What is a JOIN in SQL?

A join Is used to combine rows from two or more tables based on a related column between them.

What are the types of joins in sql?

INNER JOIN: Returns only matching rows from both tables.

LEFT JOIN: Returns all rows from the left table and matching rows from the right table.

RIGHT JOIN: Returns all rows from the right table and matching rows from the left table.

FULL JOIN: Returns all rows when there is a match in one of the tables.

CROSS JOIN: Produces a Cartesian product (each row in Table A pairs with all rows in Table B).

NATURAL JOIN: Automatically joins based on common column names.

SELF JOIN: Joins a table to itself.

What is the difference between INNER JOIN and OUTER JOIN?

Inner join Returns only matching rows.

Outer join Returns matching rows and unmatched rows from one or both tables.

What are SQL Constraints?

SQL constraints are a set of rules applied to a column or table to maintain data integrity. Constraints are used to maintain accurate and consistency data/information In database.

What are different types of Constraints?

NOT NULL: Prevents NULL values.

UNIQUE: Ensures all values are unique.

PRIMARY KEY: Unique + Not NULL.

FOREIGN KEY: Enforces referential integrity.

CHECK: Restricts values based on condition.

DEFAULT: Provides a default value.

What is the difference between PRIMARY KEY and UNIQUE?

Primary key is combination of Unique and not null whereas Unique constraint allows null values.Only one Primary key is allowed to used in a table.

What is a FOREIGN KEY?

The FOREIGN KEY constraint is a key used to link two tables together.

A FOREIGN KEY is a field (or collection of fields) in one table that refers to the PRIMARY KEY in another table.

Can a table have multiple PRIMARY KEYS?

No a table cannot have multiple Primary keys but it can have multiple unique Constraints. Only one primary key Is Allowed to use in a table.

What are SQL Functions?

SQL functions are built-in programs used to perform various operations on the database. They can be broadly categorized into Aggregate Functions and Scalar Functions.

Name some aggregate functions?

Aggregate functions are   COUNT(), SUM(), AVG() , MIN(), MAX()

What is the difference between CHAR and VARCHAR?

In SQL, both CHAR and VARCHAR are used to store character strings, but they have distinct differences in terms of storage and usage.

CHAR is fixed length dataype it is static whereas VARCHAR Is variable length datatype it is dynamic.

What is ON DELETE CASCADE? When should it be used?

ON DELETE CASCADE is a referential action used in Foreign Key constraints.

When a parent row (from the primary key table) is deleted, all the corresponding child rows (in the foreign key table) are automatically deleted.

What is ON DELETE SET NULL?

ON DELETE SET NULL is another referential action in Foreign Key constraints.

When a parent row is deleted, all child rows referencing it will have their foreign key set to NULL instead of being deleted.

What is the difference between BETWEEN and IN operators in SQL?

Between is used to filter data within a specified range of values.

IN is used to check specefic known values within the range.

What is the difference between the NVL and NVL2 functions?

NVL(): Replaces a NULL value with a specified replacement value.

NVL2(): Evaluates two values:

If the first argument is NOT NULL, returns the second argument.

If the first argument is NULL, returns the third argument