# ****Airline Passenger Satisfaction Analysis****

## ****Overview****

This project analyzes airline passenger satisfaction using **machine learning techniques**. It examines key factors influencing customer satisfaction and predicts whether a passenger is satisfied or dissatisfied based on various service parameters.

## ****Project Structure****

* airline-passenger-satisfaction.ipynb – Jupyter Notebook containing data analysis, feature engineering, model training, and evaluation.
* data– train.csv,test.csv dataset

## ****Dataset****

The dataset includes passenger details and their ratings for various aspects of airline service. Features may include:

* Flight distance, class, and travel type
* Inflight entertainment, seat comfort, food & drink quality
* Departure and arrival delays
* Customer satisfaction labels (satisfied/neutral or dissatisfied)

## ****Objectives****

* **Exploratory Data Analysis (EDA)** – Understand key factors influencing satisfaction.
* **Feature Engineering** – Identify important predictors.
* **Model Building** – Train machine learning models to predict satisfaction.
* **Evaluation & Insights** – Analyze model performance and interpret findings.

## ****Technologies Used****

* **Python** (Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn)
* **Jupyter Notebook** for analysis and visualization
* **Machine Learning Models** (Logistic Regression, Random Forest, XGBoost, etc.)

## ****How to Run the Project****

1. Install dependencies:

pip install pandas numpy seaborn scikit-learn matplotlib

1. Open the Jupyter Notebook:

jupyter notebook airline-passenger-satisfaction.ipynb

3.Run all cells to perform analysis and predictions.

## ****Results & Insights****

* Identifies key factors contributing to passenger satisfaction.
* Compares different machine learning models for predictive accuracy.
* Provides actionable insights for airlines to improve service quality.

## ****Future Improvements****

* Expand dataset with real-time feedback.
* Implement deep learning for better predictions.
* Develop a dashboard for interactive insights.