Module 9: Aggregate Functions with Group By and Having

Aggregate Functions:

- Select statement produces a list of rows that match a given set of conditions.
- If we want to know overall characteristics of rows then we use aggregate functions to calculate summary values.
- These are the functions that

Sum and Avg:

- Sum() and Avg() functions calculate sums and averages.
- They are commonly used with numeric values.
- For other values result would be converted to numbers and might produce insensible result.
- They ignore NULL values while computing the result.

Max and Min:

- Max() and Min() are comparison functions.
- They return:
  - Largest or smallest
  - Lexically last or first
  - Latest or earliest
- They ignore NULL values while computing the result.

Count:

- Count(*) will count all the selected rows.
- Count(column_name) will count the records where the column_name is NOT NULL.
- Count(DISTINCT column_name) will count the rows with unique values in the specified column.

Group By and Having:

- GROUP BY clause is used for generating summary values for subgroups within a set of selected rows.
- GROUP BY that names multiple columns arranges rows according to the combinations of values in those columns.
- Having clause is used to retrieve those groups that have particular summary characteristics and eliminate the rest.

Stages of query processing:

- ❑ WHERE, if present, identifies the initial set of records to select from a table.
- ❑ GROUP BY arranges the selected records into groups.
- ❑ Aggregate functions compute summary values for each group.
- ❑ HAVING identifies which groups to retrieve for the final result set.

MCQs

1) Which MySQL command is used to retrieve a maximum value?

Options:

A. TOP B. MOST

C. UPPER D. MAX

Soln:

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2) Which of the following is a MySQL aggregate function

Options:

A. LEFT B. AVG

C. JOIN D. LEN

Soln:

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3. What value is returned after executing the following statement?

SELECT SUM(SALARY) FROM EMPLOYEES;

Assume there are ten employee records and each contains a SALARY value of 100, except for one, which has a null value in the SALARY field.

Options:

A. 900 B. 1000

C. NULL D. None of the above

Soln:
