Flyzy Flight Data Analysis

Using Microsoft Power Business Intelligent Tool:

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INTRODUCTION:

Flyzy is one-of-a-kind travel-tech platform that aims to transform modern-day travel into a completely hassle-free experience by bringing innovation and power of technology right to your fingertips, quite literally! It connects retailers, service providers, and other stakeholders facilitating air, road, and train travel with the passengers via its unique hi-tech AI-enabled platform.

Apart from creating safer, simpler, and more personalised experiences for the passengers, Flyzy also ensures commercial benefits for the service providers and stakeholders involved. Flyzy's services will soon be made available for other popular modes of travel like rail and road.

http://www.flyzygo.com

BUSINESS OBJECTIVES:

The aviation industry is highly competitive, and airlines are always looking for ways to improve their operations and gain a competitive edge.

By analysing and visualising flight data using Power BI, airlines can gain insights into their performance and identify areas for improvement.

These insights can help airlines improve operational efficiency, enhance passenger satisfaction, increase revenue.

http://www.flyzygo.com

LEARNING GOALS:

- ✓ Develop proficiency in data analysis and visualization using Power BI.
- ✓ Learn to work with large and complex datasets from the aviation industry.
- ✓ Develop skills in data cleaning, transformation, and manipulation.
- ✓ Learn to identify patterns and trends in flight data, and derive insights to improve airline operations.

PROJECT HAS DONE IN THREE PARTS:

Flyzy: flight data analysis project has been done in three parts.

Each part has some specific steps which has been performed accordingly.

All part's steps are explained below:

Steps To Perform Data Analysis:

1 Connecting to Data Source And Cleaning data

In this data analysis project, we started by checking for missing values in the data and handled them appropriately.

This is important because missing values can affect the accuracy and reliability of our analysis. We used appropriate methods such as dropping not useful columns.

2 Exploratory data Analysis (EDA)

Visualize the distribution of flight ticket prices.

Identify patterns, trends, and relationships between variables such as location of boarding, flight duration, and number of stops.

Use descriptive statistics to summarize the data.

Validate assumptions and detect outliers and other anomalies in the data

3 Data Insights And Visualization

Create interactive dashboards and visualizations to present the results of the exploratory data analysis

Highlight key insights and trends in the data such as the relationship between flight ticket price and flight duration

Use histograms, scatter plots, and box plots to display the distribution of the data and identify patterns and trends

Use interactive filters to allow the users to explore the data and discover insights

1 CONNECTING TO DATA SOURCE AND CLEANING DATA

The first step in this project is to clean and prepare the flight ticket price dataset.

This step is crucial for ensuring the accuracy and reliability of the results. It involves checking for missing values, transforming and aggregating the data, and verifying its quality and integrity.

The goal is to have a clean and well-structured dataset that is ready for further analysis.

- ✓ Load the flight ticket price dataset into Power BI
- ✓ Check for missing values and handle them appropriately
- ✓ Transform and aggregate the data as needed for further analysis
- ✓ Verify the data quality and integrity.

In this data analysis project, we started by checking for missing values in the data and handled them appropriately.

This is important because missing values can affect the accuracy and reliability of our analysis. We used appropriate methods such as dropping not useful columns.

SAMPAL DATA AFTER CLEANING:

Finally, we verified the data quality and integrity to ensure the data was reliable and accurate, and loaded in power bi for further analysis.

airline	flight	source_city	departure_time	stops	arrival_time	destination_city	class	duration	days_left	price
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	48	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	12.5	48	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	47	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	12.5	47	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	39	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	39	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	37	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	37	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	38	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	38	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	42	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	42	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	40	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	40	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	41	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	41	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	11	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	11	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	10	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	10	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	14	9	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	9	52063
Air_India	AI-770	Kolkata	Night	one	Morning	Hyderabad	Business	15.42	14	52063

2 EXPLORATORY DATA ANALYSIS (EDA)

The second step is to perform an exploratory data analysis of the flight ticket price dataset.

This task involves visualizing the data, identifying patterns, trends, and relationships between variables, and using descriptive statistics to summarize the data.
The goal is to gain a deeper understanding of the data and to validate assumptions, detect **outliers** and other anomalies, and **uncover interesting insights**.

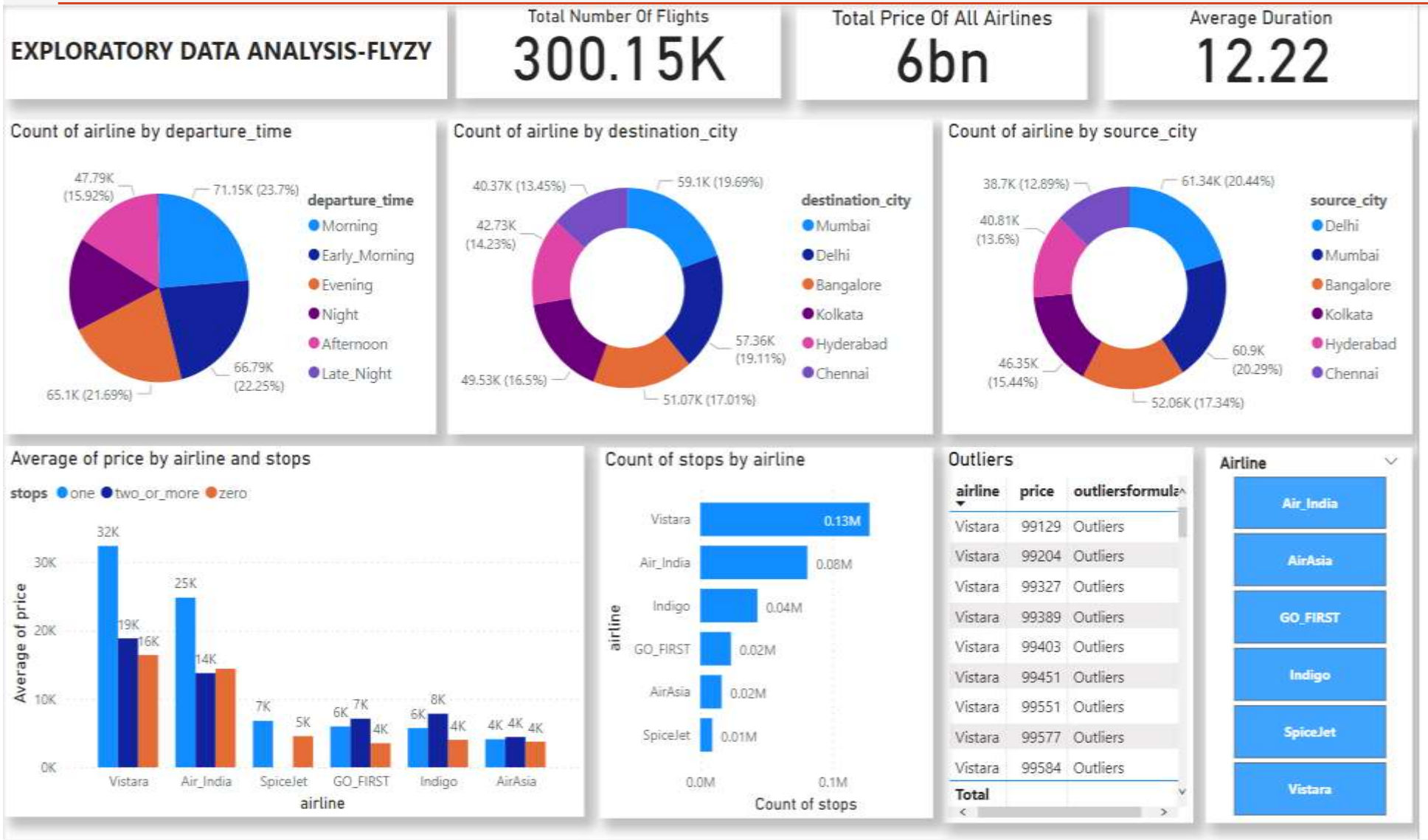
In this step I have,
Visualize the distribution of flight ticket prices.

Identify patterns, trends, and relationships between variables such as location of boarding, flight duration, and number of stops.

Use descriptive statistics to summarize the data.

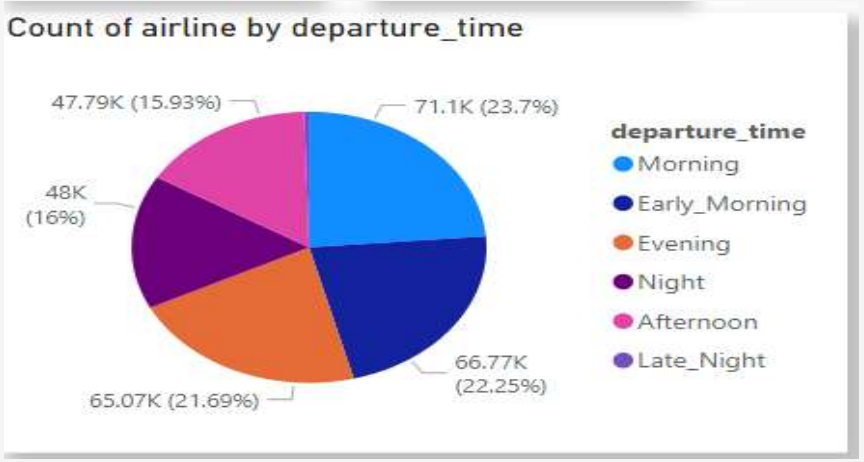
Validate assumptions and detect outliers and other anomalies in the data

2 FINAL EDA REPRESENTATION

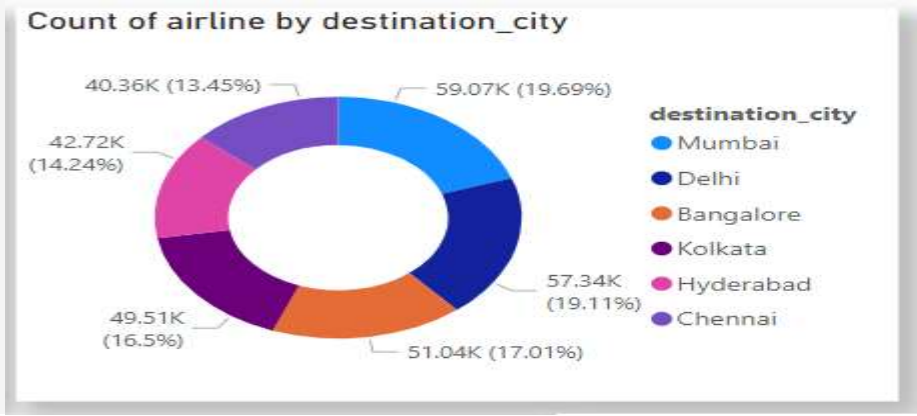


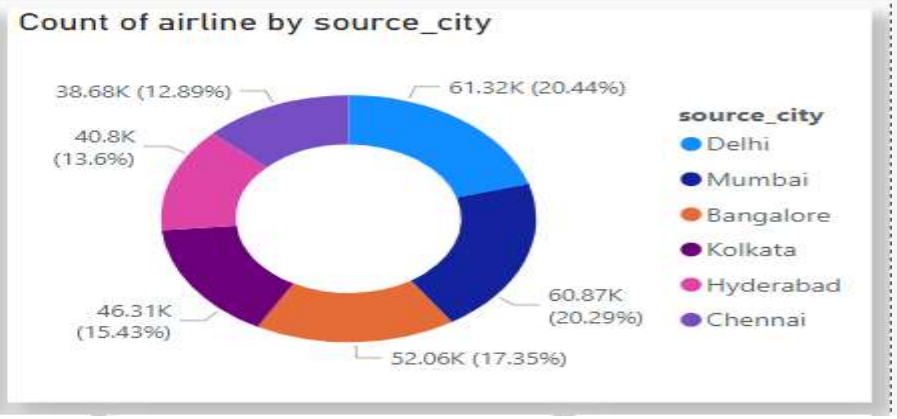
INSIGHTS VISUALIZATION

1- Most of the flights (23.7%) are departing in the morning.



2- The majority of flights are going to Mumbai from Delhi in the Morning.

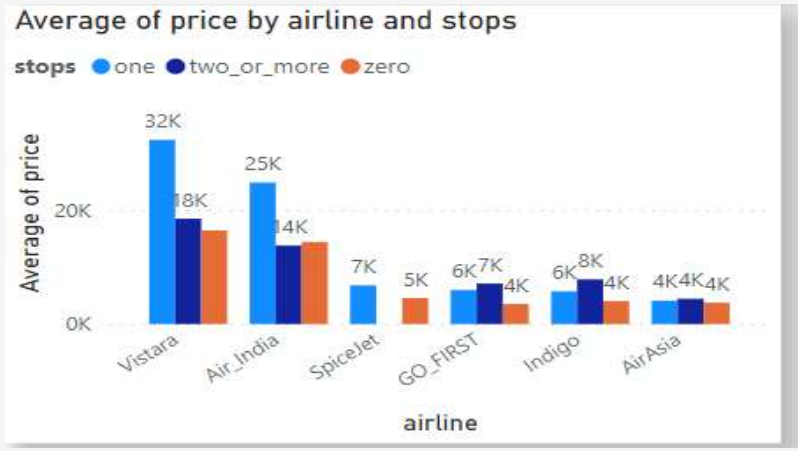


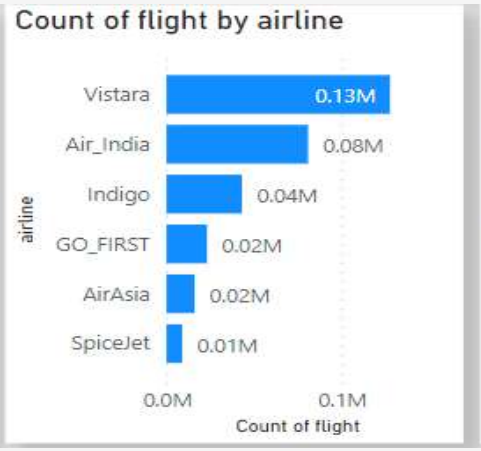


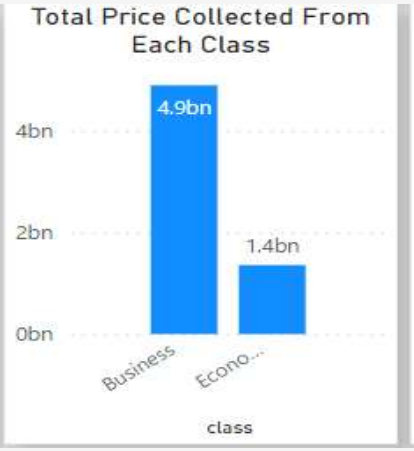
INSIGHTS VISUALIZATION

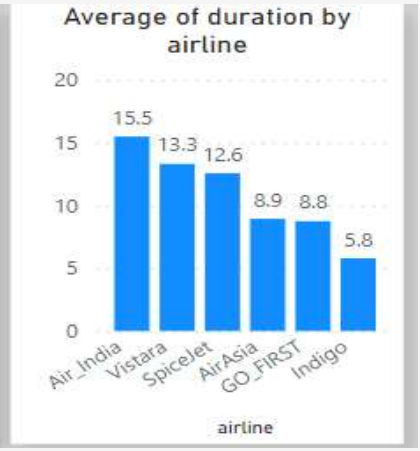
3- Highest and lowest number of Flights by airlines.
Vistara has **highest** number of Flights: **0.13M**
SpiceJet has **lowest** number of Flights: **0.01M**

2- Some other insights are here.

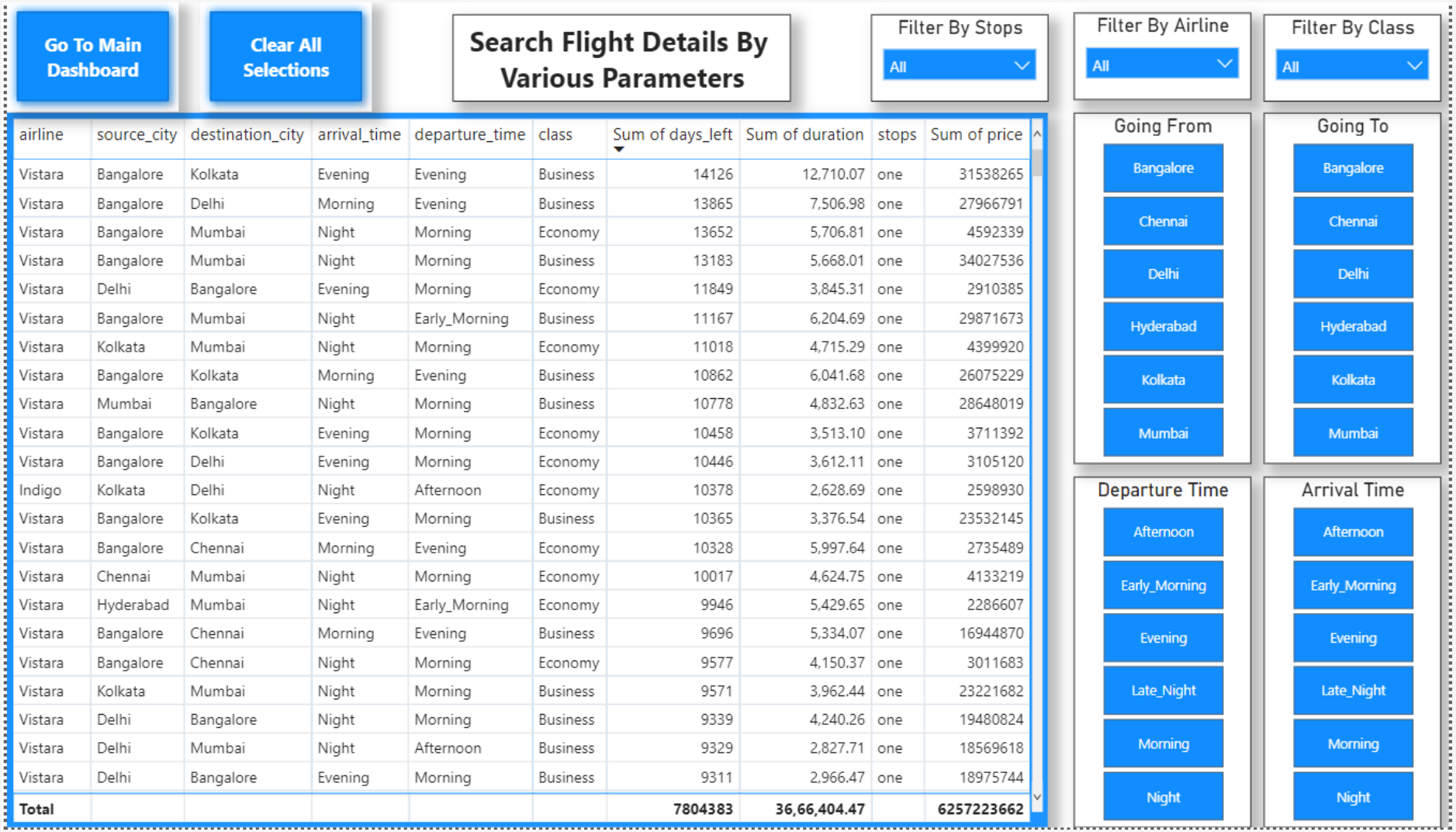








DETAILED SEARCH VARIOUS PARAMETER, SECTION:



Go To Main Dashboard

Clear All Selections

Search Flight Details By Various Parameters

Filter By Stops: All

Filter By Airline: All

Filter By Class: All

airline	source_city	destination_city	arrival_time	departure_time	class	Sum of days_left	Sum of duration	stops	Sum of price
Vistara	Bangalore	Kolkata	Evening	Evening	Business	14126	12,710.07	one	31538265
Vistara	Bangalore	Delhi	Morning	Evening	Business	13865	7,506.98	one	27966791
Vistara	Bangalore	Mumbai	Night	Morning	Economy	13652	5,706.81	one	4592339
Vistara	Bangalore	Mumbai	Night	Morning	Business	13183	5,668.01	one	34027536
Vistara	Delhi	Bangalore	Evening	Morning	Economy	11849	3,845.31	one	2910385
Vistara	Bangalore	Mumbai	Night	Early_Morning	Business	11167	6,204.69	one	29871673
Vistara	Kolkata	Mumbai	Night	Morning	Economy	11018	4,715.29	one	4399920
Vistara	Bangalore	Kolkata	Morning	Evening	Business	10862	6,041.68	one	26075229
Vistara	Mumbai	Bangalore	Night	Morning	Business	10778	4,832.63	one	28648019
Vistara	Bangalore	Kolkata	Evening	Morning	Economy	10458	3,513.10	one	3711392
Vistara	Bangalore	Delhi	Evening	Morning	Economy	10446	3,612.11	one	3105120
Indigo	Kolkata	Delhi	Night	Afternoon	Economy	10378	2,628.69	one	2598930
Vistara	Bangalore	Kolkata	Evening	Morning	Business	10365	3,376.54	one	23532145
Vistara	Bangalore	Chennai	Morning	Evening	Economy	10328	5,997.64	one	2735489
Vistara	Chennai	Mumbai	Night	Morning	Economy	10017	4,624.75	one	4133219
Vistara	Hyderabad	Mumbai	Night	Early_Morning	Economy	9946	5,429.65	one	2286607
Vistara	Bangalore	Chennai	Morning	Evening	Business	9696	5,334.07	one	16944870
Vistara	Bangalore	Chennai	Night	Morning	Economy	9577	4,150.37	one	3011683
Vistara	Kolkata	Mumbai	Night	Morning	Business	9571	3,962.44	one	23221682
Vistara	Delhi	Bangalore	Night	Morning	Business	9339	4,240.26	one	19480824
Vistara	Delhi	Mumbai	Night	Afternoon	Business	9329	2,827.71	one	18569618
Vistara	Delhi	Bangalore	Evening	Morning	Business	9311	2,966.47	one	18975744
Total						**7804383**	**36,66,404.47**		**6257223662**

Going From: Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Mumbai

Going To: Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Mumbai

Departure Time: Afternoon, Early_Morning, Evening, Late_Night, Morning, Night

Arrival Time: Afternoon, Early_Morning, Evening, Late_Night, Morning, Night

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3 DATA INSIGHTS AND VISUALIZATION

The third step is to create interactive dashboards and visualizations to present the results of the exploratory data analysis.

In this step, I have created a final Dashboard using the Power BI tool. Here are some useful insights which can be easily accessed through the Power BI report.

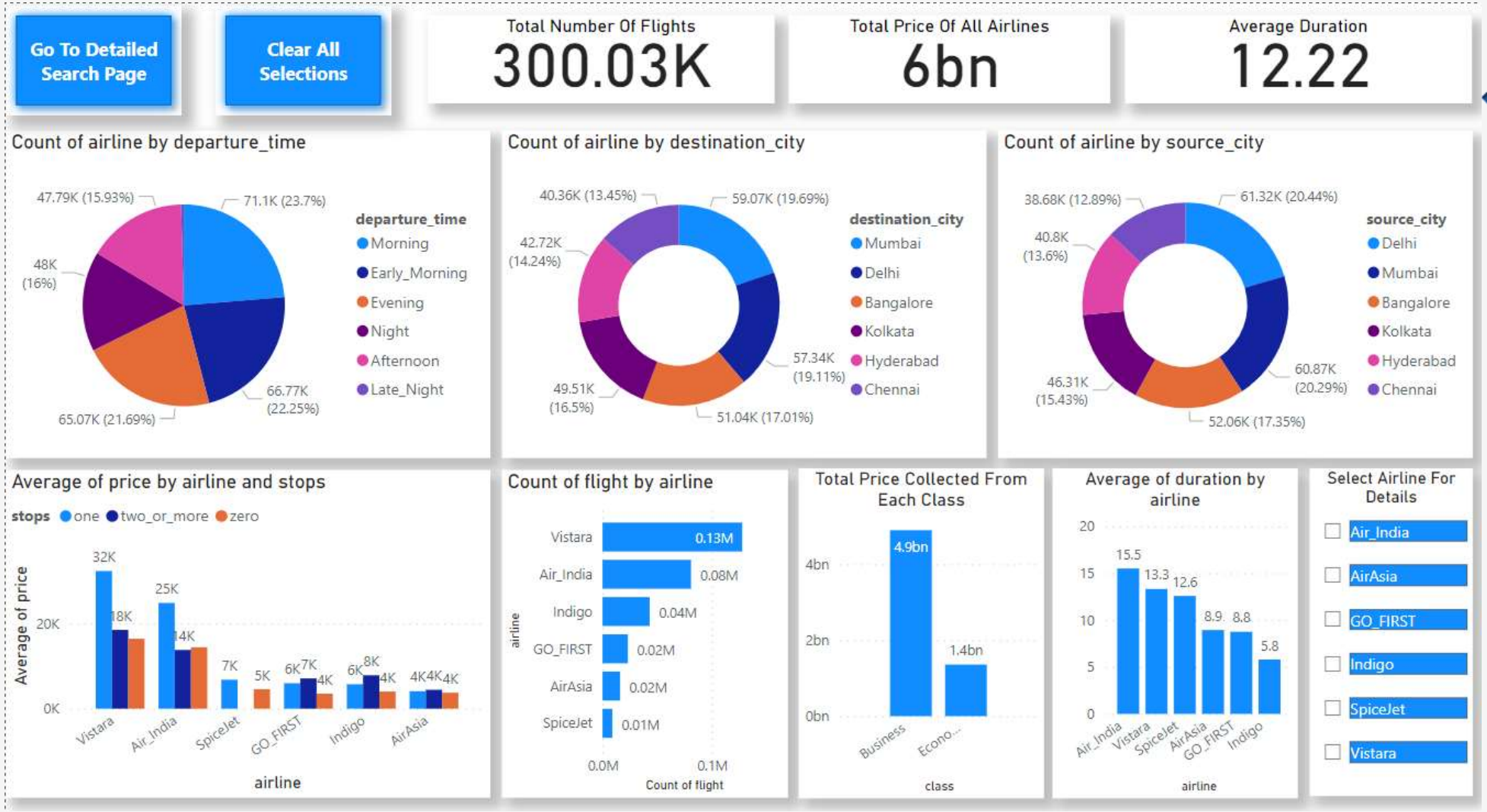
1- Most of the flights (23.7%) are departing in the morning.

2- The majority of flights are going to Mumbai from Delhi in the Morning.

3- The total number of flights is 300.03K.

4- Total price collected is 6 Billion.

3 FINAL DASHBOARD



CONCLUSION:

Examining the factors that influence the cost of airline tickets is essential for airlines to maintain competitiveness within the market.

By comprehending the impact of various elements such as flight duration, days remaining until departure, arrival and departure times, competition, seasonality, ancillary fees, as well as supply and demand on ticket prices, airlines can make well-informed choices regarding pricing strategies.

This enables them to attract customers effectively and maximize revenue. The valuable insights obtained from data analysis assist airlines in formulating pricing approaches that are specifically tailored to their unique market conditions. Consequently, this can result in enhanced profitability and customer satisfaction.

By harnessing the power of data, airlines can stay ahead of the competition and deliver optimal value to their esteemed customers.


thank you