MySQL Aggregate Functions:

MySQL provides several aggregate functions to perform calculations on a set of values and return a single value as the result. The commonly used aggregate functions are:

a) SUM: Calculates the sum of all values in a column.

Syntax:

sql

SELECT SUM(column\_name) FROM table\_name;

Example:

sql

SELECT SUM(quantity) FROM orders;

b) AVG: Calculates the average of all values in a column.

Syntax:

sql

SELECT AVG(column\_name) FROM table\_name;

Example:

sql

SELECT AVG(price) FROM products;

c) COUNT: Returns the number of rows in a table or the number of non-null values in a column.

Syntax:

sql

SELECT COUNT(column\_name) FROM table\_name;

Example:

sql

SELECT COUNT(\*) FROM customers; -- Count all rows in the table

SELECT COUNT(product\_name) FROM products; -- Count non-null values in the column

MySQL ORDER BY and GROUP BY Clause:

The ORDER BY clause is used to sort the result set based on one or more columns. The GROUP BY clause is used to group rows with similar values into summary rows. Here are the syntax and examples:

a) ORDER BY:

Syntax:

sql

SELECT column1, column2, ...

FROM table\_name

ORDER BY column1 [ASC|DESC];

Example:

sql

SELECT product\_name, price, category

FROM products

ORDER BY price DESC;

b) GROUP BY:

Syntax:

sql

SELECT column1, column2, ...

FROM table\_name

GROUP BY column1, column2, ...;

Example:

sql

SELECT category, AVG(price)

FROM products

GROUP BY category;

MySQL Subqueries:

A subquery is a query nested within another query. It allows you to retrieve data based on the results of another query. Here's an example:

Syntax:

sql

SELECT column1, column2, ...

FROM table\_name

WHERE column\_name IN (SELECT column\_name FROM another\_table);

Example:

sql

SELECT product\_name, price

FROM products

WHERE category\_id IN (SELECT category\_id FROM categories WHERE category\_name = 'Electronics');

MySQL Joins:

Joins are used to combine rows from two or more tables based on related columns between them. There are different types of joins, such as INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL JOIN. Here's an example of an INNER JOIN:

Syntax:

sql

SELECT column1, column2, ...

FROM table1

INNER JOIN table2 ON table1.column\_name = table2.column\_name;

Example:

sql

SELECT orders.order\_id, customers.customer\_name

FROM orders

INNER JOIN customers ON orders.customer\_id = customers.customer\_id;