Key Takeaways

Functions in SQL

- Aggregate functions like `SUM()`, `AVG()`, `COUNT()`, `MAX()`, and `MIN()` are used for summarizing data.

- Scalar functions operate on single values, including string functions (`LEN()`, `CONCAT()`), date functions (`NOW()`, `CURDATE()`), and mathematical functions (`ROUND()`, `ABS()`, `POWER()`).

Joins and Relationships

- Relationships in databases are established using primary and foreign keys.

- Types of joins include:

    - **Inner Join**: Matches rows in both tables.

    - **Left Join**: Includes all rows from the left table, with NULLs for unmatched rows in the right table.

    - **Right Join**: Includes all rows from the right table, with NULLs for unmatched rows in the left table.

    - **Full Outer Join**: Combines all rows from both tables, with NULLs for non-matching rows.

    - **Cross Join**: Produces a Cartesian product of rows from both tables.

    - **Self Join**: Compares rows within the same table.