Employee Data Analysis using Excel

STUDENT NAME: BHAVADHARINI R
REGISTER NO   : 2213391042010 , 0E95CE664A610CCB8DA46022B0637
DEPARTMENT   : BACHELOR OF COMMERCE (CORPORATE SECRETARYSHIP)
COLLEGE   : QUEEN MARY'S COLLEGE (AUTONOMOUS)

PROJECT TITLE

HR DATA FOR ANALYTICS

AGENDA

1. Problem Statement
2. Project Overview
3. End Users
4. Our Solution and Proposition
5. Dataset Description
6. Modelling Approach
7. Results and Discussion
8. Conclusion

PROBLEM STATEMENT

Distribution Analysis:

•**Project Distribution**: What is the distribution of the number of projects among employees? Are there any noticeable patterns or clusters?

•**Time in Company**: How is the time spent in the company distributed among employees? Are there any trends or common tenure durations?

Correlation Analysis:

•Investigate if there are any correlations between the number of projects, time spent in the company, work accidents, and promotions. For example, does spending more time in the company correlate with more projects or higher chances of promotion?

Outliers and Anomalies:

•Identify any outliers or anomalies in the data. For instance, are there any employees with an unusually high or low number of projects or who have experienced more work accidents compared to others?

Visualizations:

•**Bar Graphs**

•Histograms

•**Scatter Plots**

Expected Insights:

The analysis should provide insights into:

•How employees are distributed across different ranges of projects and time spent in the company.

•The rarity or frequency of work accidents and promotions.

PROJECT OVERVIEW

Distribution Analysis:

•**Project Distribution**: Analyze how the total number of projects is distributed among employees.

•**Time in Company**: Examine the distribution of tenure across employees.

•**Work Accidents**: Evaluate the frequency and distribution of work accidents.

•**Promotions**: Assess how promotions are distributed among employees.

Correlation Analysis:

•Determine if there are correlations between:

- Number of projects and time spent in the company.
- Number of projects and work accidents.
- Time spent in the company and promotions.
- Work accidents and promotions.

WHO ARE THE END USERS?

The end users for the employee data analysis (pivot table and graphs) include:

1.**HR Department**: For managing employee development, promotions, and resource allocation.

2.**Operations Managers**: For optimizing project assignments and managing workloads.

3.**Top Management**: For strategic decision-making regarding workforce planning and organizational performance.

4.**Employee Relations Specialists**: For improving workplace safety and addressing employee concerns.

5.**Business Analysts**: For providing actionable insights and recommendations.

6.**Financial Analysts**: For aligning human resource costs with financial planning.

7.**IT/Data Analysts**: For ensuring data accuracy and supporting data-driven decision-making.

These users leverage the analysis to enhance various aspects of workforce management and organizational efficiency.

OUR SOLUTION AND ITS VALUE PROPOSITION

Solution:

Data Analysis and Visualization Platform

•**Description**: A comprehensive platform that leverages pivot tables and graphs to analyze and visualize employee data, including project assignments, tenure, work accidents, and promotions

Value Proposition:

Enhanced Decision-Making:

1. **HR Department**: Informed decisions on promotions, training, and recruitment strategies.
2. **Operations Managers**: Better project distribution and workload management.

Dataset Description

Dataset Name: Employee Project and Performance Data

Description: This dataset provides information on employee metrics related to projects, tenure, work accidents, and promotions.

Columns:

1.**Emp ID**: Unique identifier for each employee.

2.**SUM of number_project**: Total number of projects assigned to each employee.

3.**SUM of time_spend_company**: Total time (in years) each employee has spent with the company.

4.**SUM of Work_accident**: Total number of work accidents reported by each employee.

5.**SUM of promotion_last_5years**: Number of promotions each employee received in the last five years.

Summary Statistics:

•**Total Projects**: 67

•**Total Time in Company**: 74 years

•**Total Work Accidents**: 1

•**Total Promotions**: 1

THE "WOW" IN OUR SOLUTION

Comprehensive Visualization Suite:

•**Interactive Dashboards**: Dynamic and interactive dashboards that let users drill down into specific data points, visualize trends, and explore relationships in real-time.

. **Predictive Analytics:**

•**Forecasting Capabilities**: Predict future trends such as employee promotions and project allocations, enabling proactive HR and operational strategies

. **Tailored Insights:**

•**Customizable Reports**: Generate detailed, role-specific reports that highlight key metrics and insights relevant to different stakeholders, such as HR, management, and finance.

MODELLING

Modeling:

•**Predictive Modeling**: If applicable, use regression models to predict metrics such as promotions based on other variables (e.g., number of projects, tenure).

•**Clustering**: Segment employees into clusters based on their characteristics (e.g., project count, tenure) to identify patterns.

Outcome:

•**Insights**: Understand distribution patterns, key correlations, and potential areas for HR interventions.

•This modeling approach helps in deriving actionable insights from the employee data, supporting informed decision-making and strategic planning.

RESULTS

Emp ID	SUM of number_project	SUM of time_spend_company	SUM of Work_accident	SUM of promotion_last_5years
1	2	3	0	0
2	5	6	0	0
3	7	4	0	0
4	5	5	0	0
5	2	3	0	0
6	2	3	0	0
7	6	4	0	0
8	5	5	0	0
9	5	5	0	0
10	2	3	0	0
11	2	3	0	0
12	6	4	0	0
13	4	5	0	0
14	2	3	0	0
15	2	3	0	0
16	2	3	0	0
17	2	3	0	0
18	4	6	0	0
19	2	3	1	1

SUM of number_project, SUM of time_spend_company, SUM of Work_accident and SUM of promotion_last_5years
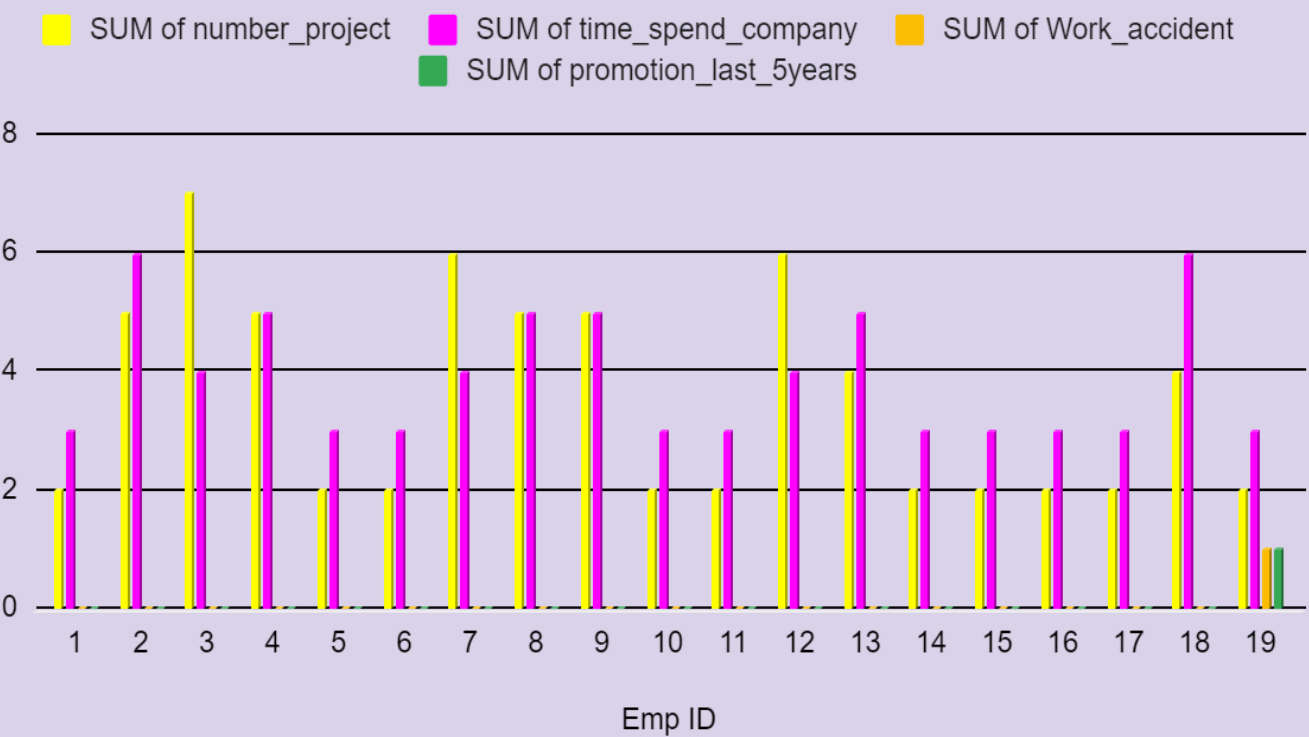
conclusion

The pivot table and graphs offer a powerful solution for analyzing employee metrics, providing:

• **Comprehensive Insights**: Clear visualization of employee distribution across projects, tenure, work accidents, and promotions.

• **Strategic Value**: Data-driven insights that support informed decisions on project allocation, career development, and safety improvements.

• **Advanced Features**: Interactive dashboards, predictive analytics, and real-time anomaly detection enhance decision-making and operational efficiency.

• This solution empowers HR and management to make strategic, data-informed decisions that optimize workforce management and drive organizational success.