PROJECT REPORT

UNLOCKING INSIGHTS INTO GLOBAL AIR TRANSPORTATION NETWORK

1 INTRODUCTION

1.1 Overview

Provide a brief overview of the project, its goals, and the key findings. Include a summary of the Tableau visualizations and insights gained. Introduce the project, its objectives, and the importance of studying the global air transportation network. The goal of this project is to leverage Tableau for analyzing and visualizing the global air transportation network to gain valuable insights into airport connectivity, route patterns, passenger flow, and more. This document outlines the step-by-step procedure for project development.

1.2 Purpose

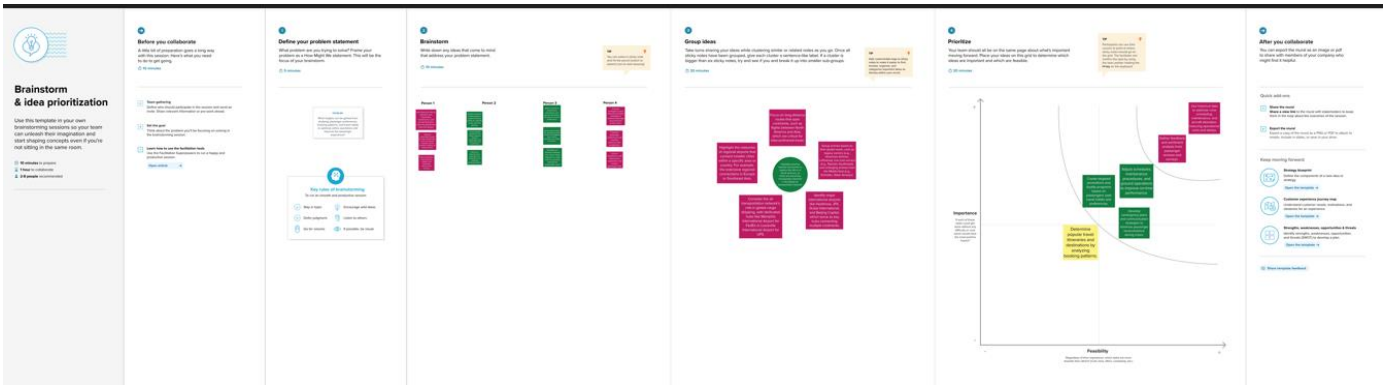
This project aims to use Tableau to analyze and visualize data related to the global air transportation network. It helps uncover valuable insights and trends within this network, which can be useful for various purposes, such as optimizing routes, improving travel experiences, or making data-driven decisions in the aviation industry.

PROBLEM DEFINITION & DESIGN THINKING

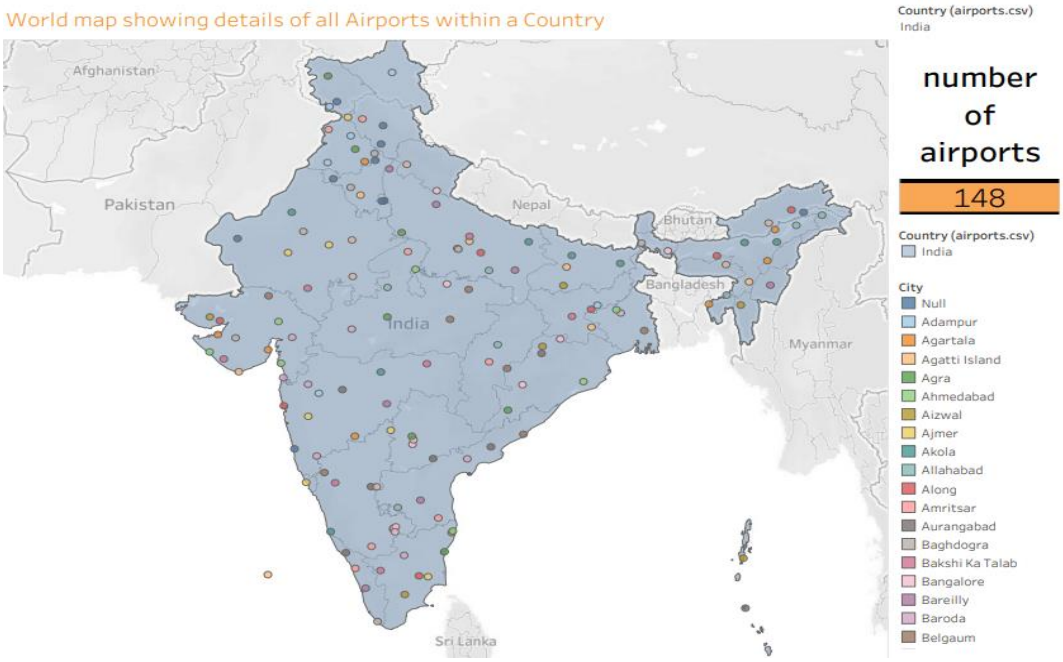
2.1 Empathy Map

Creating an empathy map for the global air transportation network can help us understand the thoughts, feelings, and needs of various stakeholders involved in the industry. This can include passengers, airline staff, airport personnel, aviation authorities, and more.

2.2 Ideation & Brainstorming map



3 RESULTS


World map showing details of all Airports within a Country
Afghanistan
Pakistan
Nepal
Bhutan
Bangladesh
India
Myanmar
Sri Lanka
Country (airports.csv)
India
number of airports
148
Country (airports.csv)
India
City
Null
Adampur
Agartala
Agatti Island
Agra
Ahmedabad
Aizwal
Ajmer
Akola
Allahabad
Along
Amritsar
Aurangabad
Baghdogra
Bakshi Ka Talab
Bangalore
Bareilly
Baroda
Belgaum

GLOBAL AIR TRANSPORTATION NETWORK

World Map showing Countries with Details of Airports | **Table showing Airports which are at Highest Altitude in the World and ..** | Table showing List of All Airlines within the Country | Bar graphs showing country with Max No .of Airports and Destinatio..

airports at higher altitude within a country

Country (airports.csv)
India

Name (airports.csv)	City	ICAO (airpo..	
Leh Kushok Bakula Rimpo..	Leh	VILH	10,682
Sheikh ul Alam Airport	Srinagar	VISR	5,429
Ziro Airport	Zero	VEZO	5,403

Airports at Higher altitude in the world

Name (airports.csv)	City	ICAO (airports.csv)	
Daocheng Yading Airport	Daocheng	ZUDC	14,472
Qamdo Bangda Airport	Bangda	ZUBD	14,219
Kangding Airport	Kangding	ZUKD	14,042
Ngari Gunsa Airport	Shiquanhe	ZUAL	14,022
El Alto International Airport	La Paz	SLLP	13,355
Capitan Nicolas Rojas Airport	Potosi	SLPO	12,913
Yushu Batang Airport	Yushu	ZYLS	12,816
Copacabana Airport	Copacabana	SLCC	12,591
Inca Manco Capac International Airport	Juliaca	SPJL	12,552
Golog Maqin Airport	Golog	ZLGL	12,426

GLOBAL AIR TRANSPORTATION NETWORK

World Map showing Countries with Details of Airports | Table showing Airports which are at Highest Altitude in the World and .. | **Table showing List of All Airlines within the Country** | Bar graphs showing country with Max No .of Airports and Destinatio..

Airline ID	Name	Icao	Callsign	
218	Air India Limited	AIC	AIRINDIA	
241	Air Sahara	RSH	SAHARA	
569	Air India Express	AXB	EXPRESS INDIA	
1026	Alliance Air	LLR	ALLIED	
1370	Blue Dart Aviation	BDA	BLUE DART	
2001	Deccan Aviation	DKN	DECCAN	
2575	Go Air	GOW	GOAIR	
2634	Gujarat Airways	GUJ	GUJARATAIR	
2850	IndiGo Airlines	IGO	IFLY	
2851	India International Airways	IIL	INDIA INTER	
2852	Indian Air Force	IFC	INDIAN AIRFORCE	
2853	Indian Airlines	IAC	INDAIR	
3000	Jet Airways	JAI	JET AIRWAYS	
3142	Kingfisher Airlines	KFR	KINGFISHER	
3907	Paramount Airways	PMW	PARAWAY	
3918	Pawan Hans	PHE	PAWAN HANS	
4375	Spicejet	SEJ	SPICEJET	
13105	Air India Regional	\N	ALLIED	
13106	MDLR Airlines	\N	MDLR	
13107	Jagson Airlines	JGN	JAGSON	
13905	Skyline nepc	\N	Null	
16327	Indya Airline Group	IG1	Indya1	
16362	OCEAN AIR CARGO	IXO	Null	
16738	NEPC Airlines	\N	Null	
16901	12 North	N12	12N	
19451	Air Costa	\N	Null	
20264	Air Vistara	VTI	Null	
20286	Air Pegasus	PPL	Null	
21270	Air Carnival	\N	Null	

Country
India

Active
- [x] N
- [x] Y

Active
- N
- Y

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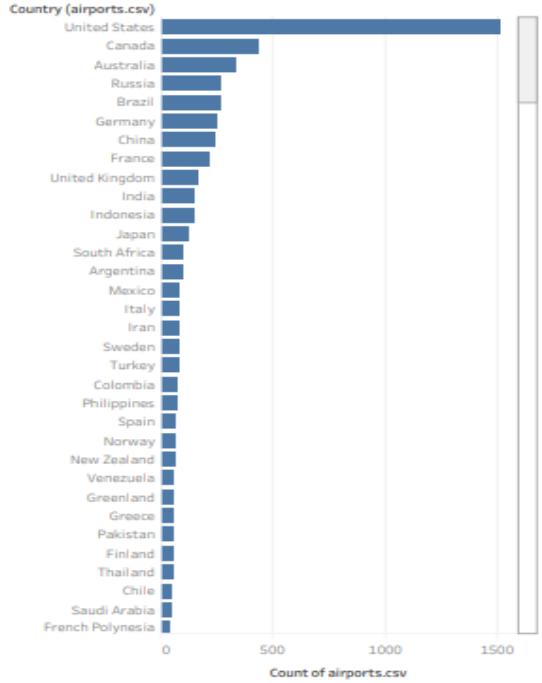
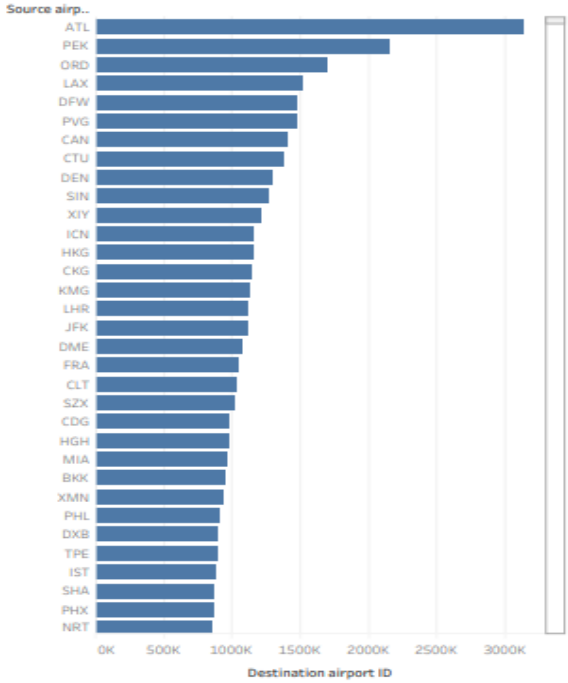
Country with Maximum no of Airports



Destination Airport ID from airport



4 ADVANTAGES

Improved Efficiency: Understanding the network can lead to more efficient flight routing, reducing travel times and fuel consumption.

Safety Enhancement: Identifying potential safety risks and optimizing air traffic management can enhance overall safety.

Economic Benefits: It can lead to better economic opportunities, such as optimizing airport locations and routes for increased business and tourism.

DISADVANTAGES

Privacy Concerns: Gathering and analyzing data related to air transportation could raise privacy concerns, especially regarding passenger information. Security Risks: Detailed information on the global air network could be exploited by malicious actors for nefarious purposes. Data Management: Managing and analyzing the vast amount of data involved can be complex and expensive.

5 APPLICATIONS

- **Route Optimization**: Helping airlines and logistics companies optimize flight routes, reduce fuel consumption, and minimize costs.
- **Market Analysis**: Providing valuable data for market research, including passenger trends, demand forecasting, and competitive analysis.
- **Safety Enhancement**: Identifying potential safety hazards and improving air traffic management for safer travel.
- **Infrastructure Planning**: Supporting airport authorities and governments in planning and expanding airport facilities to accommodate future growth.
- **Environmental Impact Assessment**: Assessing the environmental impact of air travel and finding ways to reduce carbon emissions.
- **Crisis Management**: Assisting in crisis management by monitoring and responding to disruptions in the air transportation network.
- **Tourism and Travel Planning**: Enabling tourists and travelers to make informed decisions about their journeys, such as choosing less congested routes or less busy travel times.
- **Economic Insights**: Offering insights into the economic impact of the air transportation industry on regional and global economies.
- **Academic Research**: Supporting academic studies related to transportation networks, economics, and social sciences.
- **Policy Formulation**: Informing government policies related to air travel, aviation regulations, and national security.

6 CONCLUSION

- The conclusion of the project on unlocking insights into the global air transportation network is that it has provided valuable information and knowledge about the intricacies and dynamics of the worldwide air travel system, which can be used for various purposes such as optimizing routes, improving efficiency, and making informed decisions in the aviation industry.
- The project using Tableau to unlock insights into the global air transportation network has successfully provided valuable data-driven insights and visualizations, enabling a better understanding of air travel patterns, connectivity, and trends worldwide.

7 FUTURE SCOPE

The future scope of a project focused on unlocking insights into the global air transportation network using Tableau includes:

- Data Visualization and Analysis: Continuously enhancing the visualization and analysis capabilities within Tableau to gain deeper insights into air transportation trends, traffic patterns, and performance metrics.

- Predictive Analytics: Developing predictive models to forecast air traffic, congestion, and airport operations to help stakeholders make informed decisions.

- Real-time Monitoring: Integrating real-time data sources to provide up-to-the-minute information on flight delays, cancellations, and other critical events.

- Sustainability and Efficiency: Exploring ways to use the data for improving the environmental sustainability and efficiency of the air transportation system.

- Stakeholder Engagement: Collaborating with aviation industry stakeholders, government agencies, and researchers to share findings and improve the overall functioning of the global air transportation network.

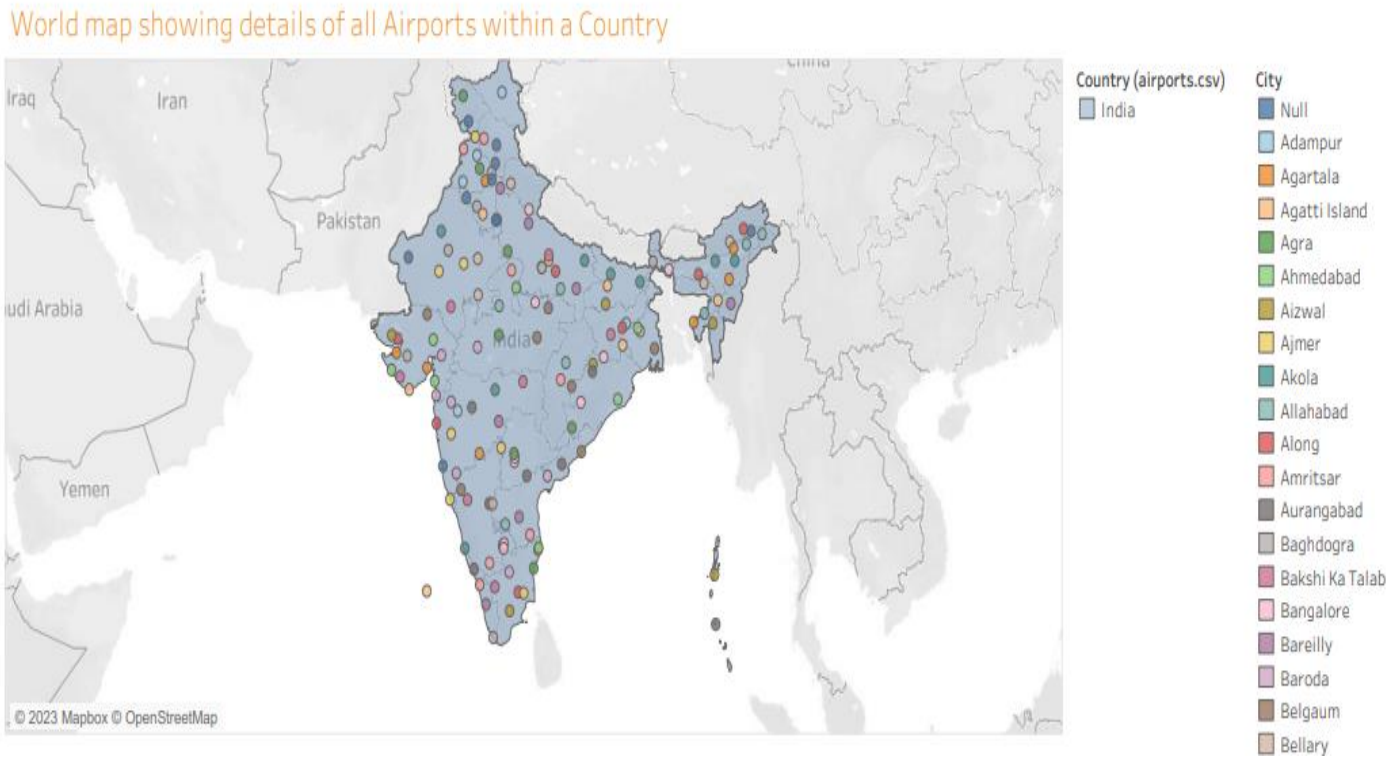
- Geographic Expansion: Expanding the project to cover more regions, airports, and airlines, and possibly linking it with other modes of transportation for a comprehensive view of the transportation ecosystem.

- User-Friendly Interfaces: Creating user-friendly interfaces for decision-makers, industry professionals, and the public to access and understand the insights derived from the project.

Overall, the future scope involves leveraging Tableau for ongoing data analysis and visualization, advancing predictive capabilities, and contributing to the optimization and sustainability of global air transportation.

8 APPENDIX

The "appendix" of a project on unlocking insights into the global air transportation network using Tableau typically includes additional information, data, charts, or any supporting materials that provide more in-depth details or context for the project. It may contain data sources and detailed visualizations.



number of airports

148

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Yelahanka Air Force Stati..	Bangalore	VOYK	3,045
Jakkur Aerodrome	Bengaluru	VOJK	3,013
Kempegowda Internation..	Bangalore	VOBL	3,000
HAL Airport	Bangalore	VOBG	2,912
Shillong Airport	Shillong	VEBI	2,910
Imphal Airport	Imphal	VEIM	2,540
Kangra Airport	Kangra	VIGG	2,525
Belgaum Airport	Belgaum	VABM	2,487
Mysore Airport	Mysore	VOMY	2,349
Bidar Air Force Station	Bidar	VOBR	2,178
Hubli Airport	Hubli	VAHB	2,171

Airlines within a Country

Airline ID	Name	Icao	Callsign	Active
15	Abelag Aviation	AAB	ABG	N
271	Allied Command Europe (..	ALF	ACEFORCE	N
538	ASL	XXX	Null	N
634	Airventure	RVE	AIRVENTURE	N
1346	Belgian Air Force	BAF	BELGIAN AIRFORCE	N
1373	Belgian Army	AYB	BELGIAN ARMY	N
1428	Belgavia	BLG	BELGAVIA	N
1515	Brussels International Air..	BXI	XENIA	N
1531	Brussels Airlines	DAT	BEE-LINE	Y
1551	Belgian Navy	NYB	BELGIAN NAVY	N
2235	Eurocontrol	EUC	Null	N
2252	European Air Transport	BCS	EUROTRANS	N
2431	Flying Service	FYG	FLYING GROUP	N
2528	Gendarmerie Belge	GDB	BELGIAN GENERMERIE	N
2800	International Air Carrier A..	ITC	Null	N
3032	Jetairfly	JAF	BEAUTY	Y
3821	Ostend Air College	OCO	AIR COLLEGE	N
4445	SITA	SIT	Null	N
4734	Sky Service	SKS	SKY SERVICE	N
4873	TNT Airways	TAY	QUALITY	N
4896	Thomas Cook Airlines	TCW	THOMAS COOK	Y
5169	Thalys	Null	Null	N
5333	Virgin Express	VEX	VIRGIN EXPRESS	Y
5383	VLM Airlines	VLM	RUBENS	Y
6002	TUI Airlines Belgium	TUB	BEAUTY	N
10224	Zz	\N	Null	Y
17963	VG Airlines (IV)	FVG	Nico	N

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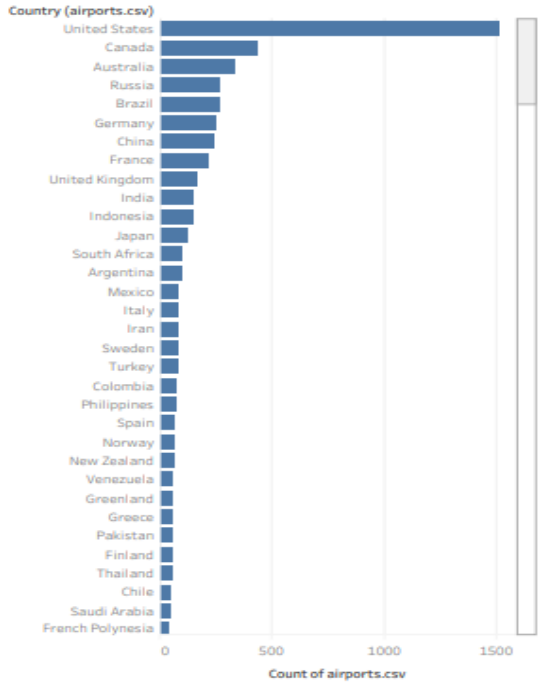

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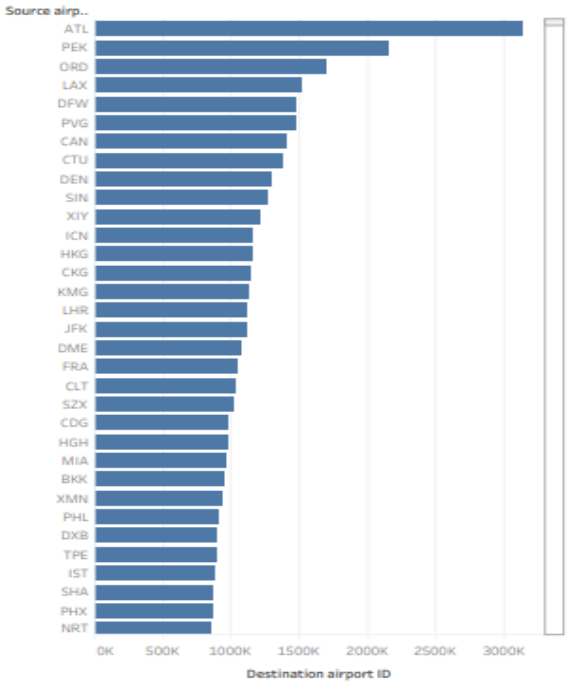

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Yushu Batang Airport	Yushu	ZYLS	12,816
Copacabana Airport	Copacabana	SLCC	12,591
Inca Manco Capac International Airport	Juliaca	SPJL	12,552
Golog Maqin Airport	Golog	ZLGL	12,426