HR Analytics Dashboard – Project Report

Abstract

This project focuses on building an interactive HR analytics dashboard to explore employee attrition trends. Using HR data, key factors like salary, age, department, education field, and job satisfaction were analyzed to help organizations understand and manage workforce turnover effectively.

Introduction

Employee attrition is a common challenge that affects productivity and increases hiring costs. Through HR analytics, businesses can identify underlying causes of turnover and implement data-driven strategies to improve employee retention. This project aims to visualize such insights using Power BI.

Tools Used

- **Python**: Used for data preprocessing and visualization.
    - Libraries: Pandas, Seaborn, Matplotlib
- **Excel**: Main source of HR data and used for new column creation.
- **Power BI Desktop**: To design and develop an interactive dashboard for HR analysis.

Steps Involved

1. **Data Collection & Cleaning**:
    - Imported HR dataset with employee information like age, salary, job role, satisfaction, education, etc.
    - Explored attrition trends across departments, salary bands, and promotions
    - Used seaborn plots for visual insights:
      1. Stacked bar charts for department-wise attrition
2. **Column Creation (Excel)**:
    - Added **Age Group** column
    - Added **Salary Slab** column
    - These helped simplify data segmentation in the dashboard.

3. **Exploratory Data Analysis**:
    - Investigated attrition by age, salary, education, job satisfaction, and departments.
    - Used statistical summaries and bar charts to explore patterns.
4. **Dashboard Design in Power BI**:
    - Created visuals:
        - Attrition by Age Group, Salary Slab, Department, Education.
        - Job Satisfaction by Role.
        - Gender split, Average Salary, Average Age.
    - Added slicers for dynamic filtering.
5. **Key Insights**:
    - Highest attrition in employees aged **26–35** and those earning **up to 5K**.
    - Departments like **Sales** and roles like **Sales Executive** had higher turnover.
    - Job satisfaction was most commonly rated **3** and **4**.

Conclusion

The HR Analytics dashboard reveals key attrition patterns, allowing HR teams to proactively address high-risk groups. By adding custom columns like **Age Group** and **Salary Slab**, the analysis becomes more meaningful and visual insights more actionable. This project highlights the power of combining Excel, Python, and Power BI to drive smart HR decisions.