TOPS TECHNOLOGY

Module 4 – Introduction to DBMS

Presented By :

Nandni Vala

SQL Group By

1.What is the GROUP BY clause in SQL? How is it used with aggregate functions?

- The **GROUP BY** clause in SQL is used to group rows that have the same values in specified columns into summary rows. It is commonly used with aggregate functions to calculate summary statistics for each group.
- **Syntax**:
- SELECT column1, aggregate_function(column2)
- FROM table_name
- GROUP BY column1;
- **Usage with Aggregate Functions**:
- **Aggregate functions** such as COUNT(), SUM(), AVG(), MAX(), and MIN() are used to perform calculations on each group.

- **Example**:
- To find the total sales for each employee:
- SELECT employee_id, SUM(sale_amount) AS total_sales
- FROM sales
- GROUP BY employee_id;

2.Explain the difference between GROUP BY and ORDER BY.

GROUP BY:

- **Purpose**: Groups rows that have the same values in specified columns into summary rows.
- **Usage**: It is used with aggregate functions (e.g., SUM(), AVG(), COUNT()) to perform calculations on each group of data.
- **Effect**: It does not sort the result set; rather, it groups the data.
- **Example**:
  - SELECT department_id, COUNT(employee_id) AS employee_count
  - FROM employees
  - GROUP BY department_id;
  - This groups employees by department_id and counts the number of employees in each department.

- **ORDER BY**:
- **Purpose**: Sorts the result set based on one or more columns in ascending (default) or descending order.
- **Usage**: It is used to sort the final result set after any filtering or grouping has occurred.
- **Effect**: It orders the rows in the result set.
- **Example**:
- SELECT name, salary
- FROM employees
- ORDER BY salary DESC;
- This sorts employees by salary in descending order.