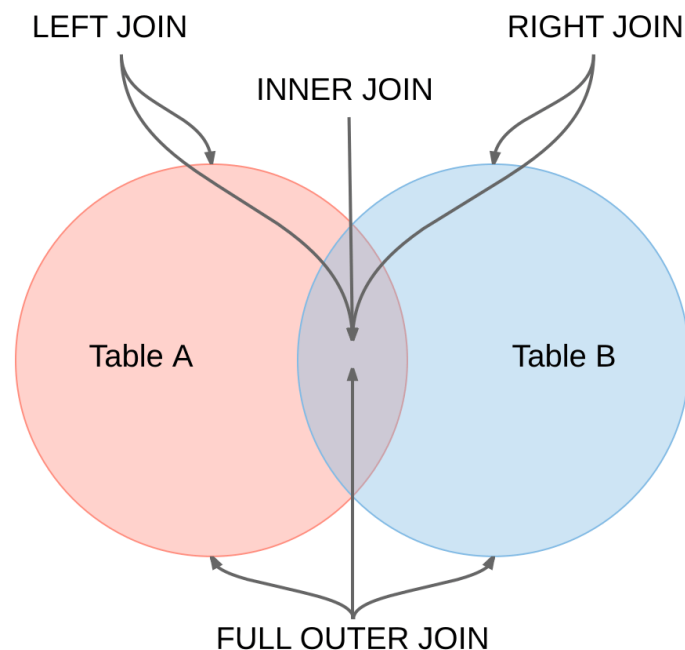
A UNIQUE constraint ensures that all values in a column are different. This provides uniqueness for the column(s) and helps identify each row uniquely. Unlike primary key, there can be multiple unique constraints defined per table.

5.What is a Foreign Key?

Ans:

A FOREIGN KEY comprises of single or collection of fields in a table that essentially refer to the PRIMARY KEY in another table. Foreign key constraint ensures referential integrity in the relation between two tables.

6.What is a Join? List its different types.



7. What is a Self-Join?

Ans:

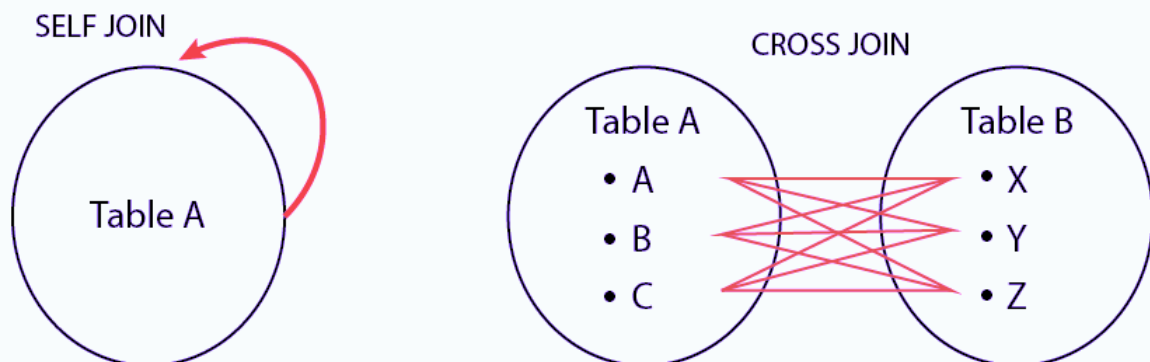
self JOIN is a case of regular join where a table is joined to itself based on some relation between its own column(s). Self-join uses the INNER JOIN or LEFT JOIN clause and a table alias is used to assign different names to the table within the query.

8. What is a Cross-Join?

Ans:

Cross join can be defined as a cartesian product of the two tables included in the join. The table after join contains the same number of rows as in the cross-product of number of rows in the two tables.

If a WHERE clause is used in cross join then the query will work like an INNER JOIN.



9. What is a Query?

Ans:

A query is a request for data or information from a database table or combination of tables. A database query can be either a select query or an action query.

10. What is the SELECT statement?

Ans:

SELECT operator in SQL is used to select data from a database. The data returned is stored in a result table, called the result-set.

11. What are some common clauses used with SELECT query in SQL?

Ans:

Some common SQL clauses used in conjunction with a SELECT query are as follows:

- **WHERE** clause in SQL is used to filter records that are necessary, based on specific conditions.
- **ORDER BY** clause in SQL is used to sort the records based on some field(s) in ascending (**ASC**) or descending order (**DESC**).
- **GROUP BY** clause in SQL is used to group records with identical data and can be used in conjunction with some aggregation functions to produce summarized results from the database.
- **HAVING** clause in SQL is used to filter records in combination with the GROUP BY clause. It is different from WHERE, since WHERE clause cannot filter aggregated records.

12. What is an Alias in SQL?

Ans:

It is a temporary name assigned to the table or table column for the purpose of a particular SQL query.

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

Ans:

DELETE statement is used to delete rows from a table.

TRUNCATE command is used to delete all the rows from the table and free the space containing the table.

DROP command is used to remove an object from the database. If you drop a table, all the rows in the table is deleted and the table structure is removed from the database.

14. What is the difference between DROP and TRUNCATE statements?

Ans:

If a table is dropped, all things associated with the tables are dropped as well. This includes - the relationships defined on the table with other tables, the integrity checks and constraints, access privileges and other grants that the table has. To create and use the table again in its original form, all these relations, checks, constraints, privileges and relationships need to be redefined. However, if a table is truncated, none of the above problems exist and the table retains its original structure.

15. What is the difference between DELETE and TRUNCATE statements?

Ans:

The **TRUNCATE** command is used to delete all the rows from the table and free the space containing the table. The **DELETE** command deletes only the rows from the table based on the condition given in the where clause or deletes all the rows from the table if no condition is specified. But it does not free the space containing the table.

SQL Query Questions:

Q-1. Write an SQL query to fetch "FIRST_NAME" from Worker table using the alias name as <WORKER_NAME>.

Ans: `Select FIRST_NAME AS WORKER_NAME from Worker;`

Q-2. Write an SQL query to fetch "FIRST_NAME" from Worker table in upper case.

Ans: `Select upper(FIRST_NAME) from Worker;`

Q-3. Write an SQL query to fetch unique values of DEPARTMENT from Worker table.

Ans: `Select distinct DEPARTMENT from Worker;`

Q-4. Write an SQL query to print the FIRST_NAME from Worker table after replacing 'a' with 'A'.

Ans: `Select REPLACE(FIRST_NAME,'a','A') from Worker;`

Q-5. Write an SQL query to print the FIRST_NAME and LAST_NAME from Worker table into a single column COMPLETE_NAME. A space char should separate them.

Ans: `select first_name|| last_name from employees`

Q-6. Write an SQL query to print all Worker details from the Worker table order by FIRST_NAME Ascending.

Ans: `Select * from Worker order by FIRST_NAME asc;`

Q-7. Write an SQL query to print all Worker details from the Worker table order by FIRST_NAME Ascending and DEPARTMENT Descending.

Ans: `Select * from Worker order by FIRST_NAME asc,DEPARTMENT desc;`

Q-8. Write an SQL query to print details for Workers with the first name as "Vipul" and "Satish" from Worker table.

Ans: `Select * from Worker where FIRST_NAME in ('Vipul','Satish');`

Q-9. Write an SQL query to print details of workers excluding first names, "Vipul" and "Satish" from Worker table.

Ans: `Select * from Worker where FIRST_NAME not in ('Vipul','Satish');`

Q-10. Write an SQL query to print details of Workers with DEPARTMENT name as "Admin".

Ans: Select * from Worker where DEPARTMENT like 'Admin%';

Q-11. Write an SQL query to print details of the Workers whose FIRST_NAME contains 'a'.

Ans: Select * from Worker where FIRST_NAME like '%a%';

Q-12. Write an SQL query to print details of the Workers whose FIRST_NAME ends with 'a'.

Ans: Select * from Worker where FIRST_NAME like '%a';

Q-13. Write an SQL query to print details of the Workers whose FIRST_NAME ends with 'h' and contains six alphabets.

Ans: Select * from Worker where FIRST_NAME like '_____h';

Q-14. Write an SQL query to print details of the Workers whose SALARY lies between 100000 and 500000.

Ans: Select * from Worker where SALARY between 100000 and 500000;

Q-15. Write an SQL query to print details of the Workers who have joined in Feb'2014.

Ans: Select * from Worker where year(JOINING_DATE) = 2014 and month(JOINING_DATE) = 2;

Q-16. Write an SQL query to fetch the count of employees working in the department 'Admin'.

Ans: SELECT COUNT(*) FROM worker WHERE DEPARTMENT = 'Admin';

Q-17. Write an SQL query to fetch worker names with salaries >= 50000 and <= 100000.

Ans: SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) As Worker_Name,
Salary

FROM worker

WHERE WORKER_ID IN

(SELECT WORKER_ID FROM worker

WHERE Salary BETWEEN 50000 AND 100000);

Q-18. Write an SQL query to fetch the no. of workers for each department in the descending order.

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

Q-19. Write an SQL query to print details of the Workers who are also Managers.

```
Ans: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');
```

Q-20. Write an SQL query to fetch duplicate records having matching data in some fields of a table.

```
Ans:SELECT WORKER_TITLE, AFFECTED_FROM, COUNT(*)  
  
FROM Title  
  
GROUP BY WORKER_TITLE, AFFECTED_FROM  
  
HAVING COUNT(*) > 1;
```

Q-21. Write an SQL query to show only odd rows from a table.

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

Q-22. Write an SQL query to show only even rows from a table.

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

Q-23. Write an SQL query to show the current date and time.

```
Ans:SELECT SYSDATE FROM DUAL;
```

Q-24. Write an SQL query to show the top n (say 10) records of a table.

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

Q-25. Write an SQL query to determine the 5th highest salary

Ans:

Q-26. Write an SQL query to show the second highest salary from a table.

Ans: