

GLOBAL AIR TRANSPORTATION NETWORK

UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU

TEAM LEADER NAME : R.KANMANI

TWAM MEMBER NAME: B.KAVIYA

P.KAVIYA

S.KAVIYA

P.KIRUTHIKA

1 INTRODUCTION

1.1 OVERVIEW

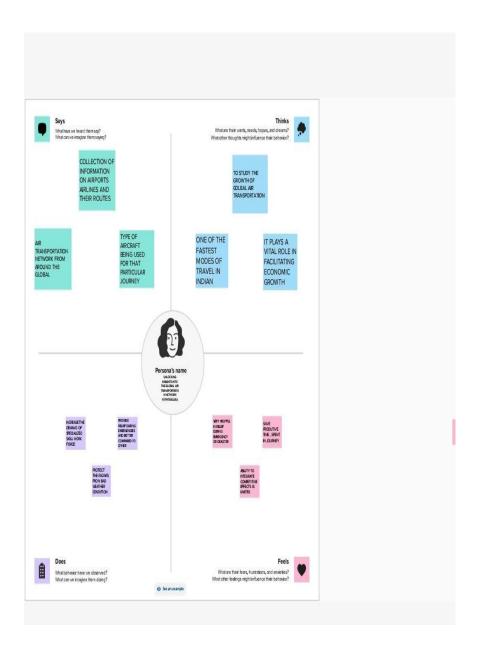
- This global air transportation network dataset is a comprehensive collection of information on airports, airlines, and their routes.
- ❖ It contains information such as names, cities, countries, codes (IATA and ICAO) longitudes, latitudes and altitudes of airports across the world with details time zone and day light saving time data.
- Additionally, this includes information about airlines including their, IDs name aliases, IATA and ICAO codes, callsigns country of orgin and activity/inactivity status.
- Similarly, it also covers routes details such as airline source to destination airports along with the essential details like code share stakeholder if any stops required during this journey along with the type of aircraft being used for that particular journey.
- ❖ It requires your generous donations in order for them to keep updating this data source so please do donated if possible.

1.2 PURPOSE

- ❖ The purpose of the project on unlocking insights into the global air transportation network with tableau is to leverage data analysis and visualization to gain valuable insights.
- ❖ Make the data driven decisions in the aviation industry.
- With access to data on flight routes, passenger demand, and profitability, airlines can identify opportunities for route optimization.
- * This can lead to better route planning increased operational efficiency and improved profitability.
- ❖ By analyzing passenger data, such as behaviour, preferences, and demographics, airlines can gain valuable customer insights.

2. PROBLEM DEFANATION & DESIGN THINKING

2.1 EMPATHY MAP



2.2 IDEATION & BRAINSTROMING MAP



3 RESULT

DASHBOARD:1

Country (airports.csv) Belgium

WORLD MAP SHOWING DETAILS OF ALL AIRPORTS WITH IN A COUNTRY

© Mapbox © OSM	-	
Country (airports.cs	:v)	
City Antwerp	Bertrix	Charleroi
Beauvechain	Brussels	Chievres
Country (airports.cs India	v)	

NUMBER OF AIRPORTS

148

DASHBOARD:2

ICAO (airports.csv)

Country (airports.csv) Afghanistan

AIRPORTS AT HIGHER ALTITUDE WITHIN A COUNTRY

Index	Name (airports.csv)	(
4,589	Fayzabad Airport	
5,328	Bagram Air Base	
5,632	Chakcharan Airport	
5,837	Camp Bastion Airport	
3,837	Camp Bastion Amport	

Top n

AIRPORTS AT HIGHER ALTITUDE IN THE WORLD

Name (airports.csv)	City
Daocheng Yading Airport Qamdo Bangda Airport Kangding Airport	Daocheng
Oamdo Banada Airport	Bangda
Kangding Airport	Bangda Kangding
Ngari Gunsa Airport El Alto International Airport Capitan Nicolas Rojas Airport Yushu Batang Airport Copacabana Airport	Shiquanhe
El Alto International Airport	La Paz
Capitan Nicolas Rojas Aírport	Potosi
Yushu Batang Airport	Yushu
Copacabana Airport	Copacabana
Inca Manco Capac International Ai Golog Magin Airport	Juliaca
Golog Magin Airport	Golog
Syangboche Airport	Svandboche
Juan Mendoza Airport	Oruro
Syangboche Airport Juan Mendoza Airport Lhasa Gonggar Airport	Lhasa
Hongyuan Airport La Quiaca Airport	Ngawa
La Quìaca Airport	Laboulave

DASHBOARD:3

Active

Country

AIRLINES WITHIN A COUNTRY

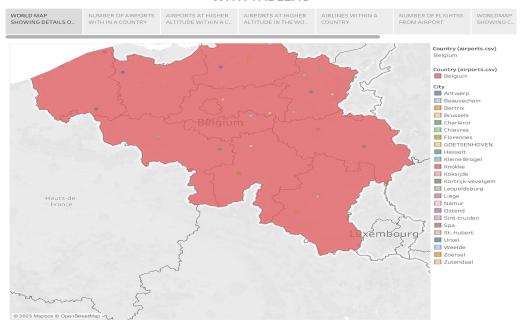


NUMBER OF FLIGHTS FROM AIRPORT



STORY

UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU



UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU

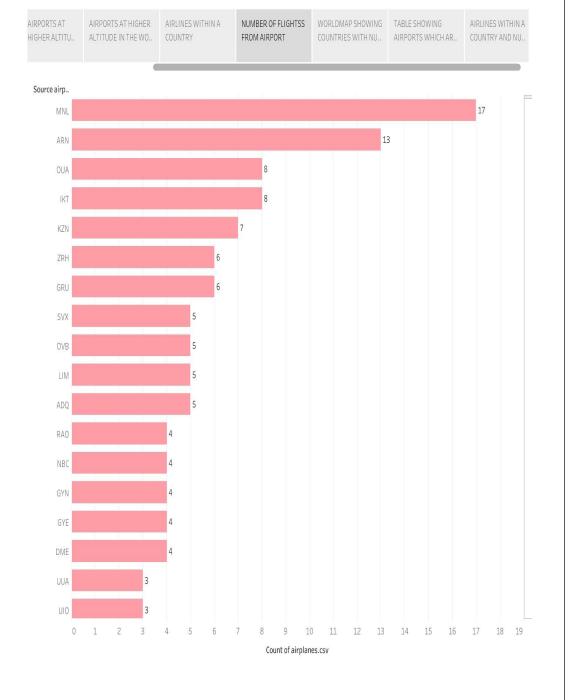
WORLD MAP SHOWING DETAILS O	NUMBER OF AIRPORTS WITH IN A COUNTRY	AIRPORTS AT HIGHER ALTITUDE WITHIN A C	AIRPORTS AT HIGHER ALTITUDE IN THE WO	AIRLINES WITHIN A COUNTRY	NUMBER OF FLIGHTSS FROM AIRPORT	WORLDMAP SHOWING C

Country (airports.csv

WORLD MAP SHOWING DE	TAILS O	NUMBER OF AIRPORTS WITH IN A COUNTRY	AIRPORTS AT HIGHER ALTITUDE WITHIN A C	AIRPORTS AT HIGHER ALTITUDE IN THE WO	AIRLINES WITHIN A COUNTRY	NUMBER OF FLIGHTSS FROM AIRPORT	WORLDMAP SHOWING C
Index 1,978		e (airports.csv)	City Herat	ICAO (airports.csv)	3,206	ICAO (airport	
1,980	Ham Airpi	id Karzai International ort	Kabul	OAKB	5,877	Country (airports.csv Afghanistan Top n	
4,589	Fayz	abad Airport	Faizabad	OAFZ	3,872	1	
5,328	Bagr	ram Air Base	Kabul	OAIX	4,895		
5,632	Chak	charan Airport	Chaghcharan	OACC	7,383		
5,837	Cam	p Bastion Airport	Camp Bastion	OAZI	2,943		

WORLD MAP SHOWING DETAI	NUMBER OF AIR WITH IN A COUN		AIRPORTS AT HIGHER ALTITUDE WITHIN A C	RPORTS AT HIGHER TITUDE IN THE WO	AIRLINES WITHIN A COUNTRY	NUMBER OF FLIGHTSS FROM AIRPORT	WORLDMAP SHOWING COUNTR.
Name (airports.c	sv)	City		ICAO (airports.csv)			
Daocheng Yading	Airport	Daoche	ng	ZUDC			14,472
Qamdo Bangda A	irport	Bangda		ZUBD			14,219
Kangding Airport		Kangdii	ng	ZUKD			14,042
Ngari Gunsa Airp	ort	Shiquar	nhe	ZUAL			14,022
El Alto Internatio	onal Airport	La Paz		SLLP			13,355
Capitan Nicolas R	Rojas Airport	Potosi		SLPO			12,913
Yushu Batang Air	port	Yushu		ZYLS			12,816
Copacabana Airp	ort	Copaca	bana	SLCC			12,591
Inca Manco Capa Airport	c International	Juliaca		SPJL			12,552
Golog Maqin Airp	oort	Golog		ZLGL			12,426
Syangboche Airp	ort	Syangb	oche	VNSB			12,400
Juan Mendoza Aii	rport	Oruro		SLOR			12,152
Lhasa Gonggar Ai	irport	Lhasa		ZULS			11,713
Hongyuan Airpor	t	Ngawa		ZUHY			11,600
La Quiaca Airport		Laboula	aye	SAOL			11,414

JMBER OF RPORTS WITH	AIRPORTS AT H		AIRPORTS AT HIGHER ALTITUDE IN THE WO	AIRLINES WITHIN A COUNTRY	NUMBER OF FLIGHTSS FROM AIRPORT	WORLDMAP SHOWING COUNTRIES WITH NU	TABLE SHOWING AIRPORTS WHICH
Airline ID (a	Name	Icao	Callsign			Active	
218	Air India Limited	AIC	AIRINDIA			N V	
241	Air Sahara	RSH	SAHARA				
569	Air India Express	AXB	EXPRESS INDIA			Count India	у
2575	Go Air	GOW	GOAIR				
2850	IndiGo Airlines	IG0	IFLY			Active Y	
2853	Indian Airlines	IAC	INDAIR				
3000	Jet Airways	JAI	JET AIRWAYS				
3142	Kingfisher Airlines	KFR	KINGFISHER				
3907	Paramount Airways	PMW	PARAWAY				
4375	Spicejet	SEJ	SPICEJET				
13105	Air India Regional	/N	ALLIED				
13106	MDLR Airlines	/N	MDLR				
13107	Jagson Airlines	JGN	JAGSON				
16327	Indya Airline Group	IG1	Indya1				
16362	OCEAN AIR CARGO	IXO	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				



AIRPORTS AT HIGHER HIGHER ALTI.. ALTITUDE IN THE WO.. AIRLINES WITHIN A COUNTRY FROM AIRPORT WORLDMAP SHOWING COUNTRIES WITH NU.. TABLE SHOWING AIRPORTS WHICH AR.. COUNTRY AND NUMB..

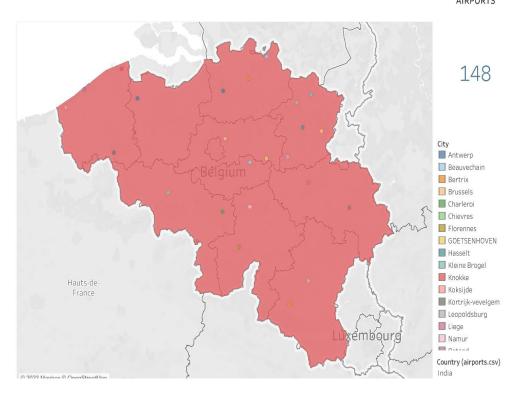
WORLD MAP SHOWING DETAILS OF ALL AIRPORTS WITH IN A COUNTRY

Country (airports.csv) Belgium

Country (airports.csv)

Belgium

NUMBER OF AIRPORTS



AIRPORTS AT AIRPORTS AT HIGHER AIRLINES WITHIN A NUMBER OF FLIGHTSS WORLDMAP SHOWING TABLE SHOWING HIGHER ALTI.. ALTITUDE IN THE WO.. COUNTRY

FROM AIRPORT COUNTRIES WITH NU.. AIRPORTS WHICH AR..

AIRLINES WITHIN A COUNTRY AND NUMB..

AIRPORTS AT HIGHER ALTITUDE WITHIN A COUNTRY

Index	Name (airports.csv)	City	ICAO (airports.csv)	
1,978	Herat Airport	Herat	OAHR	3,206
1,980	Hamid Karzai International Airport	Kabul	OAKB	5,877
4,589	Fayzabad Airport	Faizəbad	OAFZ	3,872
5,328	Bagram Air Base	Kabul	OAIX	4,895
5,632	Chakcharan Airport	Chaghcharan	OACC	7,383
5,837	Camp Bastion Airport	Camp Bastion	OAZI	2,943

ICAO (airports.csv)

Country (airports.csv) Afghanistan

Top n

AIRPORTS AT HIGHER ALTITUDE IN THE WORLD

Name (airports.csv)	City	ICAO (airports.csv)	
Daocheng Yading Airport	Daocheng	ZUDC	
Qamdo Bangda Airport	Bangda	ZUBD	
Kangding Airport	Kangding	ZUKD	
Ngari Gunsa Airport	Shiquanhe	ZUAL	
El Alto International Airport	La Paz	SLLP	
Capitan Nicolas Rojas Airport	Potosi	SLPO	
Yushu Batang Airport	Yushu	ZYLS	
Copacabana Airport	Copacabana	SLCC	
Inca Manco Capac International Ai	Juliaca	SPJL	
Golog Maqin Airport	Golog	ZLGL	
Syangboche Airport	Syangboche	VNSB	
Juan Mendoza Airport	Oruro	SLOR	
Lhasa Gonggar Airport	Lhasa	ZULS	
Hongyuan Airport	Ngawa	ZUHY	
La Quiaca Airport	Laboulaye	SAOL	

HIGHER ALTI.. ALTITUDE IN THE WO..

AIRPORTS AT AIRPORTS AT HIGHER

COUNTRY

FROM AIRPORT

NUMBER OF FLIGHTSS WORLDMAP SHOWING TABLE SHOWING COUNTRIES WITH NU..

AIRPORTS WHICH AR..

AIRLINES WITHIN A COUNTRY AND NUMB..

Active AIRLINES WITHIN A COUNTRY NUMBER OF FLIGHTS FROM AIRPORT N JY Airline ID (a.. Name Callsign Source airp... Icao 218 Air India Li.. AIC AIRINDIA MNL Country SAHARA 241 Air Sahara RSH 13 ARN India EXPRESS INDIA Air India Ex.. AXB 569 OUA Active Y 2575 Go Air GOAIR IFLY 2850 IndiGo Airli.. IGO KZN 2853 Indian Airli.. IAC INDAIR ZRH 3000 Jet Airways JAI JET AIRWAYS KINGFISHER Kingfisher.. KFR 3142 PARAWAY Paramount .. PMW 3907 4375 Spicejet SEJ SPICEJET Air India Re., \N ALLIED 13105 MDLR Airlin., \N MDLR 13106 13107 Jagson Airli.. JGN JAGSON 16327 Indya Airlin.. IG1 Indya1 OCEAN AIR .. IXO Null 16362 16901 12 North N12 19451 Air Costa \N Null 20264 Air Vistara VTI Null 20286 Air Pegasus PPL Null UUA 0 10 15 20 21270 Air Carnival \N Null Count of airplanes.csv

4. ADVANTAGES & DISADVANTAGES

ADVANTAGES	DISADVANTAGES
Deliver items quickly over long distance.	 Flights are subjected to delay or cancellation.
➤ Be used for a range of goods.	You will need to pay text at each airport you use.
Five you high levels of security for sensitive items.	Fuel and currently surcharges will usually be added to costs.
➤ It flows the shortest and direct routes as seas, ,mountains and forests.	Air transport can involve higher costs than other option and is not suitable all goods.
➤ It is if fastest mode of transports and thus it is the most suitable mean where tim3e is an important factor.	Further transportation may be need from the destinations.

5 APPLICATION

- ◆ Tableau can be applied airport data to understand passenger flows, operational efficiency and performance metrics.
- ◆ This analysis can help airports improve infrastructure planning optimize resource allocation, and exchange the overall travel experience for passenger .
- ◆ Tableau can also be used for analyzing safety and security data in the air transportation network .
- ◆ Tableau allows airlines to monitor and analysis operational data in realness.
- ◆ Air transportation data in tableau you can identify optimal flight routes based on factors like passengers demand, profitability and time efficiency.

6 CONCLUSION

- The 21st century has seen the continued internationalization and globalization of the worlds economy.
- Air transport has played a part in fostering this development, but air lines and to a greater degree, ai transport infrastructure as to respond to change in demands for its services.
- Tableau empowers stakeholders to unlock valuable insights from air transportation data.
- This analysis help identify patterns access risks, and implement proactive measure the enhance safety and secure standards.

7 FUTURE SCOPE

- ❖ Integration of Real-time Data: Incorporating real-time data feeds into Tableau can provide up-to-date insights on flight statuses, passenger flows, and operational performance. This would enable stakeholders to monitor and respond to events in real-time, improving decision-making and operational efficiency.
- ♦ Predictive Analytics: Applying predictive analtics techniques in Tableau can help forecast future trends, demand patterns, and potential disruptions in the air transportation network. This can facilitate proactive decision-making, optimize resource allocation, and mitigate risks.
- ♦ Enhanced Collaboration and Reporting: Tableau can be further enhanced to support collaborative features, enabling multiple stakeholders to collaborate on data analysis and share insights more effectively. Additionally, more advanced reporting capabilities can be developed to automate the generation of insightful reports for different stakeholders.
- ❖ Integration with External Data Sources: Integrating Tableau with external data sources, such as weather data, social media sentiment analysis, or economic indicators, can provide a more comprehensive context for analysis. This integration can yield insights into factors that influence passenger behavior, operational performance, and overall market trends.

