- **Employees(emp_id, first_name, last_name, dept_id, salary, hire_date, manager_id)**
- **Departments(dept_id, dept_name, location)**
- **Projects(project_id, project_name, start_date, end_date, budget, dept_id)**
- **Timesheet(emp_id, project_id, work_date, hours_worked)**

```
-- Drop existing tables if they exist
DROP TABLE IF EXISTS employees, departments, projects, regions;

--1️⃣ Regions table
CREATE TABLE regions (
    region_id SERIAL PRIMARY KEY,
    region_name VARCHAR(50) NOT NULL
);

--2️⃣ Departments table
CREATE TABLE departments (
    dept_id SERIAL PRIMARY KEY,
    dept_name VARCHAR(50) NOT NULL,
    region_id INT,
    FOREIGN KEY (region_id) REFERENCES regions(region_id)
);

--3️⃣ Employees table
CREATE TABLE employees (
    emp_id SERIAL PRIMARY KEY,
    emp_name VARCHAR(100) NOT NULL,
    full_name VARCHAR(100),
    email VARCHAR(100),
    dept_id INT,
    region_id INT,
    manager_id INT,
    joining_date DATE,
    salary DECIMAL(10,2),
    gender CHAR(1),
    CONSTRAINT fk_dept FOREIGN KEY (dept_id) REFERENCES departments(dept_id),
    CONSTRAINT fk_region FOREIGN KEY (region_id) REFERENCES regions(region_id),
    CONSTRAINT chk_salary CHECK (salary > 0)
);

--4️⃣ Projects table
```

```
CREATE TABLE projects (
    project_id SERIAL PRIMARY KEY,
    project_name VARCHAR(100) NOT NULL,
    dept_id INT,
    start_date DATE,
    end_date DATE,
    budget DECIMAL(12,2),
    FOREIGN KEY (dept_id) REFERENCES departments(dept_id)
);

INSERT INTO regions (region_name)
VALUES ('North'), ('South'), ('East'), ('West');
INSERT INTO departments (dept_name, region_id)
VALUES
('Finance', 1),
('HR', 2),
('IT', 3),
('Sales', 4),
('Operations', 1);
INSERT INTO employees (emp_name, full_name, email, dept_id, region_id, manager_id, joining_date,
salary, gender)
VALUES
('Arjun', 'Arjun Kumar', 'arjun.kumar@company.com', 1, 1, NULL, '2018-03-10', 85000, 'M'),
('Meena', 'Meena Raj', 'meena.raj@company.com', 2, 2, NULL, '2019-07-01', 60000, 'F'),
('Ravi', 'Ravi Sharma', 'ravi.sharma@company.com', 3, 3, 1, '2020-01-15', 75000, 'M'),
('Sneha', 'Sneha Iyer', 'sneha.iyer@company.com', 4, 4, 2, '2021-05-10', 55000, 'F'),
('Vijay', 'Vijay Patel', 'vijay.patel@company.com', 3, 3, 1, '2020-11-12', 72000, 'M'),
('Priya', 'Priya Das', 'priya.das@company.com', 2, 2, 2, '2018-08-18', 58000, 'F'),
('Karan', 'Karan Singh', 'karan.singh@company.com', 1, 1, 1, '2017-02-14', 90000, 'M'),
('Divya', 'Divya Nair', 'divya.nair@company.com', 4, 4, 2, '2022-01-01', 50000, 'F'),
('Neha', 'Neha Joshi', 'neha.joshi@company.com', 5, 1, 1, '2020-06-15', 65000, 'F'),
('Rahul', 'Rahul Verma', 'rahul.verma@company.com', 3, 3, 1, '2019-12-20', 80000, 'M'),
('Alok', 'Alok Sinha', 'alok.sinha@company.com', 4, 4, 2, '2021-04-01', 57000, 'M'),
('Asha', 'Asha Bhat', 'asha.bhat@company.com', 2, 2, 2, '2019-09-09', 62000, 'F');
INSERT INTO projects (project_name, dept_id, start_date, end_date, budget)
VALUES
('ERP Implementation', 3, '2020-02-01', '2021-03-31', 1500000),
('Recruitment Portal', 2, '2021-06-01', '2021-12-31', 400000),
('Sales CRM Upgrade', 4, '2022-01-10', '2022-09-15', 600000),
('Payroll Automation', 1, '2019-05-01', '2020-05-01', 300000),
('Logistics Tracker', 5, '2020-08-01', '2021-02-01', 500000);
```

1️⃣ Find the 2nd highest salary in the company.

2️⃣ **Get the average salary per department.**

3️⃣ **List employees who earn more than their department's average salary.**

4️⃣ **Show department-wise employee count using CTE.**

5️⃣ **Display top 3 earners in each department (use window functions).**

6️⃣ **Find employees hired in the last 90 days.**

7️⃣ **Calculate total salary and average salary for all employees using aggregates.**

8️⃣ **Display department with the highest average salary.**

9️⃣ **Find employees who have not been assigned any project.**

🔟 **Show the total hours worked by each employee on each project.**

1️⃣1️⃣ **Get employees whose names start and end with the same letter.**

1️⃣2️⃣ **Find the longest-tenured employee (earliest hire_date).**

1️⃣3️⃣ **Show total employees joined per year.**

1️⃣4️⃣ **Show average project duration per department.**

1️⃣5️⃣ **Find employees with salaries between the 25th and 75th percentile.**

1️⃣6️⃣ **List employees with duplicate salaries.**

1️⃣7️⃣ **Show departments having more than 5 employees.**

---

18 Get each employee’s manager name (self join).

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19 Find the department with maximum total project budget.

---

20 Show the last 3 employees hired.

---

21 Find all employees working on more than 2 projects.

---

22 Show employees who worked most hours overall.

---

23 List employees hired after their manager’s hire date.

---

24 Count employees with NULL manager_id.

---

25 Calculate running total of salaries department-wise.