Flight Price Analysis

By Flight Simulator

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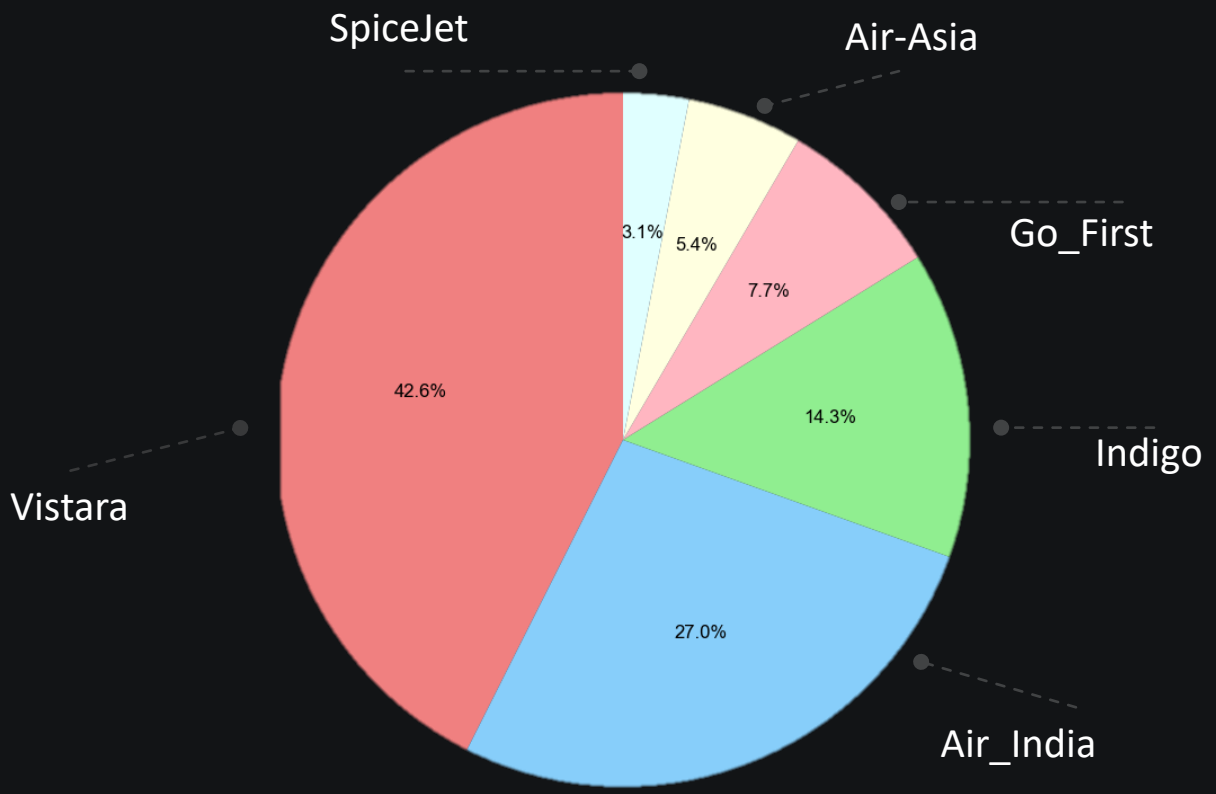
Introduction

We have checked over 20 datasets and have chosen this specific one because of how many people, especially people who take the economy class, check almost a month ahead for their flight and its price.
We wanted to help such people with our analysis.

Overview

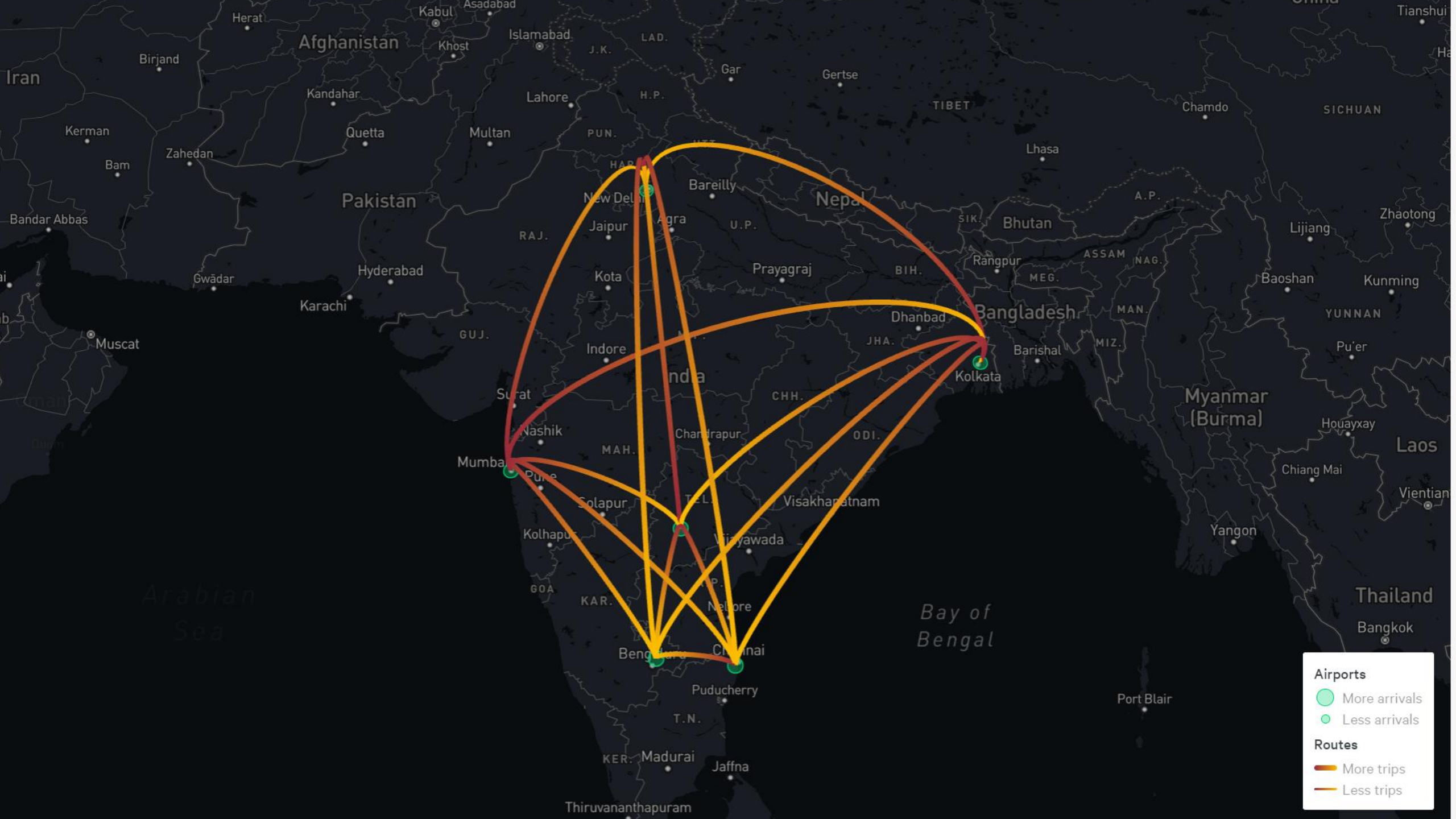
Flight price analysis is a common topic among people who work on data analysis. As students, we wanted to check how much we have learned by taking a competitive topic and try to do it better than others

Many people use via.com, goibbo.com and various other websites to book their flights. Most of these searches are rather specific and do not give a wide variety to compare the prices. Hence, we have made it so that people can compare prices in various matters, lets check them out.

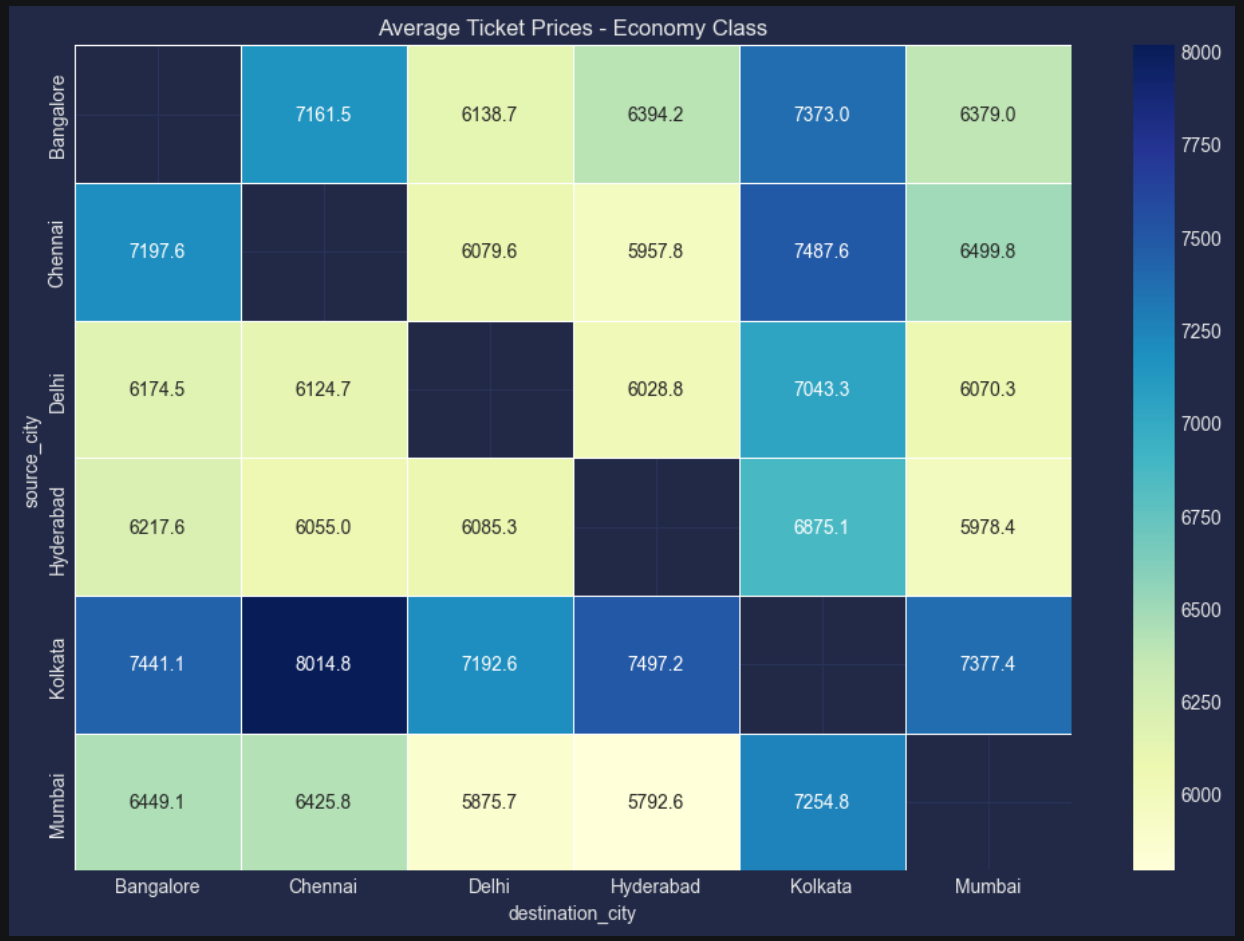


value_counts(): Counts the number of occurrences of each unique value in the 'airline' column, essentially calculating the market share for each airline.
plt.pie(...): Creates a pie chart.
labels=market_share.index: Assigns labels to each segment based on airline names.
autopct='%1.1f%%': Displays the percentage value on each segment.

Analysis of market share of leading airline companies


Herat
Kabul
Asadabad
Afghanistan
Islamabad
Khost
Birjand
Iran
Kandahar
Lahore
Gar
Gertse
TIBET
Chamdo
SICHUAN
Kerman
Quetta
Multan
Zahedan
Bam
Lhasa
Pakistan
Bareilly
Nepal
Bandar Abbas
Jaipur
Agra
Bhutan
Zhaotong
Lijiang
Gwādar
Hyderabad
Kota
Prayagraj
Rangpur
Baoshan
Kunming
Karachi
Bangladesh
Dhanbad
YUNNAN
Muscat
Indore
Barishal
Pu'er
Kolkata
Surat
Myanmar
(Burma)
Nashik
Houayxay
Laos
Mumbai
Chandrapur
Chiang Mai
Vientiane
Solapur
Visakhapatnam
Yangon
Kolhapur
Vijayawada
Arabian
Sea
Bay of
Bengal
Thailand
Nellore
Bangkok
Chennai
Puducherry
Port Blair
Madurai
Jaffna
Thiruvananthapuram
Airports
More arrivals
Less arrivals
Routes
More trips
Less trips

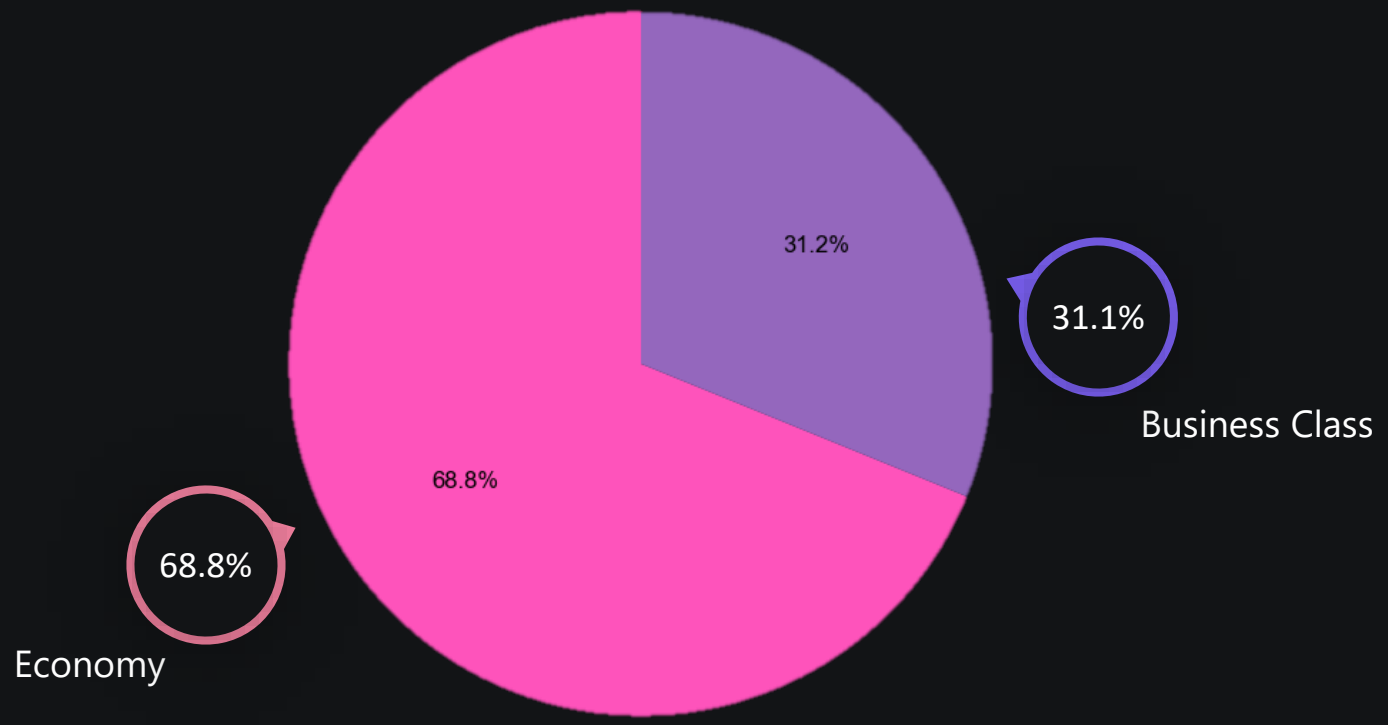
Average Cost of Ticket : Economy Class



pd.pivot_table(...): Creates a pivot table aggregating the average ticket prices for each combination of source and destination cities in the Economy class.
sns.heatmap(...): Uses a heatmap to visually represent the average ticket prices, where colors represent the values.

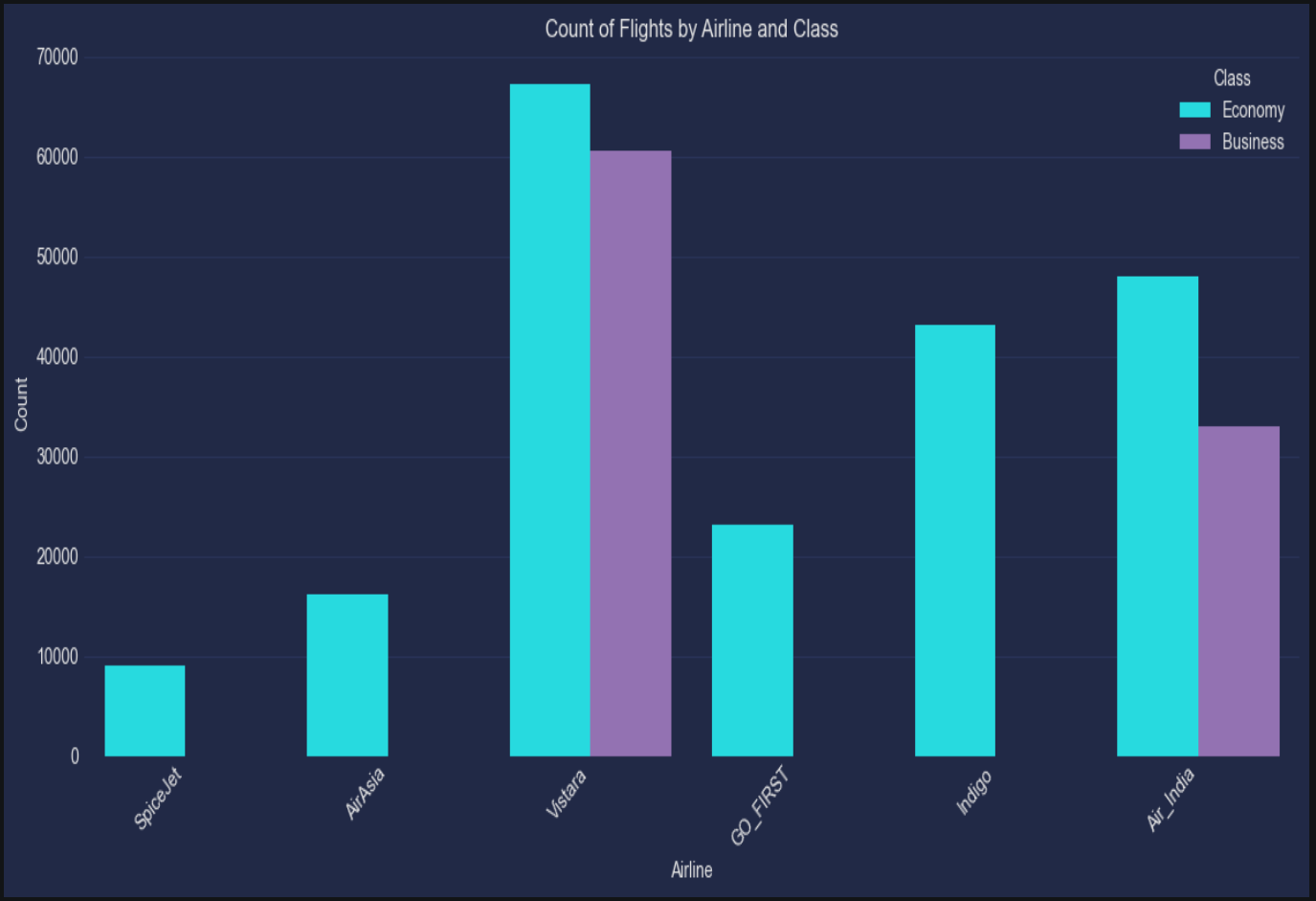
Average Cost of Ticket : Business Class

Market share of Business vs Economy



Label Encoder to convert Business and economy to 0 and 1 for easier pie chart generation
Pie Chart: plt.pie(...) is used to create a pie chart based on the counts of different class labels.

Market share of Business vs Economy for each airline



First made a subset of relevant data such as 'airline', 'class', 'source_city', and 'destination_city' for this plot.

sns.countplot(...): Creates a count plot

We used a custom palette to contain both Economy And Business class for each airline

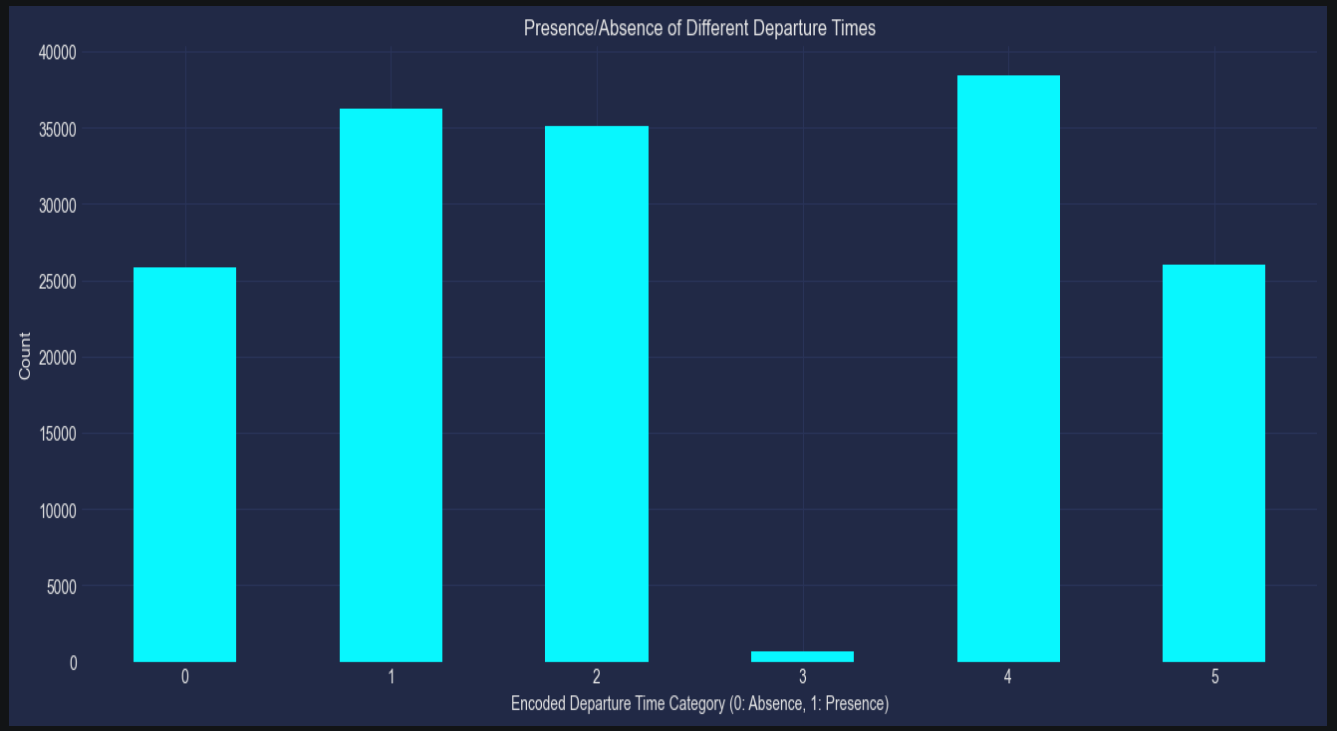
```
sns.countplot(data=flight_data, x='airline', hue='class', palette=custom_palette)
```

Price of ticket vs Days Left

Grouping by 'days_left': dataff.groupby('days_left')['price'].mean() calculates the average ticket price for each unique 'days_left'.
Resetting Index: .reset_index() ensures that 'days_left' becomes a regular column, not an index.
Line Plot: plt.plot(...) creates a line plot using 'days_left' on the x-axis and average ticket price on the y-axis. It helps visualize trends in ticket prices concerning the number of days left before departure.

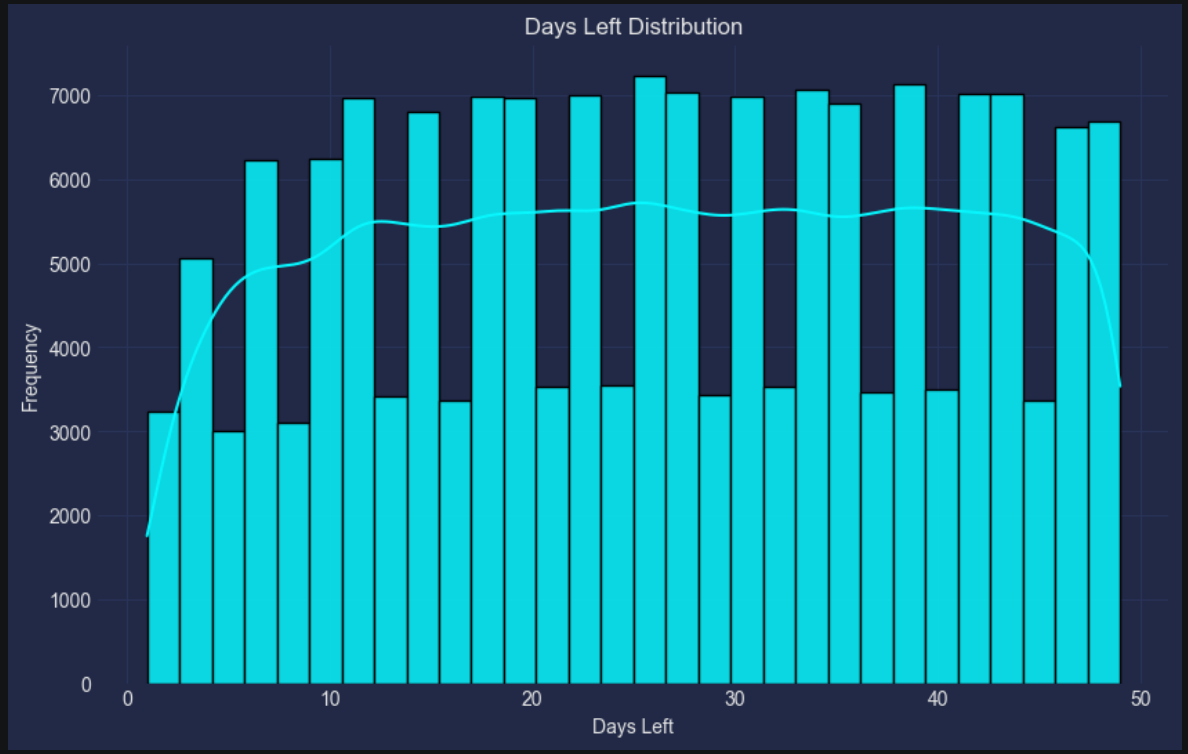
Price of Flights vs Departure Time

0 : Afternoon
1 : Early_Morning
2 : Evening
3 : Late_Night
4 : Morning
5 : Night



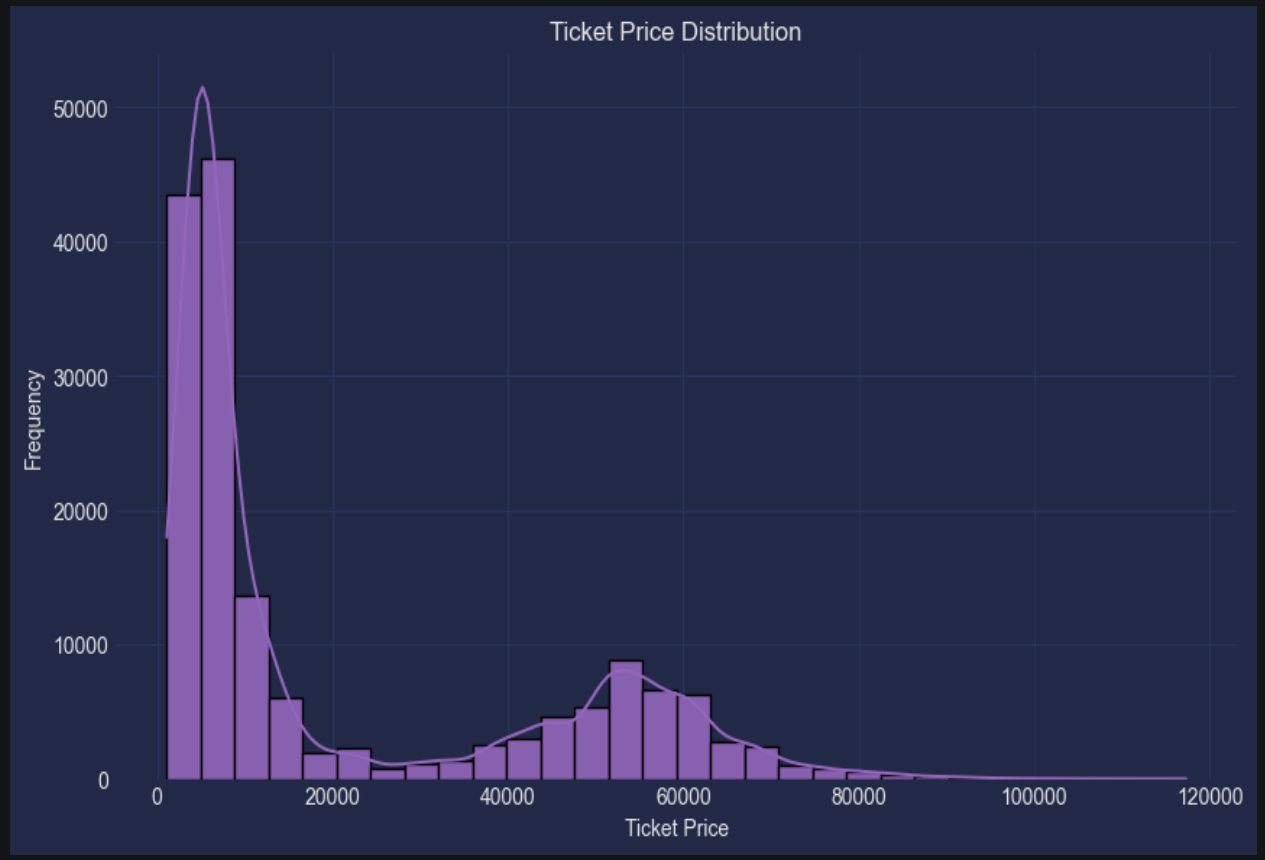
Label Encoding:
Applied to 'departure_time' using label_encoder.fit_transform(dataff['departure_time']).
Transformed categorical times into numeric labels for analysis.
Encoded Column:
Created 'departure-time_encoded' to store transformed values.
mapping_dict :clarifies the numeric-to-time mapping.

Skewness of Days Left



Skewness of Days Left: -0.036005607891737

Skewness of Ticket Price

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Skewness of Ticket Price: 1.0610258334180254
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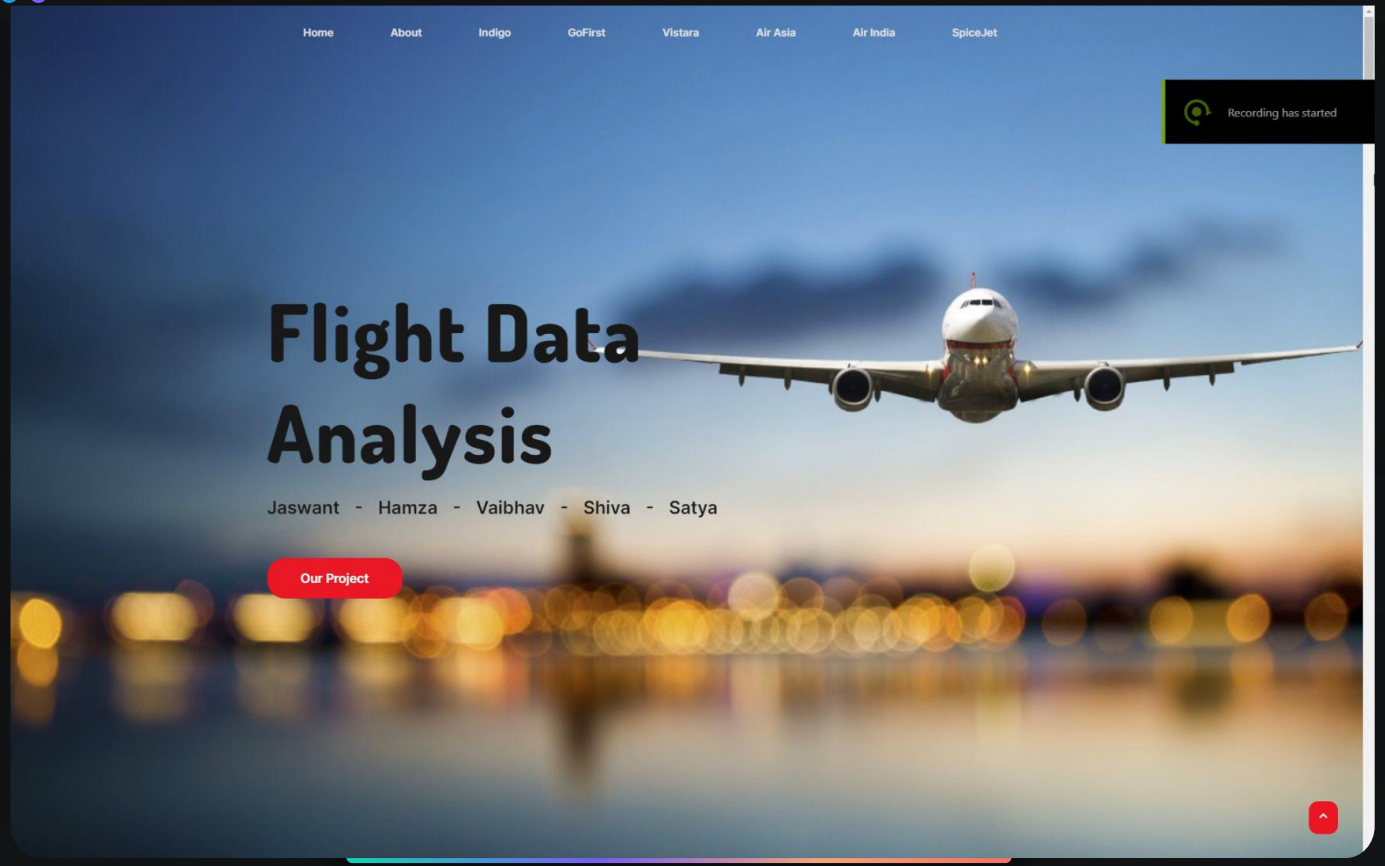
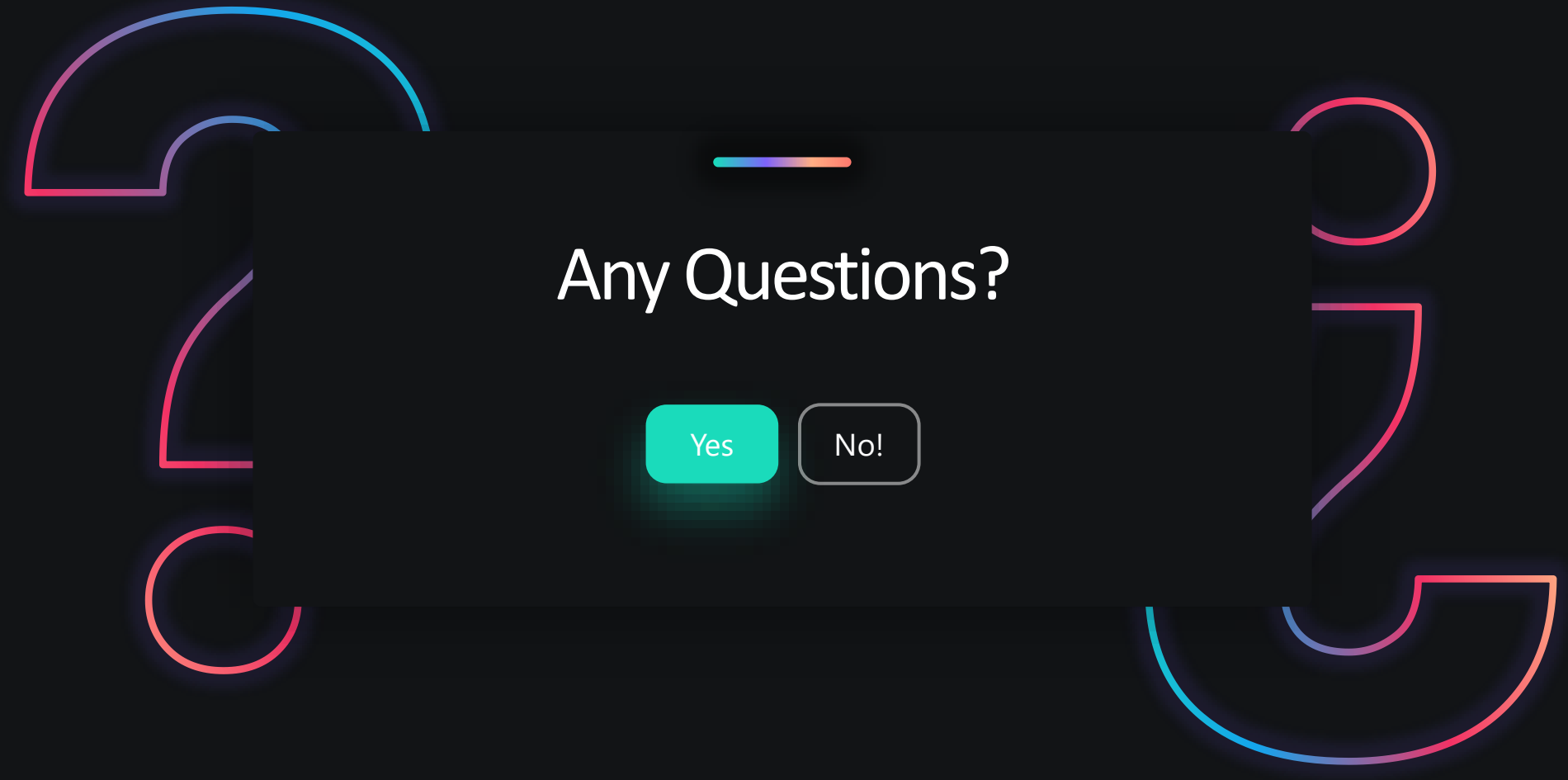
Our website

We have made a website which gets even more in depth for each airline




Any Questions?
Yes
No!

Thank You