ELEVATE LABS PROJECT

HR ANALYTICS - PREDICT EMPLOYEE ATTRITION

Model accuracy report and confusion matrix

Confusion Matrix:

[[236 19]
 [33 6]]

Classification Report:

Class	Precision	Recall	F1-Score	Support
0 (Stay)	0.88	0.93	0.90	255
1 (Left)	0.24	0.15	0.19	39
Accuracy			0.82	294
Macro Avg	0.56	0.54	0.54	294
Weighted Avg	0.79	0.82	0.81	294

Interpretation:

The current model has an overall accuracy of 82%, which appears good at first glance.
However, the performance for predicting attrition (class 1) is weak:
- Precision: 0.24
- Recall: 0.15
- F1-score: 0.19

This suggests the model is poor at identifying employees who are likely to leave.
This is likely due to a class imbalance in the dataset (far more employees stayed than left).

Model Accuracy Report:

Metric	Value
Accuracy	82%
Precision (Stay)	88%
Recall (Stay)	93%
F1-Score (Stay)	90%
Precision (Left)	24%
Recall (Left)	15%
F1-Score (Left)	19%
Macro Avg F1	54%
Weighted Avg F1	81%

Power BI Dashboard Breakdown

Overview Page:
Total number of employees vs. number of attritions
Overall attrition rate (%)
Key KPIs: Average Tenure, Average Salary, Promotion Rate

Department-wise Analysis:
Bar chart of attrition count by department
Attrition percentage by department
Filter to compare departments dynamically

Salary Band Segmentation:
Salary bands (Low, Mid, High, Very High)
Attrition rate within each band
Correlation between income level and likelihood to resign

Promotion Impact:
Years since last promotion vs. attrition rate
Identification of groups with low promotion frequency and high attrition

Demographic Filters:
Filters for age group, gender, education level, job role, marital status
Interactive slicers to customize views by selected segments

Model Prediction Summary:
Visual representation of predicted attrition risk
Breakdown of True Positives, False Positives, etc.