Model Accuracy Report + Confusion Matrix

Model Used

- Logistic Regression (best performing)

Model Performance

- **Accuracy: 87.76%**
- **Confusion Matrix**
- **Library:** `sklearn.linear_model.LogisticRegression`
- **Training/Test Split:** Standard (80/20)

Confusion Matrix

	Predicted No	Predicted Yes
Actual No	**233**	**7**
Actual Yes	**29**	**25**

- **True Positives (TP): 25 – Resigned and correctly predicted**
- **True Negatives (TN): 233 – Stayed and correctly predicted**
- **False Positives (FP): 7 – Predicted resignation but stayed**
- **False Negatives (FN): 29 – Predicted stay but resigned**

Interpretation

- **The model performs well in identifying both retained and at-risk employees.**
- **False positives are low, meaning few unnecessary retention efforts.**
- **While there are some false negatives, the model overall balances accuracy and generalization well.**
- **This makes Logistic Regression suitable for HR use cases where understanding and managing risk of attrition is critical.**
