HR Analytics Project – Employee Attrition

Introduction:
Employee attrition is a major concern for organizations, affecting productivity and costs.
This project focuses on analyzing HR data to identify key factors causing attrition and predict future resigna

Abstract:
The project leverages historical HR data to explore trends in employee attrition across departments,
salary bands, promotions, and tenure. Predictive models like Decision Trees are used to forecast future att
while Power BI dashboards visualize patterns to aid management in retention strategies.

Tools Used:
- Python (Pandas, Seaborn, Scikit-learn) for data analysis and modeling
- Power BI for interactive dashboard visualization
- ReportLab for PDF report generation

Steps Involved in Building the Project:
1. Data Collection: Gather HR datasets containing employee demographics, job details, performance, and
2. Exploratory Data Analysis (EDA): Identify patterns by department, salary band, promotions, tenure, and
3. Data Preprocessing: Handle missing values, encode categorical variables, and prepare features for mod
4. Model Building: Train classification models (Decision Tree / Logistic Regression) to predict employee att
5. Model Evaluation: Compute accuracy and confusion matrix to assess model performance.
6. Dashboard Creation: Visualize attrition trends and key factors using Power BI.
7. Insights & Recommendations: Analyze model and dashboard findings to suggest attrition prevention stra

Conclusion:
This project demonstrates how HR analytics can proactively identify attrition risks and provide actionable in
The combination of predictive modeling and visual dashboards enables organizations to improve retention
enhance employee satisfaction, and reduce turnover costs.