TOPS TECHNOLOGY

Module 4 – Introduction to DBMS

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Data Manipulation Language (DML)

1.Define the INSERT, UPDATE, and DELETE commands in SQL.

- **INSERT Command**
- **Purpose**: Adds new rows of data into a table.
- **Syntax**:
  - INSERT INTO table_name (column1, column2, column3, ...)
  - VALUES (value1, value2, value3, ...);
  - **Example**:
  - INSERT INTO employees (employee_id, name, department)
  - VALUES (1, 'John Doe', 'HR');
  - Adds a new row into the employees table with values for employee_id, name, and department.

- **UPDATE Command**
- **Purpose**: Modifies existing data in a table.
- **Syntax**:
- UPDATE table_name
- SET column1 = value1, column2 = value2, ...
- WHERE condition;
- The **WHERE** clause specifies which rows to update; without it, all rows in the table are updated.
- **Example**:
- UPDATE employees
- SET department = 'Finance'
- WHERE employee_id = 1;
- Updates the department of the employee with employee_id = 1 to 'Finance'.

- **DELETE Command**
- **Purpose**: Removes rows from a table.
- **Syntax:**
- DELETE FROM table_name
- WHERE condition;
- The **WHERE** clause specifies which rows to delete; without it, all rows in the table are deleted.
- **Example**:
- DELETE FROM employees
- WHERE employee_id = 1;
- Deletes the row from the employees table where employee_id = 1.

2. What isthe importance of the WHERE clause in UPDATE and DELETE operations?

- **In the UPDATE Operation**
- **Purpose**: The **WHERE** clause determines which rows will be updated with new values.
- **Without WHERE**: If you omit the **WHERE** clause, all rows in the table will be updated with the specified values, which is usually not the intended behavior.
  - **Example :**
- UPDATE employees
- SET department = 'Marketing';
- This will update the **department** column to **'Marketing'** for **all** employees in the table.
- **With WHERE**:
- UPDATE employees
- SET department = 'Marketing'
- WHERE employee_id = 1;

- **In the DELETE Operation**
- **Purpose**: The **WHERE** clause determines which rows should be deleted from the table.
- **Without WHERE**: If you omit the **WHERE** clause, all rows in the table will be deleted, which is typically catastrophic for your data.
- **Example**:
- DELETE FROM employees;
- This will **delete all rows** from the employees table.
- **With WHERE**
- DELETE FROM employees
- WHERE employee_id = 1;