Problem Statement for Case Study: Employee & Project Management Analysis

Company: Tech Solutions Inc.

Overview:

Tech Solutions Inc. is a growing mid-sized company that has departments like HR, Finance, IT, Marketing, and Sales. Each department is managed by a department head (manager), and employees work on various projects throughout the year. With an increasing number of employees and projects, management needs better insights into their workforce to make data-driven decisions on salary distributions, employee performance, and project timelines.

The company has requested a comprehensive analysis of its employees, managers, and projects to understand the following:

1. **Employee Performance**: Which employees are performing well based on the number of projects they are handling?
2. **Project Completion**: Are projects being completed on time, and how are they distributed across departments?
3. **Departmental Insights**: What are the salary trends across departments, and which departments are growing in terms of employee hiring?
4. **Manager Oversight**: How well are department managers performing in terms of managing employees and projects?

Management wants to use this data to:

- Identify which departments and employees are most efficient.
- Plan future employee compensation strategies.
- Improve project allocation and ensure timely project completion.

Problem Statement:

The management of **Tech Solutions Inc.** seeks to improve their understanding of the company's workforce, employee performance, and project management. The company needs insights from its employee, department, manager, and project datasets to address the following business challenges:

Key Questions to Address:

1. **Employee & Department Insights**
   - How are employees distributed across departments?
   - What is the salary structure within each department? Which department has the highest and lowest average salary?
   - Who are the highest-paid employees, and which departments do they belong to?
2. **Project Assignment & Completion**
   - What is the project assignment distribution? How many projects are employees working on?
   - Which employees have been involved in multiple projects (more than two)?
   - How many projects have been completed in the last 6 months?
3. **Manager & Employee Oversight**

- Which managers are managing the most employees, and how are these employees distributed across projects?
- How many projects are being managed by each department head? Which manager oversees the highest number of projects?

4. **Salary & Tenure Trends**
   - What is the trend in hiring employees over the last few years (since 2018)? How does employee hiring vary by department?
   - What is the average salary of employees hired after 2020 compared to those hired earlier?

Expected Outcomes:

- **Salary Analysis**: Identify salary discrepancies and areas for compensation improvement by department.
- **Project Efficiency**: Highlight which employees and departments are efficiently handling projects, ensuring resources are allocated properly.
- **Manager Performance**: Assess which department heads are managing their teams and projects most effectively.
- **Workforce Growth**: Provide insights into hiring trends and help plan recruitment strategies by identifying growing or underperforming departments.

By addressing these key questions and challenges, the company aims to enhance its workforce management, streamline project completion, and align salary structures with employee performance.

Deliverables:

- **SQL Queries** to extract data answering each of the key questions.
- **Reports** summarizing the insights and trends found through the analysis.
- **Visual Representation** (optional) through dashboards highlighting key metrics such as average salaries, project completion rates, and employee distributions.