

# Project Report

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## INTRODUCTION

### *1.1 Overview*

Unlocking insights into the intricate dynamics of the global air transportation network is crucial for understanding trends and optimizing operations. Leveraging the powerful capabilities of Tableau, organizations can visualize complex data, identify patterns, and make informed decisions to enhance efficiency and passenger experience.

### *1.2 Purpose*

The purpose of "Unlocking Insights into the Global Air Transportation Network with Tableau" is to leverage Tableau's data visualization capabilities to gain valuable insights into the dynamics, trends, and patterns of the global air transportation network, thereby facilitating informed decision-making and strategic planning within the aviation industry.

## PROBLEM DEFINITION & DESIGN THINKING

- **EMPATHY MAP:**

**UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU**

**SAYS**

- I need accurate and up-to-date data for analysis (Icon: Question mark)
- Understanding route patterns is crucial (Icon: Thumbs up)
- I wish there were clear data quality indicators

**THINK**

- Thinks about optimizing flight routes for efficiency (Icon: Head with brain)
- Considers the impact of airline alliances on data (Icon: Head with gear)
- Worries about missing or incomplete data points

**Global Air Transportation Network**

**DOES**

- Cleans and preprocesses the dataset for analysis (Icon: Eye)
- Visualizes route data to identify trends
- Collaborates with domain experts for context

**FEEL**

- Frustration when encountering inconsistent data (Icon: Head with exclamation mark)
- Excitement when discovering insightful patterns
- Concerned about drawing accurate conclusion

[See an example](#)

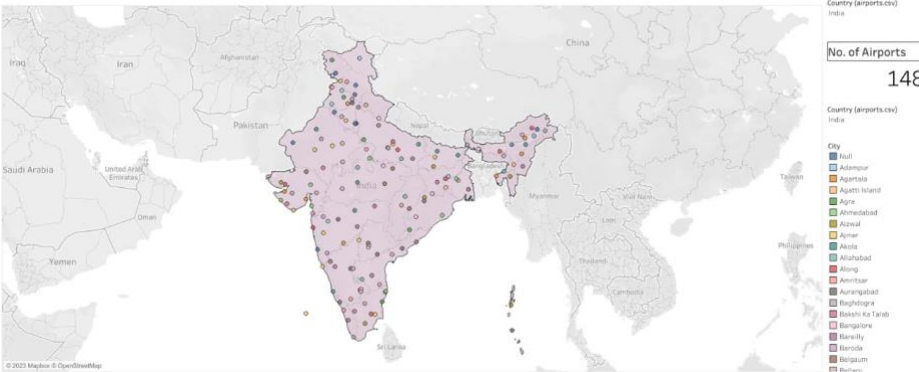
- **BRAINSTORMING MAP**



## RESULTS :

- *SCREENSHOTS*

## DASHBOARD 1



## DASHBOARD 2

Airlines within a Country				Country
Airline ID	Name	Icon	Callsign	India
218	Air India Limited	AIC	AIRINDIA	Active
241	Air Sahara	SSH	SAHARA	
560	Air India Express	AAX	EXPRESS INDIA	Active
1006	Alliance Air	ALL	ALLIED	
1370	Blue Dart Aviation	BDA	BLUE DART	Active
2001	Deccan Aviation	DAN	DECCAN	
2975	Go Air	GOA	GO AIR	Active
2634	Gujarat Airways	GJA	GUJARAT AIR	
2850	Indigo Airlines	IGO	INFLY	Active
2851	India International Airways	IIA	INDIA INTER	
2952	Indian Air Force	IAF	INDIAN AIR FORCE	Active
2853	Indian Airlines	IAC	INDIA AIR	
3000	Jet Airways	JAI	JET AIRWAYS	Active
3142	Kingfisher Airlines	KFR	KINGFISHER	
3907	Paramount Airways	PARA	PARAMOUNT	Active
3918	Pawan Hans	PHS	PAWAN HANS	
4375	SpiceJet	SEJ	SPICEJET	Country
13105	Air India Regional	INR	ALLIED	
13106	MDLR Airlines	INR	MDLR	India
13107	Tagor Airlines	ATA	JAGSON	
13905	Skyline Express	INR	NUR	Active
16327	Indigo Airline Group	IGL	INDYGL	
16362	OCEAN AIR CARGO	OCN	NUR	Active
16738	NORTH AIR	INR	NUR	
16901	12 North	N12	12N	Active
19451	Air Costa	INR	NUR	
20264	Air Yatra	YTI	NUR	Active
20266	Air Yatra	YTI	NUR	
21270	Air Carnival	INR	NUR	Active

Airports at Higher Altitude within a Country

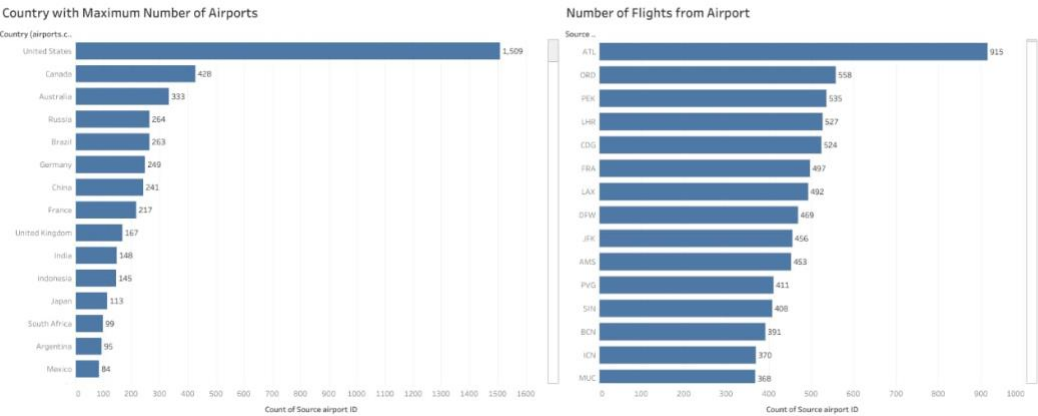
Index	Name (airports.csv)	City	ICAO (airports.csv)	
1	Ziro Airport	Ziro	VIZD	5,403
	Yelahanka Air Force Station	Bangalore	VOYK	3,045
	Vishakhapatnam Airport	Vishakhapatnam	VEPZ	44

Airports at Highest Altitude in World

Name (airports.csv)	City	ICAO (airports.csv)	
Daocheng Yading Airport	Daocheng	ZUDC	14,472
Qomdo Bangda Airport	Bangda	ZURD	14,219
Kangding Airport	Kangding	ZUKD	14,042
Nigari Gunsa Airport	Shiquanhe	ZUAL	14,022
El Alto International Airport	La Paz	SLP	13,355
Capitan Nicolas Rojas Airport	Potosi	SLPD	12,913
Yushu Batang Airport	Yushu	ZYLS	12,836
Copacabana Airport	Copacabana	SLCC	12,591
Inca Manco Capac International Airport	Julitaca	SPJA	12,552
Golog Majun Airport	Golog	ZLGL	12,426

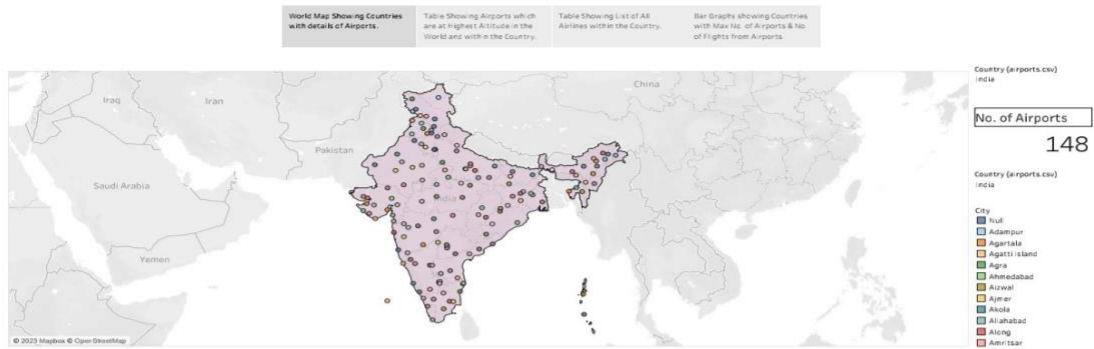
Country (airports.csv)  
India

DASHBOARD 4



STORY

### Global Air Transportation Network



Global Air Transportation Network

World Map Showing Countries with details of Airports.

Table Showing Airports which are at Highest Altitude in the World and within the Country.

Table Showing List of All Airlines within the Country.

Bar Graphs showing Countries with Max No. of Airports & No. of Flights from Airports.

Airlines within a Country

Airline ID	Name	Icao	Call sign	
218	Air India Limited	AIC	AIR INDIA	
241	Air Sahara	RSH	SAHARA	
569	Air India Express	AXB	EXPRESS INDIA	
1026	Alliance Air	ALL	ALLIED	
1170	Blue Bird Aviation	BDA	BLUE BIRD	
2001	Deccan Aviation	DKH	DECCAN	
2575	Go Air	GOA	GOAIR	
2634	Gujarat Airways	GUL	GUJARATAIR	
2850	Indigo Airlines	IGO	INDIGO	
2851	India International Airways	IEL	INDIA INTER	
2852	Indian Air Force	IFC	INDIAN AIR FORCE	
2853	Indian Airlines	IAC	INDIAN	
3000	Jet Airways	JAI	JET AIRWAYS	
3142	Kingfisher Airlines	KFR	KINGFISHER	
3907	Paramount Airways	PMW	PARAMOUNT	
3918	Pawan Hans	PHH	PAWAN HANS	
4375	SpiceJet	SJL	SPICEJET	
13101	Air India Regional	VI	ALLIED	
13106	MDLR Airlines	VI	MDLR	
13107	Jagson Airlines	JON	JAGSON	
13901	Skyline Aero	VI	NAUT	
16327	India Airline Group	IGI	INDIA I	

Country

India

Active

N

Y

Active

All

No. of Airlines

29

Active

All

Country

India

Airports at Higher Altitude within a Country

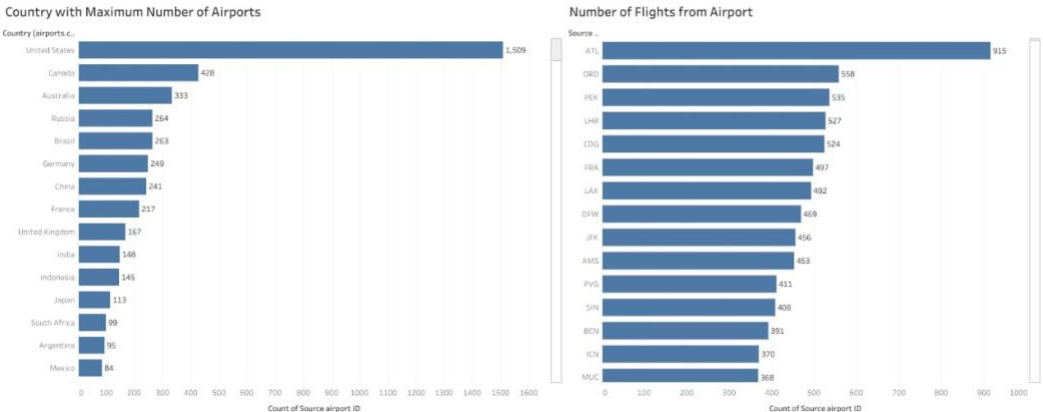
Index	Name (airports.csv)	City	ICAO (airports.csv)	Altitude (m)
1	Zero Airport	Zero	VGZD	5,403
	Yelahanka Air Force Station	Bangalore	VOYK	3,045
	Vishakhapatnam Airport	Vishakhapatnam	VSKZ	1,100

Airports at Highest Altitude in World

Name (airports.csv)	City	ICAO (airports.csv)	Altitude (m)
Dawu Cheng Yading Airport	Dawu Cheng	ZUDC	14,472
Qamdo Bangda Airport	Bangda	ZUBD	14,210
Kangding Airport	Kangding	ZUKD	14,042
Ngarl Gumsa Airport	Shiquanhe	ZUAL	14,022
El Alto International Airport	La Paz	SLP	13,853
Capitan Nicolas Rojas Airport	Potosi	SLPD	12,913
Yushu Batang Airport	Yushu	ZYL5	12,816
Copacabana Airport	Copacabana	SLCC	12,593
Inca Marco Capac International Airport	Julaca	SPJA	12,552
Golog Maqin Airport	Golog	ZULI	12,426

Country (airports.csv)

India



ADVANTAGES AND DISADVANTAGES :

Advantages:

Interactive visualization: Tableau allows for the creation of interactive and dynamic visualizations, enabling users to explore complex data and identify patterns or trends in the global air transportation network more easily.

User-friendly interface: With its intuitive interface and drag-and-drop functionality, Tableau makes it easy for both technical and non-technical users to create visualizations and dashboards without extensive coding knowledge.

Real-time data analysis: Tableau supports real-time data analysis, which is especially useful in monitoring and analyzing the ever-changing dynamics of the global air transportation network, including factors like flight routes, passenger volumes, and operational efficiency.

Disadvantages:

**Cost:** Tableau can be expensive, especially for enterprise-level or large-scale data analysis. This cost may be a barrier for smaller organizations or individuals with limited budgets.

**Steep learning curve:** While Tableau has a user-friendly interface, mastering its advanced features and functionalities often requires some training and expertise, which could be time-consuming for beginners.

**Performance issues with large datasets:** Analyzing large and complex datasets in Tableau can sometimes lead to performance issues, especially when dealing with extensive data processing or real-time data streaming, potentially affecting the speed and responsiveness of the application.

Considering these aspects, Tableau remains a popular choice for businesses and organizations looking to unlock insights into the global air transportation network due to its robust visualization capabilities and analytical features.

## **APPLICATION**

Tableau applications offer powerful data visualization tools that can unlock valuable insights into the global air transportation network. By utilizing Tableau, analysts can create interactive and visually engaging dashboards, allowing for easy exploration of complex air transportation data. This enables the identification of key patterns, trends, and performance metrics within the network, facilitating better decision-making processes for stakeholders in the aviation industry.

## **CONCLUSION**



In conclusion, Tableau's interactive visualizations offer valuable insights into the complexities of the global air transportation network. Despite potential costs, a learning curve, and performance concerns with large datasets, its user-friendly interface and real-time data analysis capabilities make it a compelling choice for organizations seeking comprehensive data visualization solutions.

## **FUTURE SCOPE**

In the future, integrating Tableau into educational curricula can enhance understanding of the global air transportation network, fostering data-driven decision-making and analytical skills among students. This prepares them for the complexities of the evolving aviation industry and encourages innovative solutions for future challenges.