

## **Project Synopsis: Employee Performance and Retention Analysis**

### **1. Title**

Employee Performance and Retention Analysis

### **2. Introduction**

Employee retention is crucial for organizations to maintain productivity, reduce costs, and retain expertise. High attrition rates disrupt workflows and increase recruitment expenses. This project uses the IBM HR Analytics dataset to analyze key drivers of attrition, such as work-life balance, satisfaction, compensation, and tenure, and to develop actionable retention strategies.

### **3. Objectives**

1. Analyze attrition patterns across departments, roles, and demographics.
2. Assess the impact of job satisfaction, work-life balance, and compensation on retention.
3. Examine tenure and promotion trends to identify links with attrition.
4. Provide actionable insights to improve retention and workforce satisfaction.

### **4. Scope of Work**

#### **1. Data Analysis:**

- Explore attrition patterns based on demographics, job roles, and departments.
- Assess the correlation between satisfaction metrics, compensation, and retention.

#### **2. Visualization:**

- Create charts and graphs to illustrate findings in attrition, compensation, and satisfaction levels.

#### **3. Recommendations:**

- Offer data-driven strategies to address key retention challenges.

### **5. Methodology**

#### **1. Data Preprocessing:**

- Handle missing and inconsistent data to ensure accuracy.

#### **2. Exploratory Data Analysis (EDA):**

- Use SQL and Python to analyze patterns in attrition, satisfaction, compensation, and tenure.

### **3. Visualization:**

- Present findings using visual tools like bar charts, heatmaps, and pie charts.

### **6. Tools and Technologies**

- SQL, Python (Pandas, Matplotlib, Seaborn), Jupyter Notebook.
- Dataset: IBM HR Analytics

### **7. Expected Outcomes**

1. Identify high-risk groups for attrition (e.g., younger employees, single employees).
2. Provide insights into department-specific attrition trends.
3. Develop recommendations to enhance work-life balance, adjust compensation, and strengthen manager-employee relationships.

### **8. Conclusion**

This project delivers actionable insights to improve employee satisfaction and retention, offering a foundation for developing predictive retention models and informed decision-making processes. It ensures a data-driven approach to reducing turnover and enhancing organizational stability.