**Table Schema: Employee Attendance Table**

Let's create a new table called **Employee Attendance** to practice various SQL operations.

**Employee Attendance Table Structure:**

| **AttendanceID (PK)** | **EmployeeName** | **Department** | **Date** | **Status** | **HoursWorked** |
| --- | --- | --- | --- | --- | --- |
| 1 | John Doe | IT | 2025-05-01 | Present | 8 |
| 2 | Priya Singh | HR | 2025-05-01 | Absent | 0 |
| 3 | Ali Khan | IT | 2025-05-01 | Present | 7 |
| 4 | Riya Patel | Sales | 2025-05-01 | Late | 6 |
| 5 | David Brown | Marketing | 2025-05-01 | Present | 8 |

**Tasks:**

**1. CRUD Operations:**

1. **Add a new attendance record:**
   * Insert a record for **Neha Sharma**, from **Finance**, on **2025-05-01**, marked as **Present**, with **8** hours worked.
2. **Update attendance status:**
   * Change **Riya Patel's** status from **Late** to **Present**.
3. **Delete a record:**
   * Remove the attendance entry for **Priya Singh** on **2025-05-01**.
4. **Read all records:**
   * Display all attendance records sorted by **EmployeeName** in **ascending order**.

**2. Sorting and Filtering:**

1. **Sort by Hours Worked:**
   * List employees sorted by **HoursWorked** in **descending order**.
2. **Filter by Department:**
   * Display all attendance records for the **IT** department.
3. **Filter with AND condition:**
   * List all **Present** employees from the **IT** department.
4. **Filter with OR condition:**
   * Retrieve all employees who are either **Absent** or **Late**.

**3. Aggregation and Grouping:**

1. **Total Hours Worked by Department:**
   * Calculate the **total hours worked** grouped by **Department**.
2. **Average Hours Worked:**
   * Find the **average hours worked** per day across all departments.
3. **Attendance Count by Status:**
   * Count how many employees were **Present**, **Absent**, or **Late**.

**4. Conditional and Pattern Matching:**

1. **Find employees by name prefix:**

* List all employees whose **EmployeeName** starts with **'R'**.

1. **Filter by multiple conditions:**

* Display employees who worked **more than 6 hours** and are marked **Present**.

1. **Filter using BETWEEN operator:**

* List employees who worked between **6 and 8 hours**.

**5. Advanced Queries:**

1. **Top 2 employees with the most hours:**
   * Display the **top 2 employees** with the **highest number of hours worked**.
2. **Employees who worked less than the average hours:**
   * List all employees whose **HoursWorked** are **below the average**.
3. **Group by Status:**
   * Calculate the **average hours worked** for each **attendance status** (Present, Absent, Late).
4. **Find duplicate entries:**
   * Identify any employees who have **multiple attendance records** on the **same date**.

**6. Join and Subqueries (if related tables are present):**

1. **Department with most Present employees:**
   * Find the **department** with the **highest number of Present employees**.
2. **Employee with maximum hours per department:**
   * Find the **employee with the most hours worked** in each **department**.