1. What does SQL stand for and what are its primary functions?

Ans:- SQL stands for Structured Query Language. It is a domain-specific language used for managing and manipulating relational databases. SQL provides a standardized way to interact with relational database management systems (RDBMS), allowing users to perform various operations on the data stored in databases. The primary functions of SQL include:

1. **Data Querying:** SQL allows users to retrieve data from a database using the SELECT statement.
2. **Data Modification:** SQL provides statements such as INSERT, UPDATE, and DELETE, allowing users to add new records to a database, update existing records, or delete records based on specified conditions.
3. **Schema Modification:** SQL allows users to define, modify, and delete the structure of a database, including tables, indexes, and relationships
4. **Data Integrity:** SQL supports constraints such as primary keys, foreign keys, unique constraints, and check constraints to ensure data integrity within a database.
5. **Data Control:** SQL provides statements for managing access to data, such as GRANT and REVOKE, which are used to assign and revoke permissions on database objects. This helps control who can access or modify data in the database.
6. **Transaction Control:** SQL supports transactions, which are sequences of one or more SQL statements that are executed as a single unit. Transactions ensure the consistency and integrity of the database by allowing either all the changes to be applied or none at all.
7. **Explain the difference between a primary key and a foreign key?**

Ans: A primary key and a foreign key are two types of constraints used in relational databases to establish and enforce relationships between tables. Here's a brief explanation of the differences between them.

**PRIMARY KEY**:-PRIMARY KEY Constraint is a combination of NOT NULL and Unique constraints. The column to which we have applied the primary constraint will always contain a unique value and will not allow null values.

**Foreign key:-**A foreign key is used for referential integrity.

When we have two tables, and one table takes reference from another table, i.e., the same column is present in both the tables and that column acts as a primary key in one table. That particular column will act as a foreign key in another table.

**3. What is a subquery in SQL and when would you use it?**

A subquery in SQL is a query nested within another query. It's used to retrieve data that will be used in the main query as a condition or to perform further operations. The result of a subquery can be a single value, a set of values, or a table.

We use it for following things:-

1. Filtering data
2. Comparisons
3. Checking existence
4. Nested operations
5. Calculations.

**4.** Can you describe what a view is in SQL and how it differs from a table?

Ans:- In SQL, a view is a virtual table that is based on the result of a SELECT query. Unlike a table, a view does not store the data itself but rather represents a stored query that can be used as if it were a table.

**5. What is a stored procedure in SQL and what are its advantages?**

Ans:- A stored procedure in SQL is a precompiled collection of one or more SQL statements and procedural logic, stored in a database, and designed to perform a specific task or set of tasks.

**Advantages:-**

* Reusable: As mentioned, multiple users and applications can easily use and reuse stored procedures by merely calling it.
* Easy to modify: You can quickly change the statements in a stored procedure as and when you want to, with the help of the ALTER TABLE command.
* Security: Stored procedures allow you to enhance the security of an application or a database by restricting the users from direct access to the table.
* Low network traffic: The server only passes the procedure name instead of the whole query, reducing network traffic.
* Increases performance: Upon the first use, a plan for the stored procedure is created and stored in the buffer pool for quick execution for the next time.