**SQL Joins**

1. **What is a JOIN in SQL?**

A JOIN in SQL is used to combine rows from two or more tables based on a related column between them. It allows you to retrieve related data stored in different tables in a single query.

Types of JOINs and Their Differences:

INNER JOIN

Returns only the rows that have matching values in both tables.

LEFT JOIN

Returns all rows from the left table and matched rows from the right table; unmatched right rows show NULL.

RIGHT JOIN

Returns all rows from the right table and matched rows from the left table; unmatched left rows show NULL.

FULL OUTER JOIN

Returns all rows when there is a match in either left or right table; unmatched rows from both sides show NULL. (Not supported in all DBMS.)

**2. How are JOINs used to combine data from multiple tables?**

JOINs link tables by matching values in related columns (usually primary key and foreign key).

This lets you:

Retrieve comprehensive data spread across tables.

Avoid data duplication by normalizing data.

Perform complex queries combining attributes from multiple tables.

Example (INNER JOIN):

SELECT students.student\_name, courses.course\_name

FROM students

INNER JOIN courses ON students.co