

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:

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

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

- Total Hours Worked by Department:**
 - Calculate the **total hours worked** grouped by **Department**.
- Average Hours Worked:**

- Find the **average hours worked** per day across all departments.
 - 11. **Attendance Count by Status:**
 - Count how many employees were **Present, Absent, or Late**.
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4. Conditional and Pattern Matching:

12. Find employees by name prefix:

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

13. Filter by multiple conditions:

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

14. Filter using BETWEEN operator:

- List employees who worked between **6 and 8 hours**.
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5. Advanced Queries:

15. Top 2 employees with the most hours:

- Display the **top 2 employees** with the **highest number of hours worked**.

16. Employees who worked less than the average hours:

- List all employees whose **HoursWorked** are **below the average**.

17. Group by Status:

- Calculate the **average hours worked** for each **attendance status** (Present, Absent, Late).

18. Find duplicate entries:

- Identify any employees who have **multiple attendance records** on the **same date**.
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6. Join and Subqueries (if related tables are present):

19. Department with most Present employees:

- Find the **department** with the **highest number of Present employees**.

20. Employee with maximum hours per department:

- Find the **employee with the most hours worked** in each **department**.