



An Unraveling of the Mystery of  
Flight Prices

# FARE PLAY

## PRESENTATION

*By: Captain Anthony Amadasun,  
First Officer Landry Houston, and  
Lead Flight Attendant Mark  
Dunlea Tate*

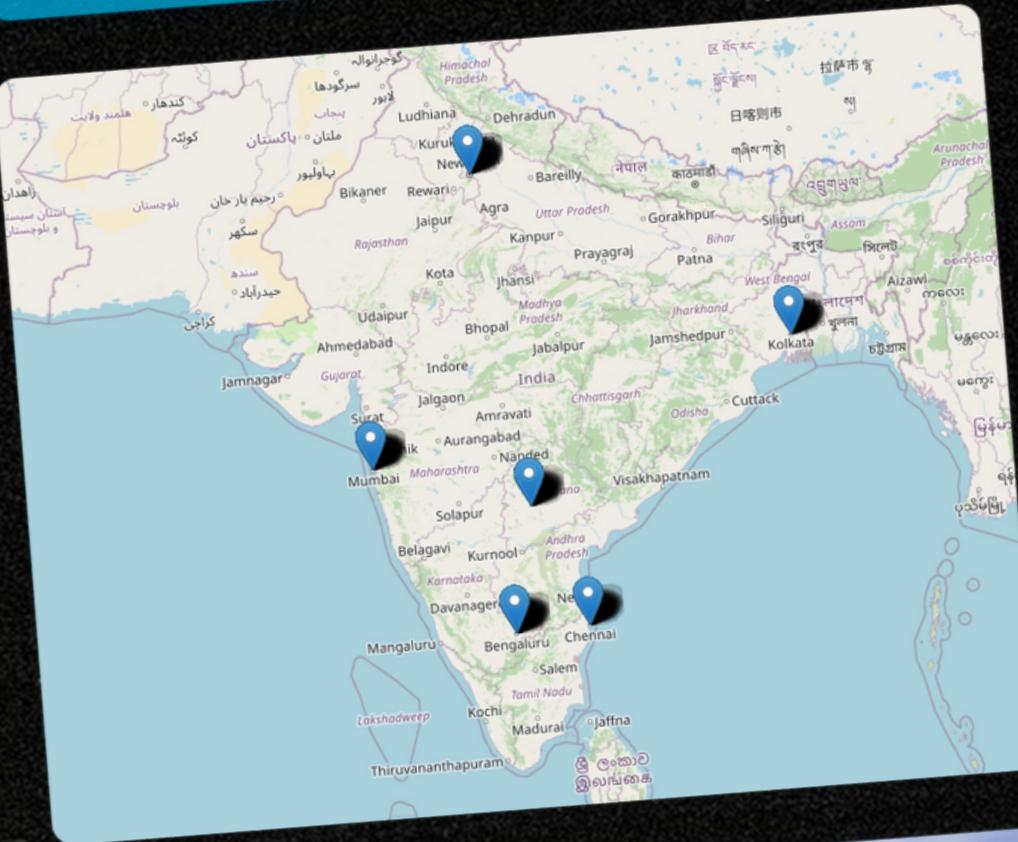


# OBJECTIVE

With the resurgence of travel following the COVID-19 pandemic, our objective is to develop an advanced predictive model tailored for travel agencies. The model aims to assist travel agencies in providing their customers with personalized recommendations for securing the most cost-effective flight options from a specific airport.

0917

CANVA STORIES



CANVA STORIES



0917

# HYPOTHESIS



Null

The mean Root Mean Squared Error (RMSE) of our flight price and travel assistant model is greater than or equal to \$50 of the actual prices, indicating that our model does not effectively predict prices within the acceptable range.



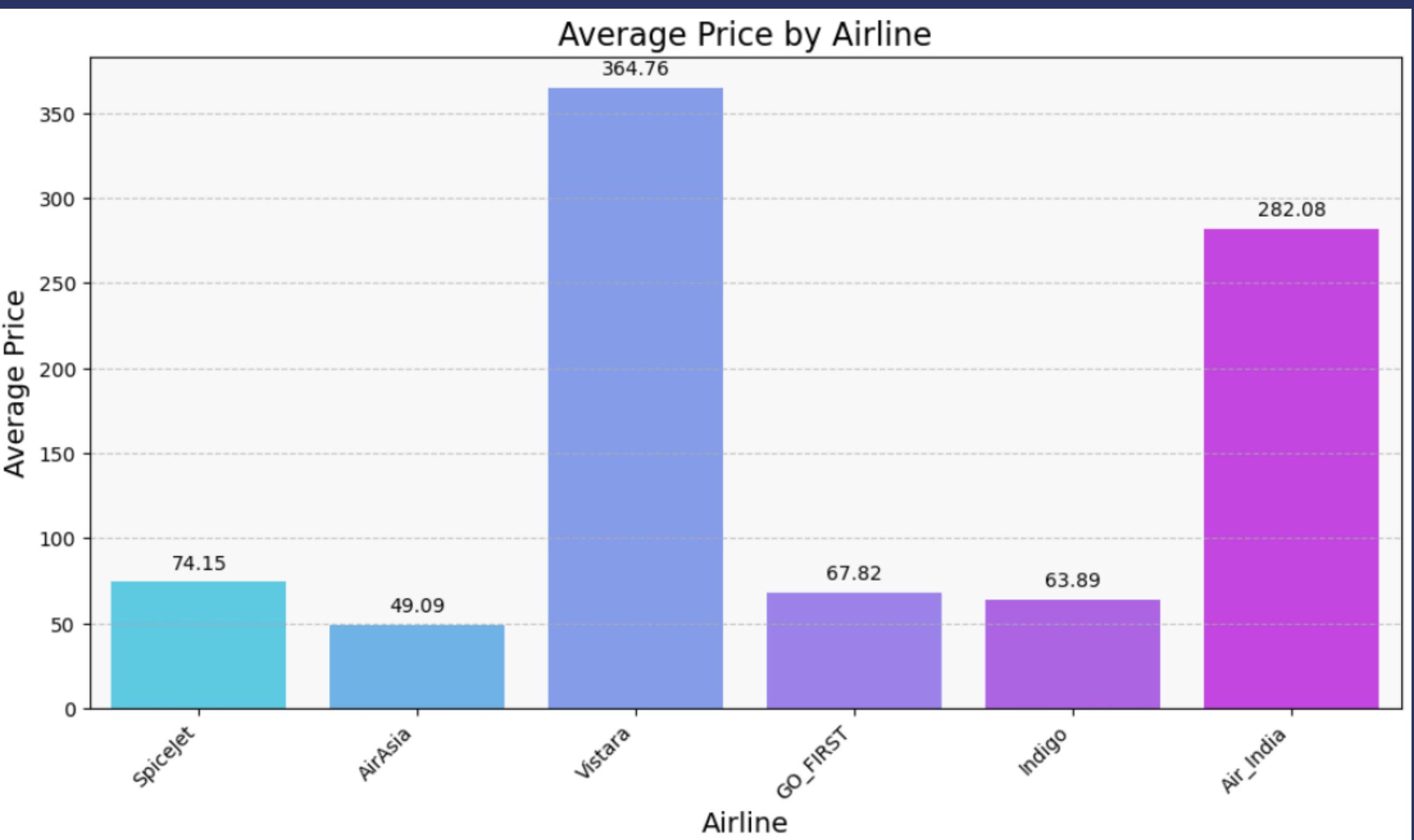
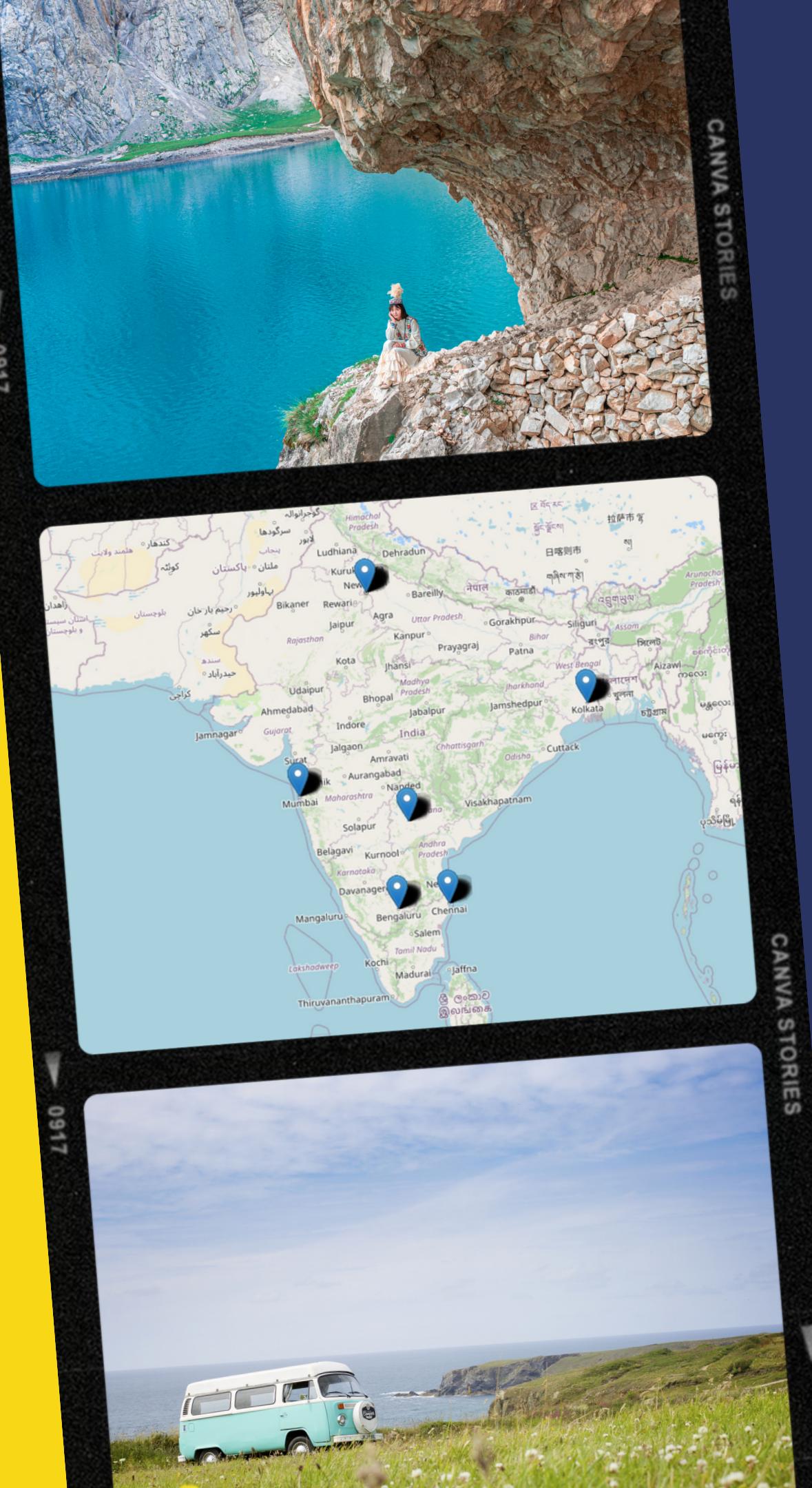
Alternative

The mean RMSE of our flight price and travel assistant model is less than 50\$ of the actual prices, suggesting that our model successfully predicts prices within the acceptable range.

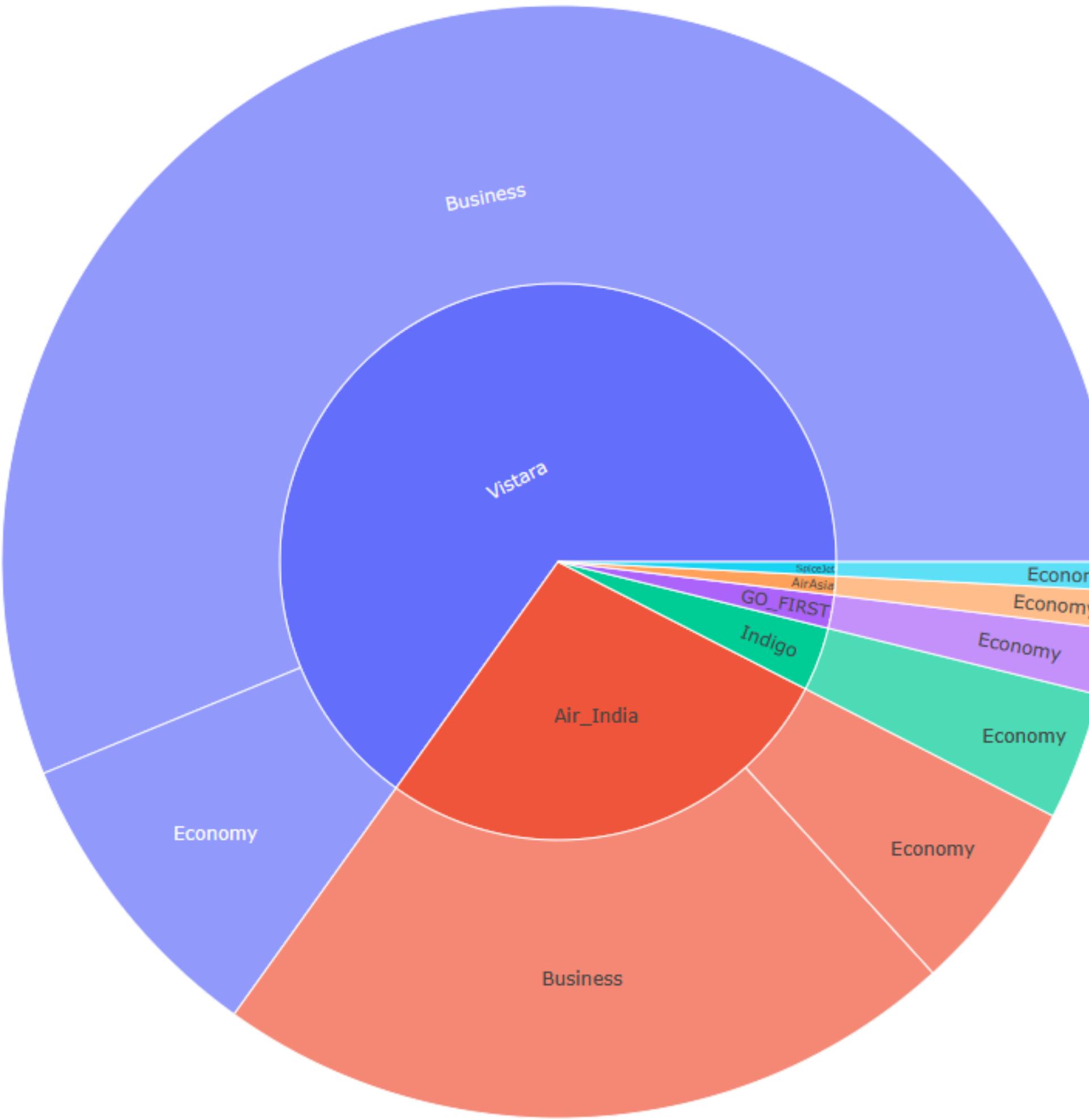
# METHODOLOGY

- Converted Rupees to USD
- Duration into minutes
- Number of stops column changed to numeric
- Binarize the 'class' column for better modeling.
- Column labels cleaned up

# AN EXPLORATION OF FLIGHT



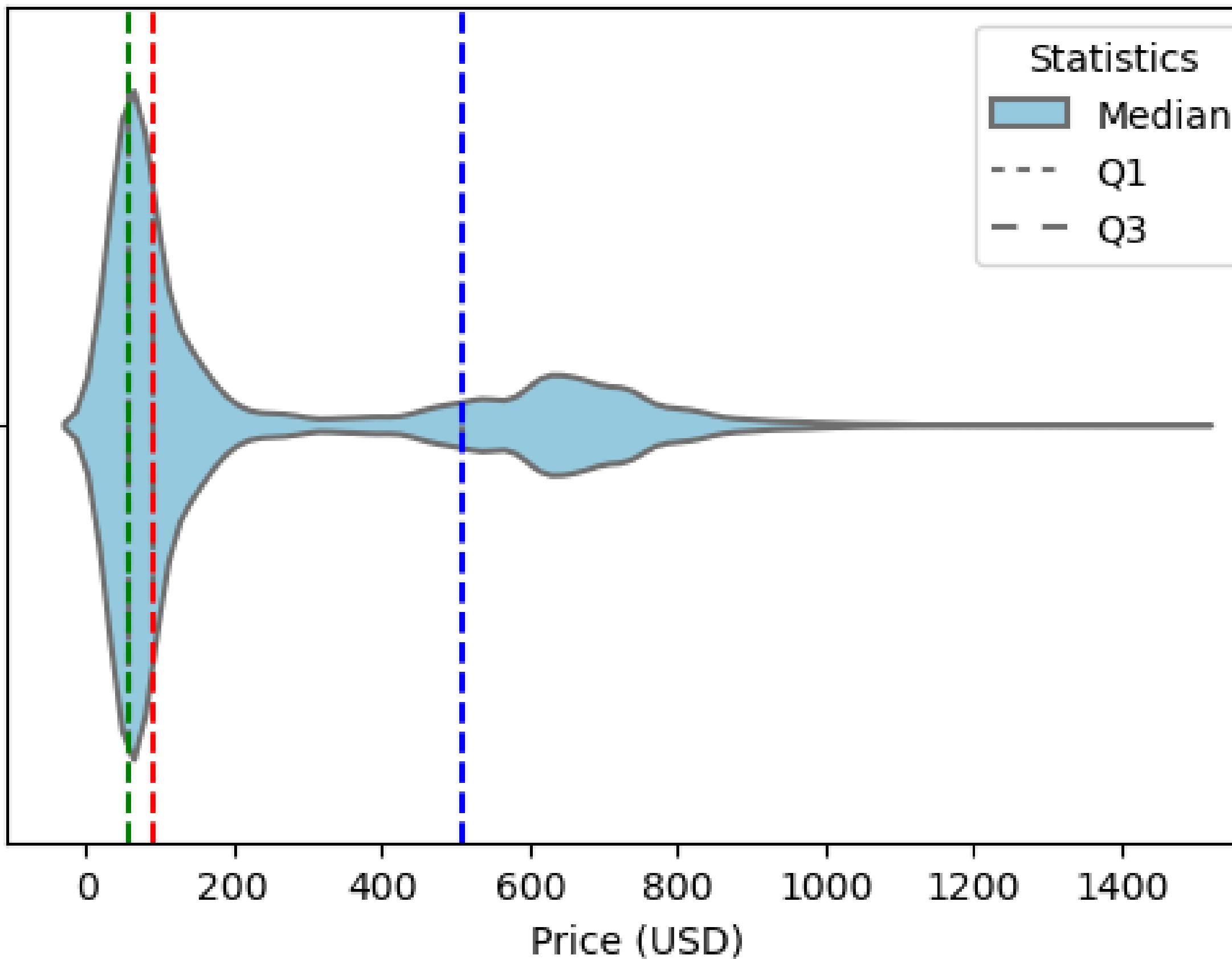
## Class Analysis



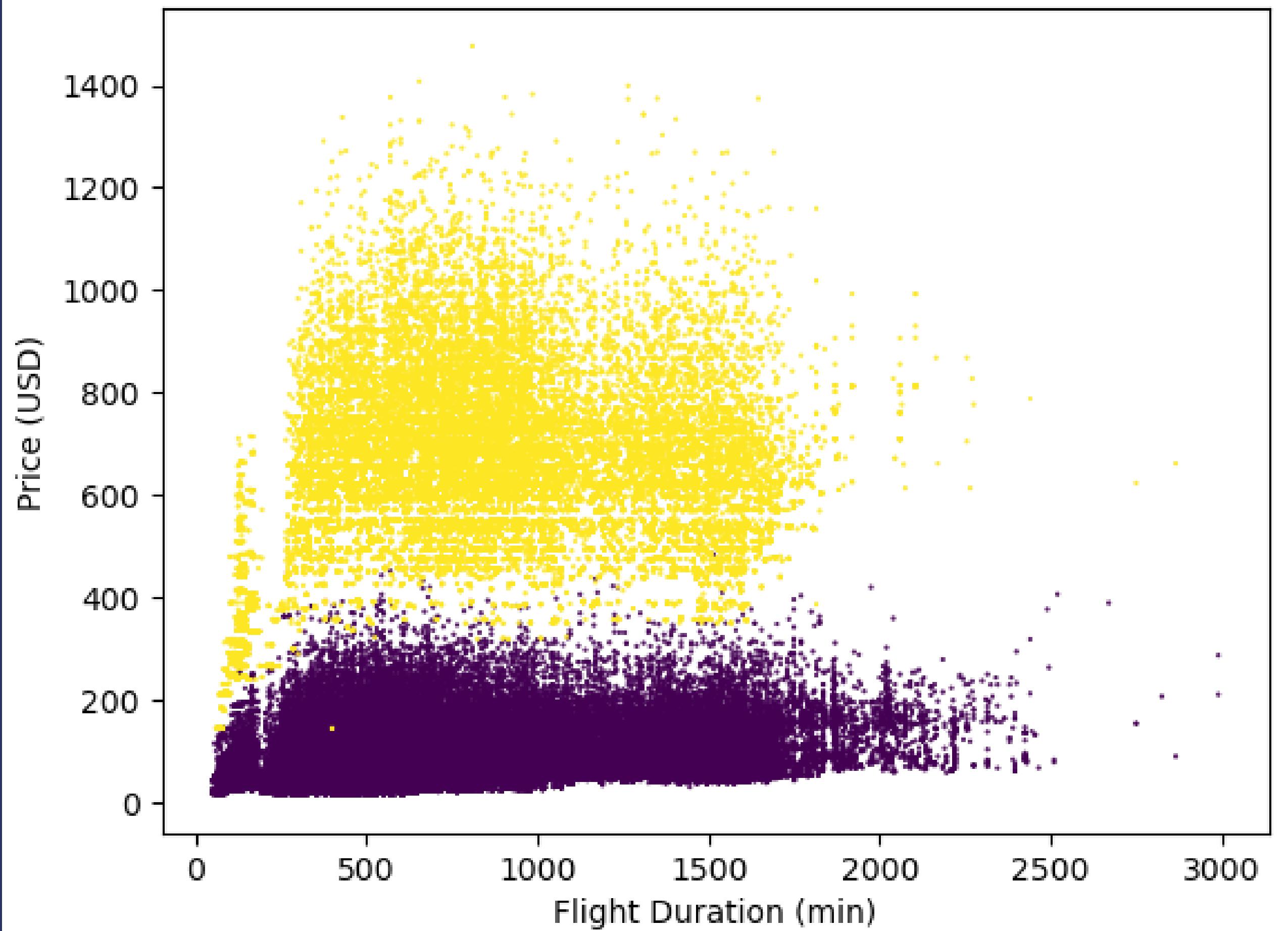
# Price Distribution Violin Plot

Statistics

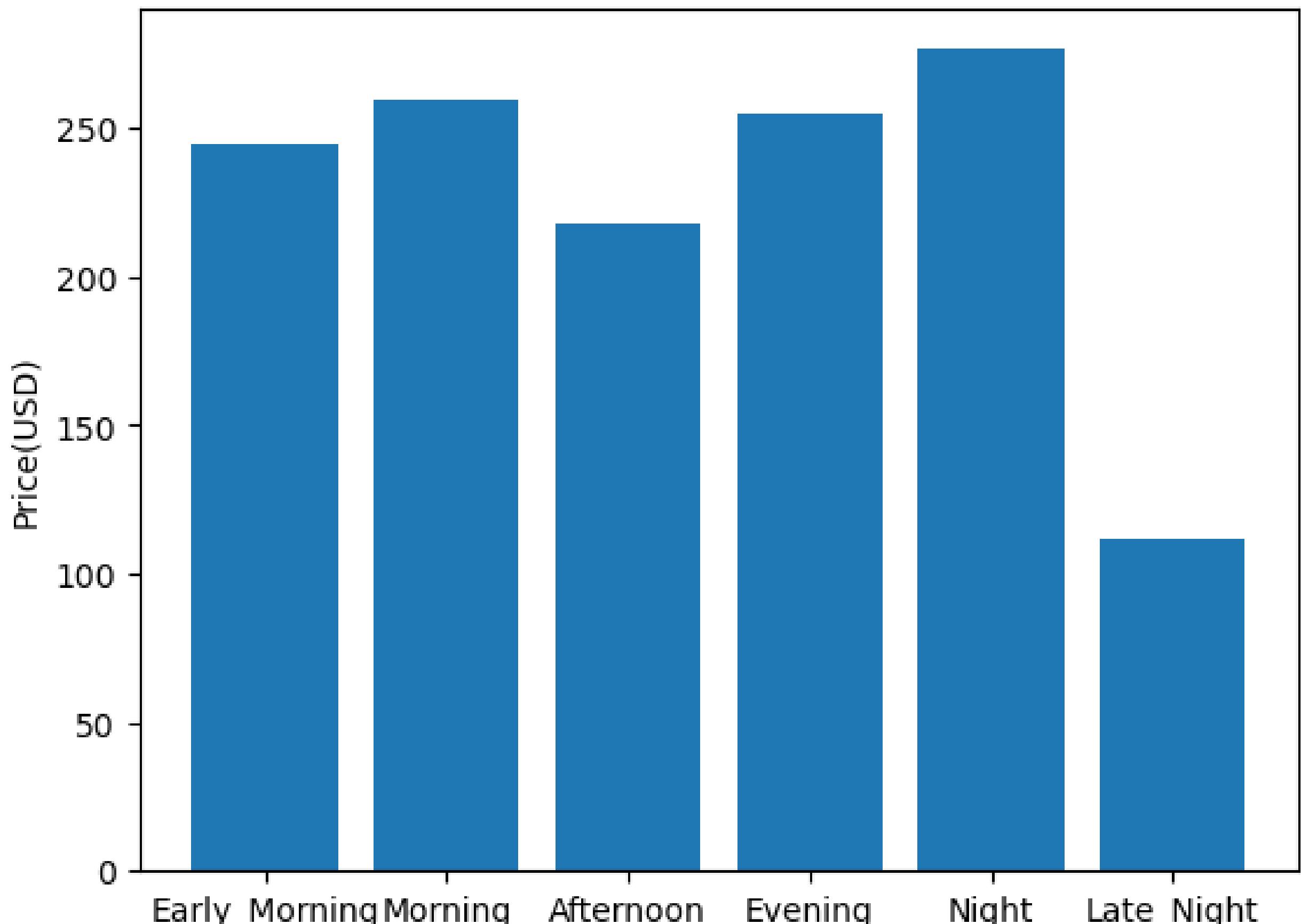
- Median
- Q1
- Q3



### Duration vs Price split by Class



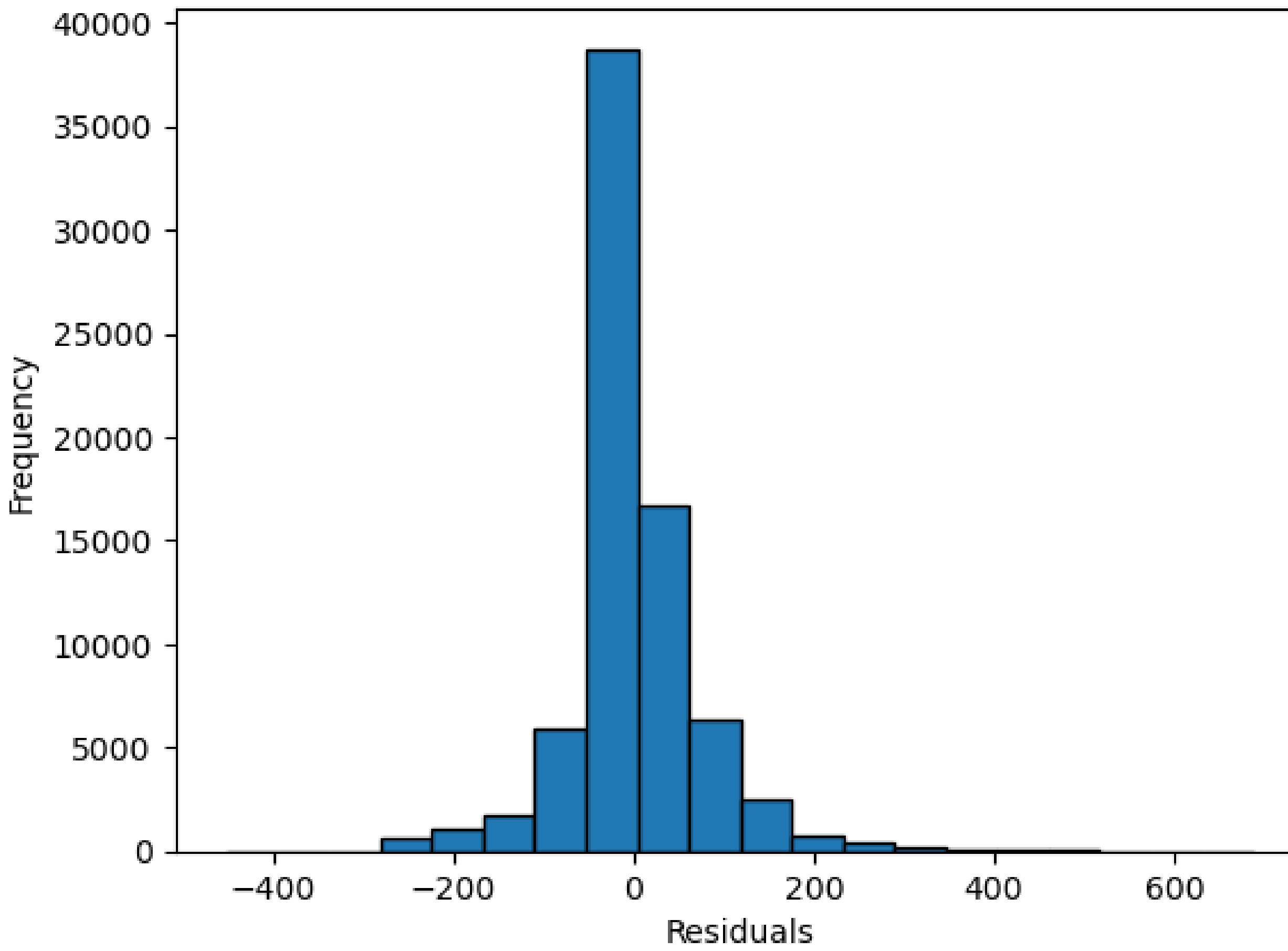
### Average Price of Departure Time



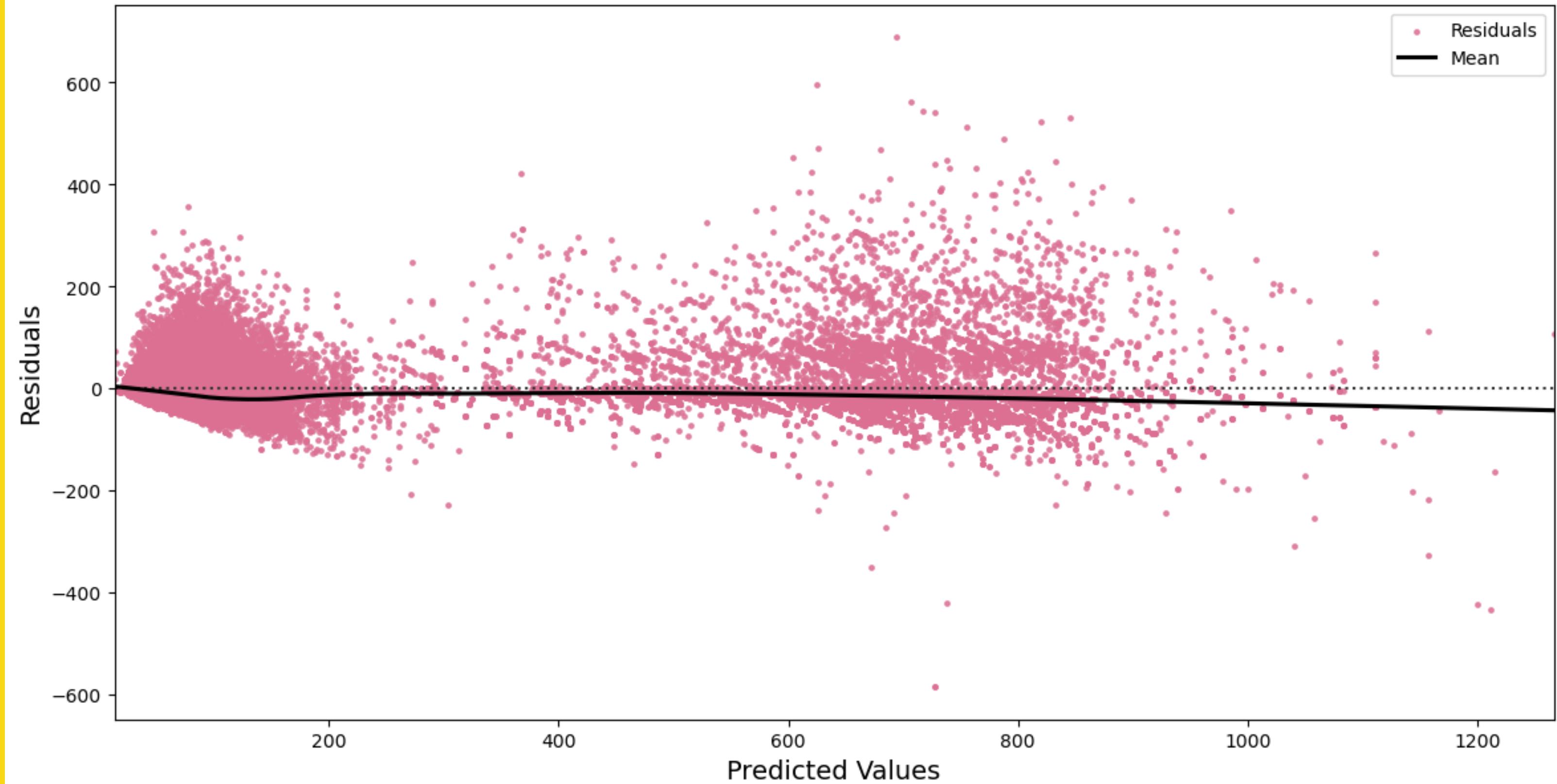
# MODELS

Model Type	Training Score	Testing Score	RMSE
Linear Regression	0.9428	0.9420	\$65.64
Decision Tree Regressor	0.9291	0.9283	\$72.94
Gradient Boost (XGB)	0.9593	0.9586	\$55.81
Random Forest Regressor	0.9793	0.9754	\$42.75

### Histogram of Residuals

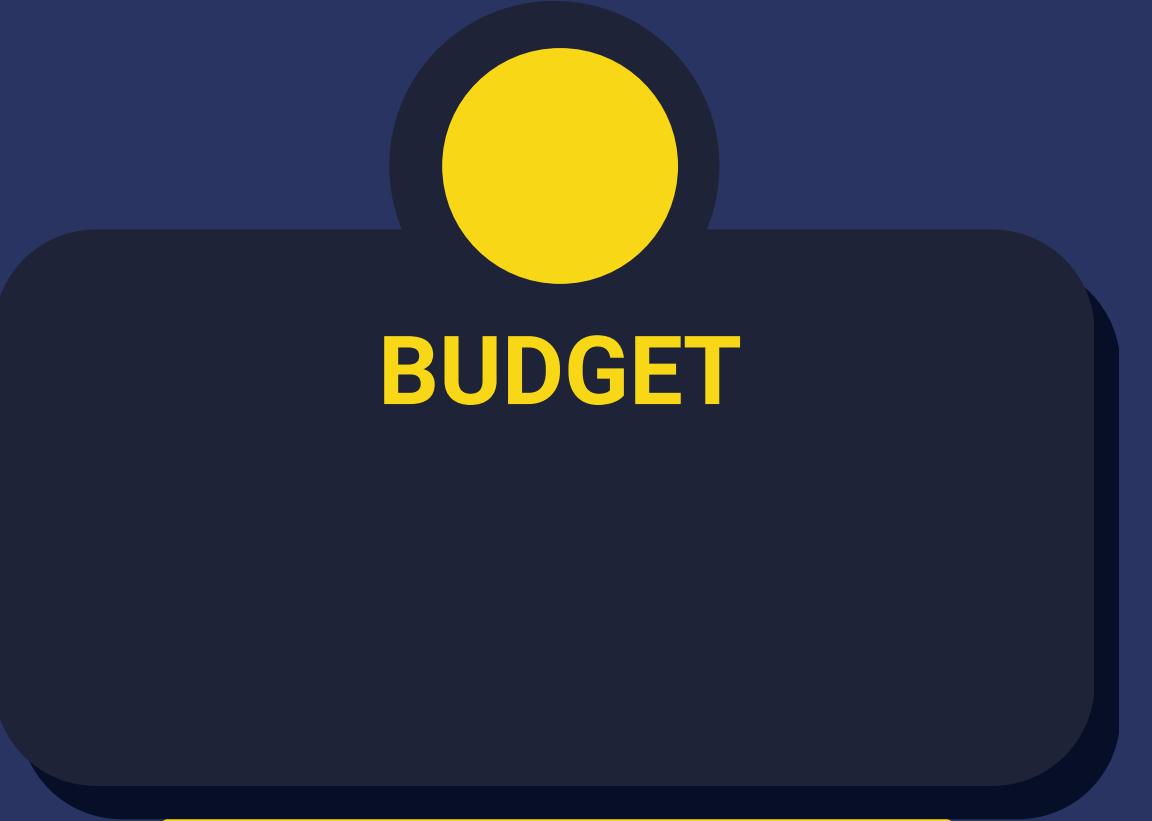


## Residuals Plot

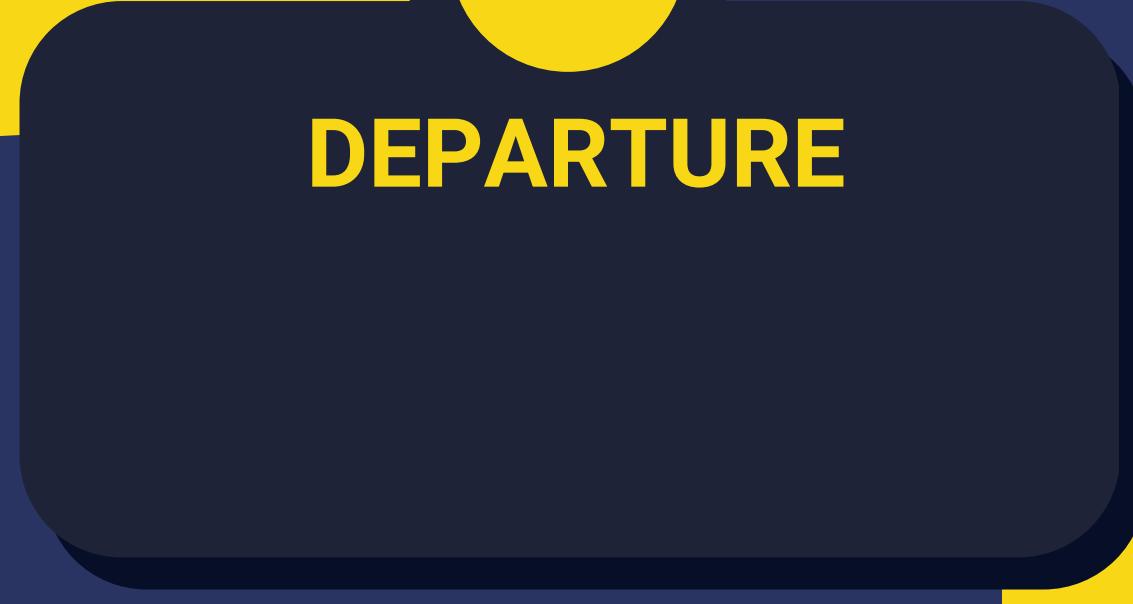




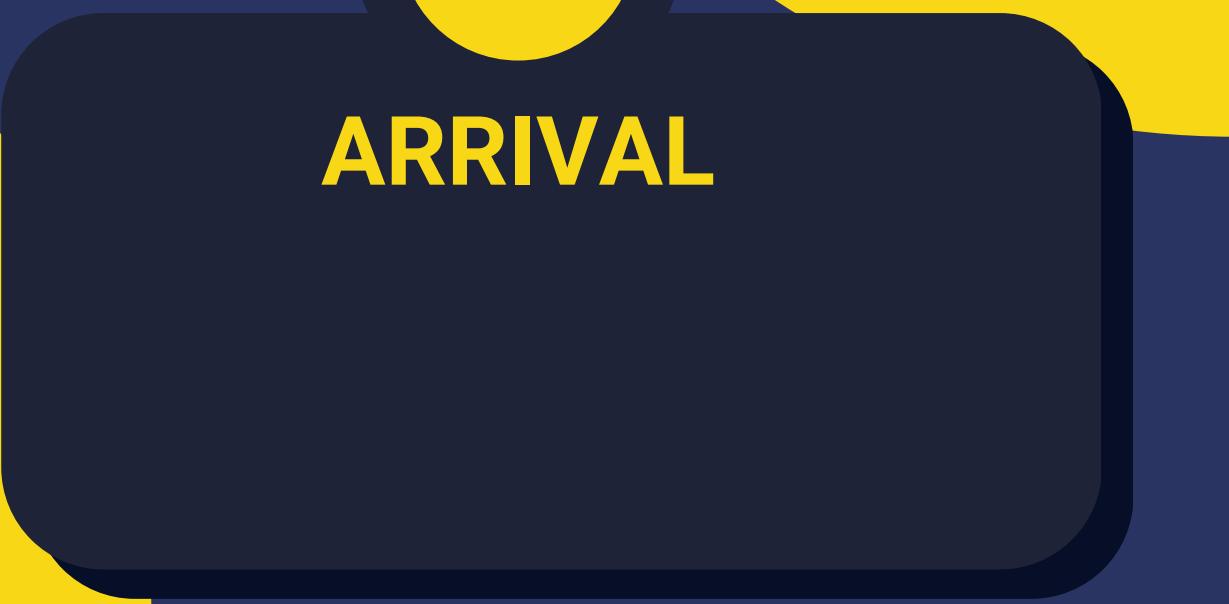
Finding Where to GO!



BUDGET



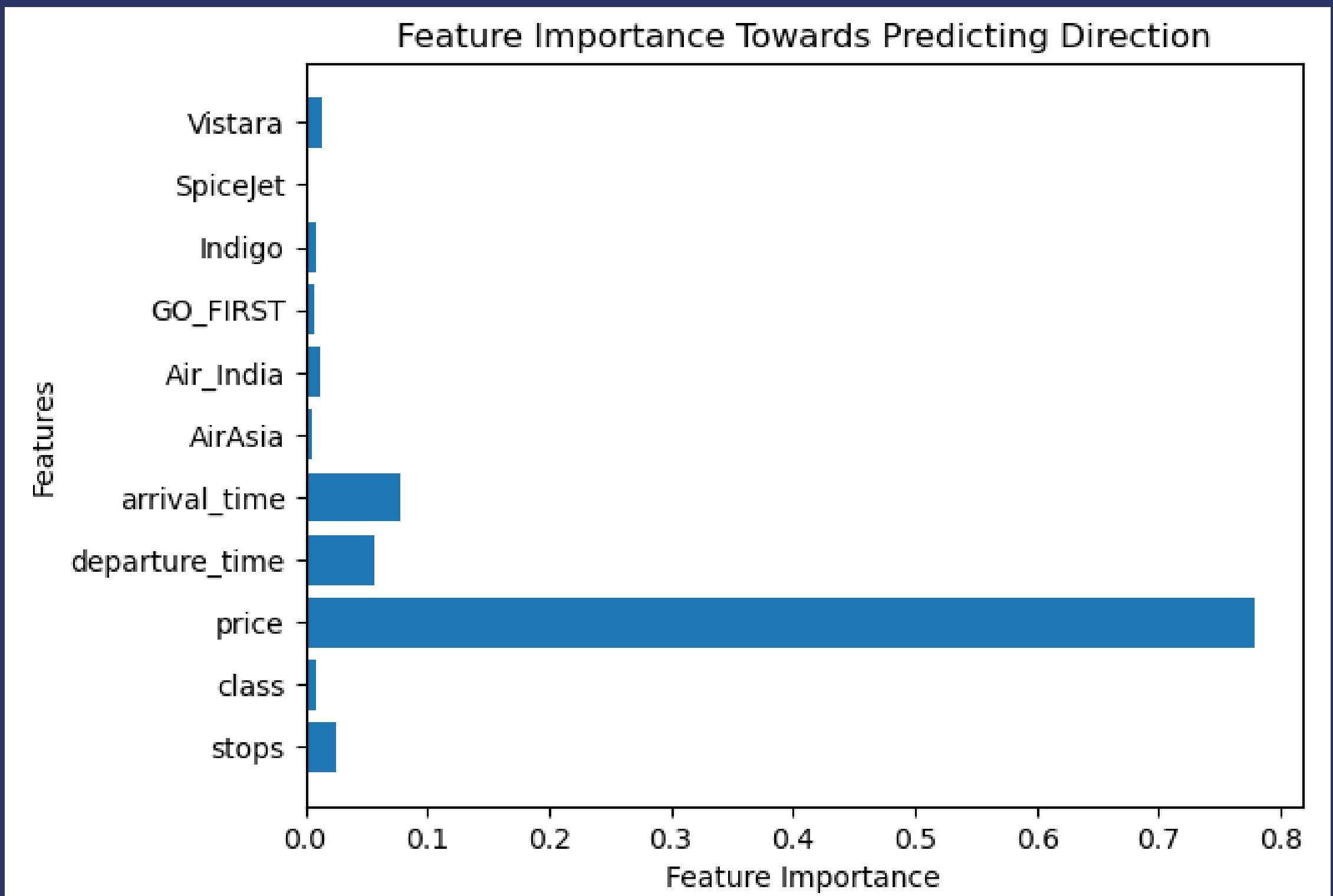
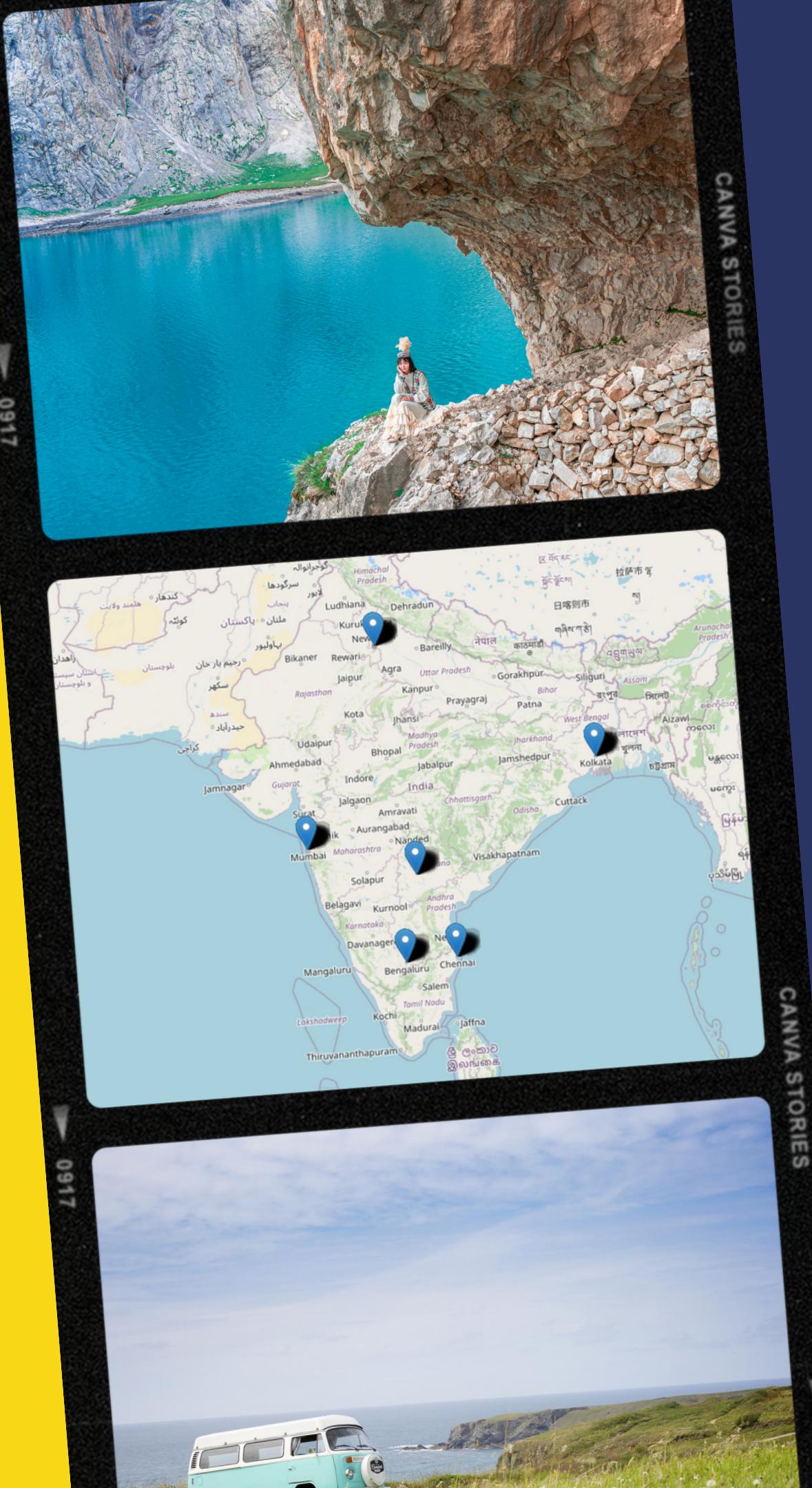
DEPARTURE



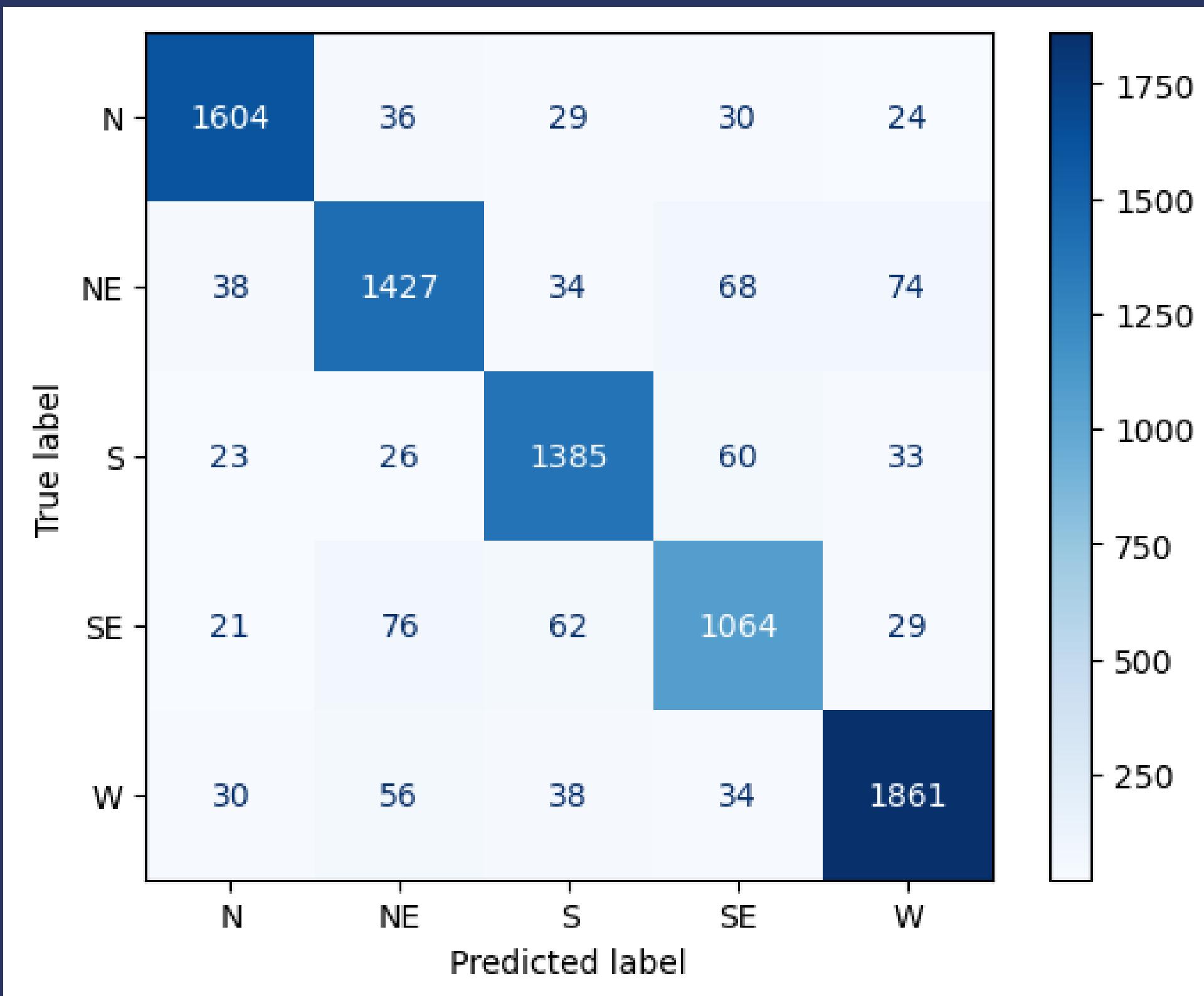
ARRIVAL



# RANDOM FOREST CLASSIFIER



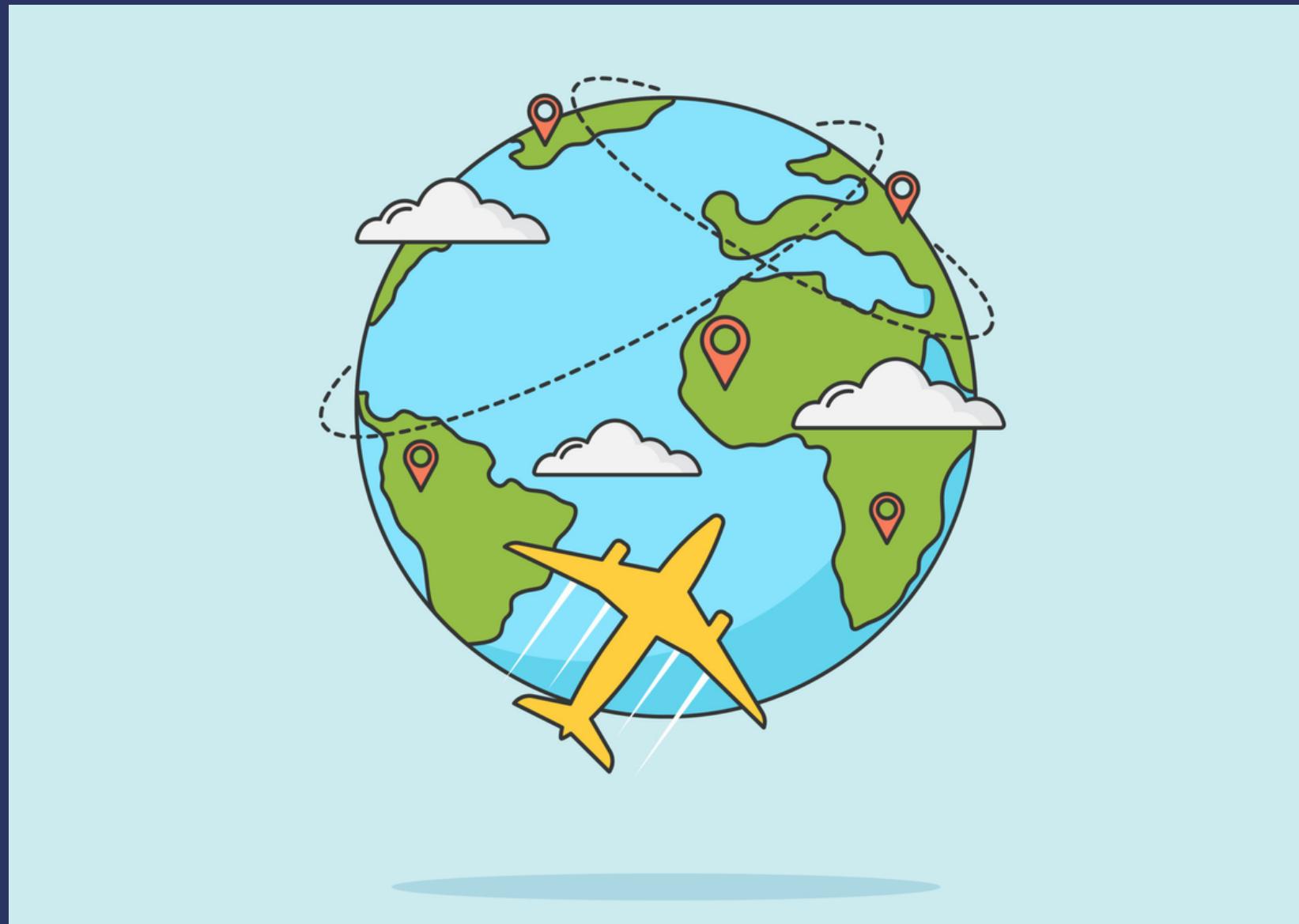
# HONED RANDOM FOREST CLASSIFIER



# Conclusion



# STEPS FORWARD



Expand upon the online form that when you put in your budget and starting location. Can predict and advise what directions and locations that would fit your desires.



Be able to utilize a time series model on a more expansive dataset to be able to pick out times of the year that best to fly to chosen areas.



Take into account the change of flight prices over time and to give more robust assistance.



# FLIGHT PRICES TODA?

polares

**\$5,66,900  
\$5,80,000**

Instagones

**91,00,900  
44,60,000**

Comunes

**535,60,900  
554 63,900**

abuses

**44,560  
57,280**