HR Analytics – Predicting Employee Attrition

DATA ANALYTICS INTERNSHIP PROJECT SUBMISSION

Introduction:

Employee attrition is a critical challenge in human resource management. Understanding the reasons behind employee exits helps organizations improve retention strategies. This project focuses on using HR data analytics to identify key drivers of attrition and build predictive models.

Abstract:

The goal of this project is to explore employee data, analyze attrition patterns, and build a classification model to predict whether an employee is likely to leave. By integrating machine learning and Power BI visualizations, the project offers actionable insights for HR departments to reduce attrition rates.

Tools Used:

- ✓Python (Pandas, Seaborn, Scikit-learn, SHAP)
- ✓Power BI
- ✓Jupyter Notebook
- ✓Dataset: WA_Fn-UseC_-HR-Employee-Attrition.csv

Steps Involved in Building the Project:

- Data Cleaning and Preparation
- Exploratory Data Analysis (EDA)
- Model Building (Logistic Regression / Decision Tree)
- SHAP Value Analysis for Interpretability
- Power BI Dashboard Development
- Insight Generation and Recommendations

Conclusion:

The project successfully identifies key factors responsible for attrition, such as overtime, lack of promotions, and job dissatisfaction. The developed model can serve as a valuable tool for HR departments to predict and address employee turnover proactively.