Employee Attendance (CRUD Operations)

```
use Employee;
CREATE TABLE EmployeeAttendance (
   AttendanceID INT PRIMARY KEY,
   EmployeeName VARCHAR(100),
   Department VARCHAR(100),
   Date DATE,
   Status VARCHAR(20),
   HoursWorked INT
);
select * from EmployeeAttendance;
-- Insert initial records--
INSERT INTO EmployeeAttendance VALUES
(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);
select * from EmployeeAttendance;
```

--1. CRUD Operations--

```
-- 1. Insert a new attendance record--
INSERT INTO EmployeeAttendance VALUES
(6, 'Neha Sharma', 'Finance', '2025-05-01', 'Present', 8);

-- 2. Update Riya Patel's status from Late to Present--
UPDATE EmployeeAttendance
SET Status = 'Present'
WHERE EmployeeName = 'Riya Patel' AND Date = '2025-05-01';

-- 3. Delete the record for Priya Singh--
```

```
DELETE FROM EmployeeAttendance
WHERE EmployeeName = 'Priya Singh' AND Date = '2025-05-01';

-- 4. Display all records sorted by EmployeeName (ascending)--
SELECT * FROM EmployeeAttendance
ORDER BY EmployeeName ASC;
```

--2. Sorting and Filtering--

```
-- 5. Sort employees by HoursWorked in descending order--
SELECT * FROM EmployeeAttendance
ORDER BY HoursWorked DESC;

-- 6. Attendance records for IT department--
SELECT * FROM EmployeeAttendance
WHERE Department = 'IT';

-- 7. Present employees from IT department--
SELECT * FROM EmployeeAttendance
WHERE Department = 'IT' AND Status = 'Present';

-- 8. Employees who are either Absent or Late--
SELECT * FROM EmployeeAttendance
WHERE Status = 'Absent' OR Status = 'Late';
```

--3. Aggregation and Grouping--

```
-- 9. Total hours worked grouped by Department--
SELECT Department, SUM(HoursWorked) AS TotalHours
FROM EmployeeAttendance
GROUP BY Department;

-- 10. Average hours worked per day across all departments--
SELECT AVG(HoursWorked) AS AverageHoursPerDay
```

```
FROM EmployeeAttendance;

-- 11. Count of employees by attendance Status--
SELECT Status, COUNT(*) AS Count
FROM EmployeeAttendance
GROUP BY Status;

--4. Conditional and Pattern Matching--
-- 12. Employees whose names start with 'R'--
SELECT * FROM EmployeeAttendance
WHERE EmployeeName LIKE 'R%';

-- 13. Employees who worked >6 hours and are Present--
SELECT * FROM EmployeeAttendance
WHERE HoursWorked > 6 AND Status = 'Present';

-- 14. Employees who worked between 6 and 8 hours--
SELECT * FROM EmployeeAttendance
WHERE HoursWorked BETWEEN 6 AND 8;

-- 5. Advanced Queries--
-- 15. Top 2 employees with the most hours worked--
SELECT TOP 2 *
FROM EmployeeAttendance
ORDER BY HoursWorked DESC;

-- 16. Employees who worked less than average hours--
SELECT * FROM EmployeeAttendance
WHERE HoursWorked < (
   SELECT AVG(HoursWorked) FROM EmployeeAttendance
);
```

```
-- 17. Average hours worked by Status--
SELECT Status, AVG(HoursWorked) AS AvgHours
FROM EmployeeAttendance
GROUP BY Status;

-- 18. Find duplicate entries (same employee on same date)--
SELECT EmployeeName, Date, COUNT(*) AS EntryCount
FROM EmployeeAttendance
GROUP BY EmployeeName, Date
HAVING COUNT(*) > 1;
```

--7. Join/Subquery Based--

```
-- 19. Department with the most Present employees--
SELECT TOP 1 Department
FROM EmployeeAttendance
WHERE Status = 'Present'
GROUP BY Department
ORDER BY COUNT(*) DESC;

-- 20. Employee with max hours worked in each department--
SELECT Department, EmployeeName, HoursWorked
FROM EmployeeAttendance ea1
WHERE HoursWorked = (
    SELECT MAX(HoursWorked)
    FROM EmployeeAttendance ea2
    WHERE ea2.Department = ea1.Department
);
```