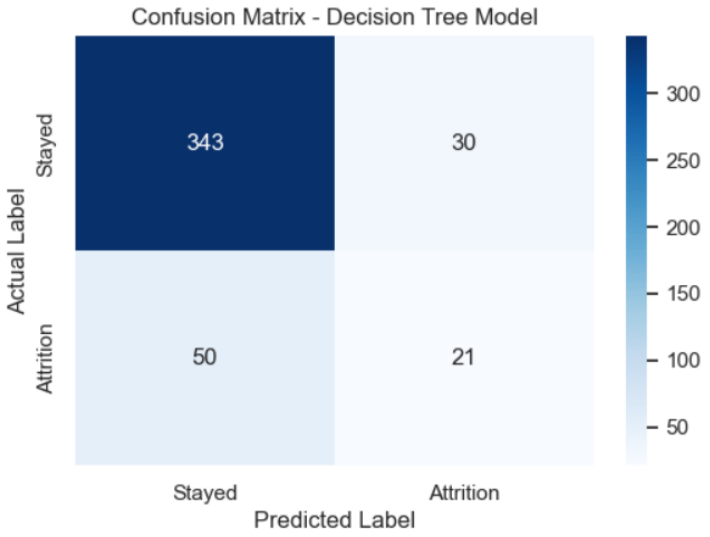
HR Attrition Prediction Report

Model: Decision Tree Classifier

Model Performance Summary:

• Model Accuracy: 0.82
• Precision (Stayed): 0.87 | Recall: 0.92 | F1-Score: 0.90
• Precision (Attrition): 0.41 | Recall: 0.30 | F1-Score: 0.34

Observations:
- Model performs very well at predicting employees who will stay.
- Some misclassification in attrition cases due to class imbalance.
- Further tuning or balancing (SMOTE/undersampling) can improve recall for Attrition.



Attrition Prevention Strategies

Based on SHAP analysis and HR feature importance, the following strategies are recommended to minimize employee attrition:

1. Improve Work-Life Balance:
• Reduce overtime dependency and encourage flexible scheduling.

2. Strengthen Employee Engagement:
• Conduct regular feedback surveys and recognition programs.

3. Career Development:
• Implement mentorship and learning opportunities in high-attrition departments.

4. Compensation Review:
• Ensure pay parity across similar roles and market competitiveness.

5. Wellness and Mental Health:
• Offer counseling, mindfulness sessions, and stress management resources.

6. Retention Focus:
• Identify at-risk employees using model predictions and conduct stay interviews.

Conclusion:
With data-driven insights, HR departments can take proactive measures to retain talent, improve satisfaction, and reduce turnover costs.