Employee Attrition Analysis – Green Destinations

1. Introduction
Employee attrition refers to the situation where employees leave an organization. Green Destinations, a travel agency, has observed an increasing attrition rate and wants to analyze the causes and predict future attrition using Machine Learning.

2. Problem Statement
The HR department wants to understand the factors influencing employee attrition and build a predictive model to identify employees who are likely to leave the organization.

3. Objectives
• Calculate employee attrition rate
• Identify key factors affecting attrition
• Visualize patterns in employee data
• Build a machine learning model to predict attrition

4. Dataset Description
The dataset contains employee-related attributes such as Age, Monthly Income, Years at Company, Job Role, Gender, and Attrition status.

5. Methodology
• Data preprocessing and encoding
• Exploratory Data Analysis using visualizations
• Train-test split of data
• Model training using Random Forest Classifier
• Model evaluation using accuracy and confusion matrix

6. Visualization
A box plot between Monthly Income and Attrition shows that employees with lower income are more likely to leave the organization.

7. Results
The Random Forest model provided good accuracy and identified Monthly Income, Age, and Years at Company as important features.

8. Conclusion
The project successfully analyzed employee attrition and demonstrated how machine learning can help organizations reduce employee turnover by taking proactive measures.