UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK

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 detailed time zone and daylight saving time data. Additionally, this includes information about airlines including their IDs, name aliases, IATA and ICAO codes, callsigns country of origin and active/inactive status. Similarly, it also covers route details such as airline sources to destination airports along with essential details like codeshare stakeholder if any stops required during this journey along with the type of aircraft being used for that particular journey.

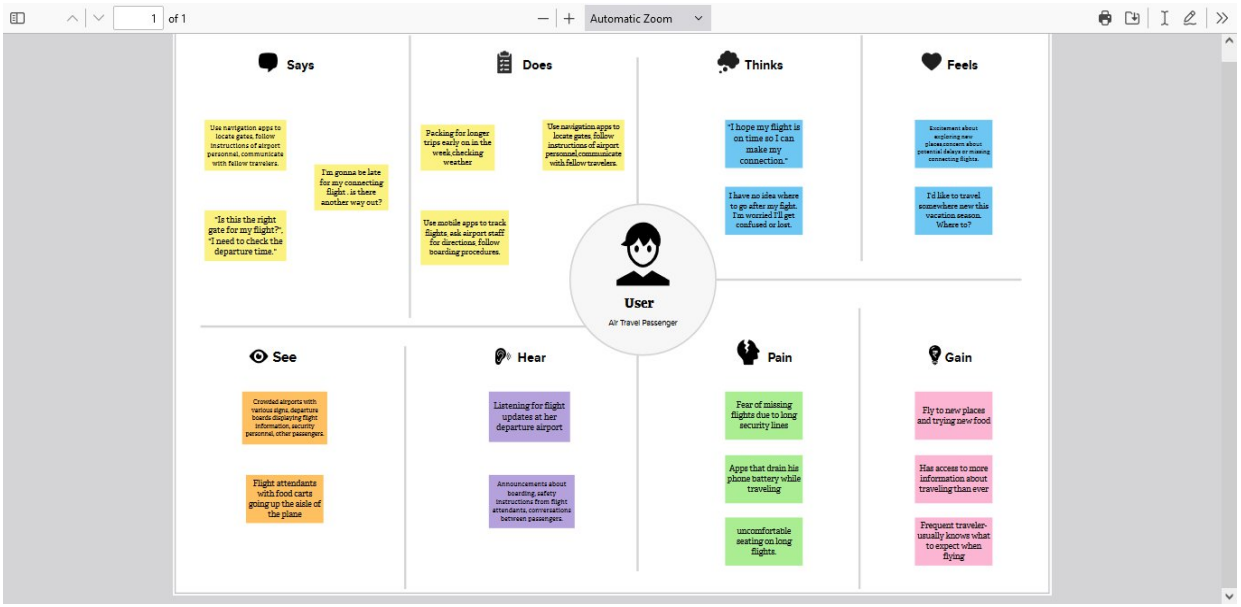
1.2 PURPOSE

- The air transportation network facilitates international trade by connecting manufacturers, exporters, and importers across the world. It enables the quick and efficient exchange of goods, contributing to global economic growth.

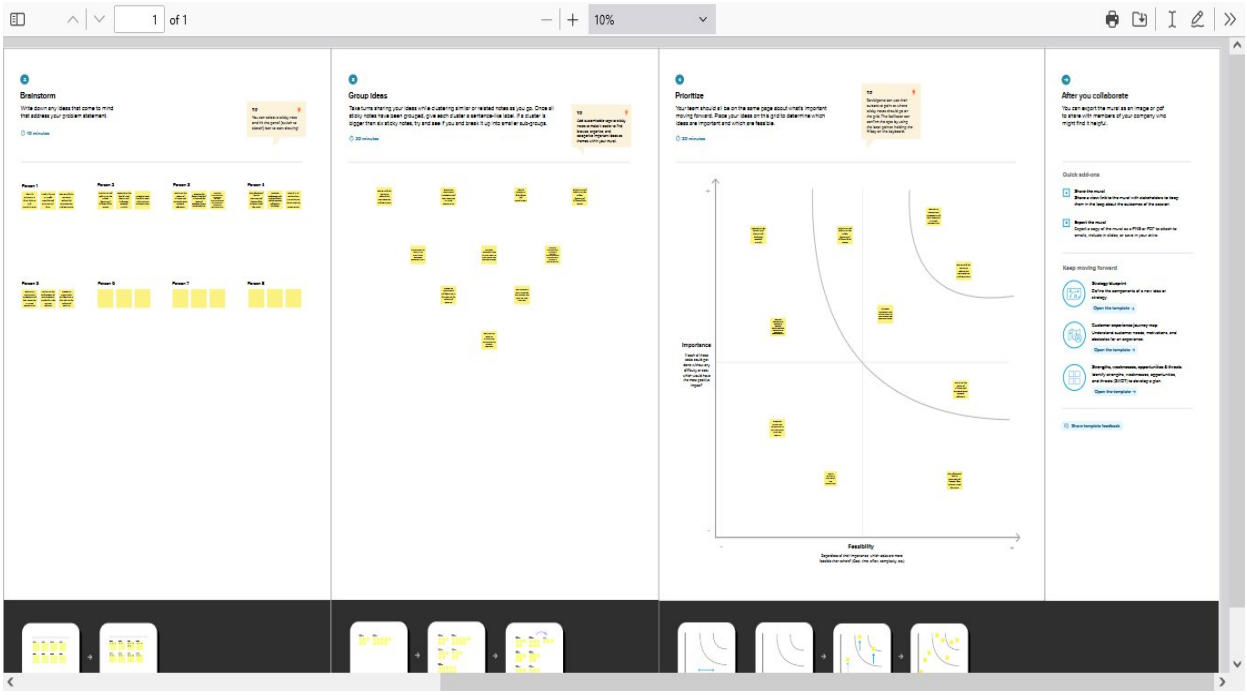
- Airports and aviation-related industries create jobs and stimulate economic growth in regions where they are located. They also drive the development of businesses related to travel and tourism, including hotels, restaurants, and transportation services.

PROBLEM DEFINATION AND DESIGN THINKING

2.1 EMPATHY MAP

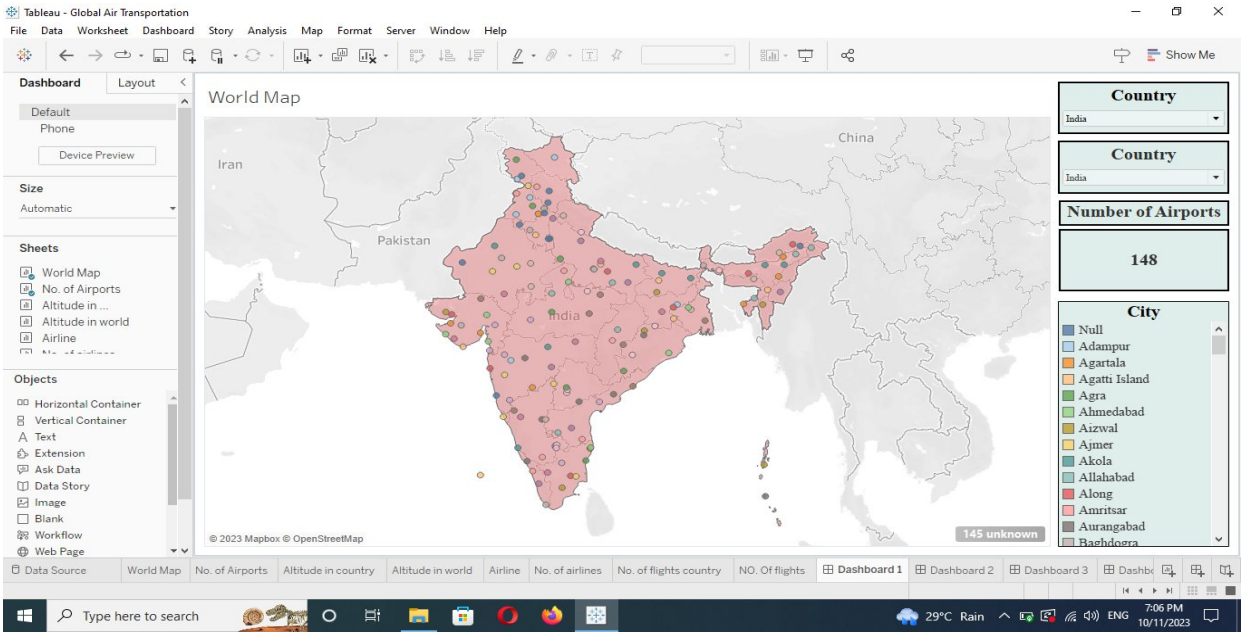


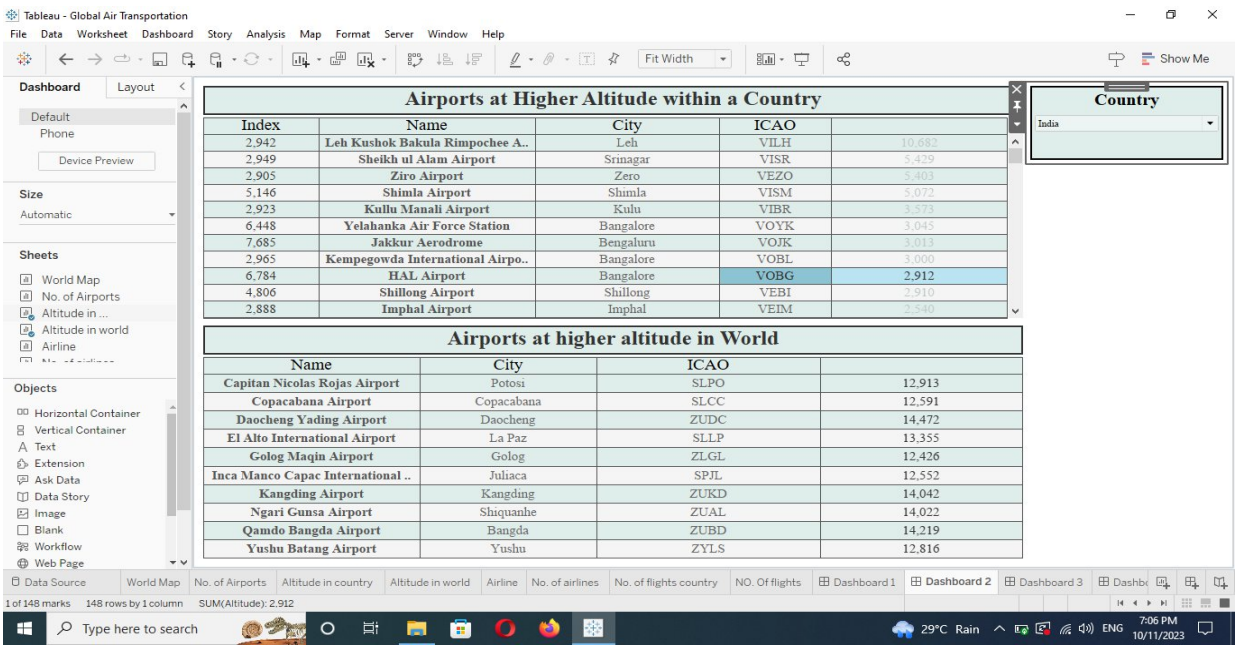
2.2 IDEATION & BRAINSTORMING MAP



RESULT

3.1 DASHBOARD





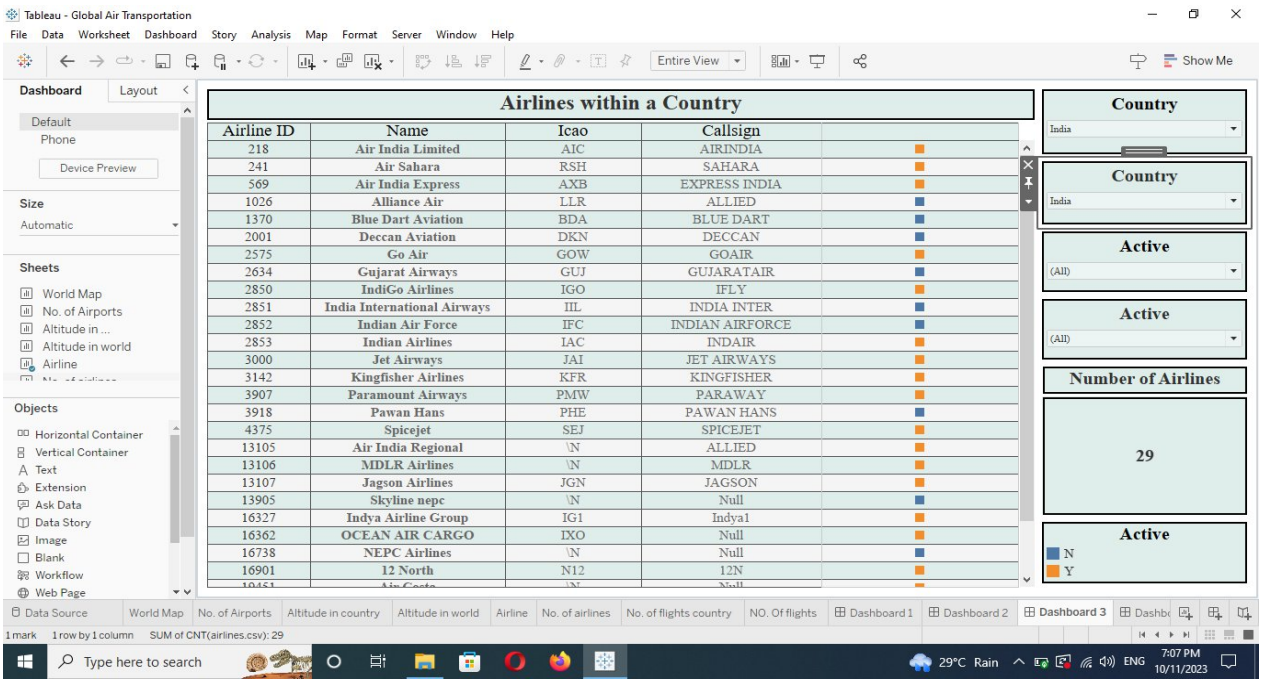


Tableau - Global Air Transportation
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
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World Map
No. of Airports
Altitude in ...
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Airline
Objects
Horizontal Container
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Airlines within a Country
Airline ID | Name | Icao | Callsign
218 | Air India Limited | AIC | AIRINDIA
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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
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Airline
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Dashboard 2
Dashboard 3
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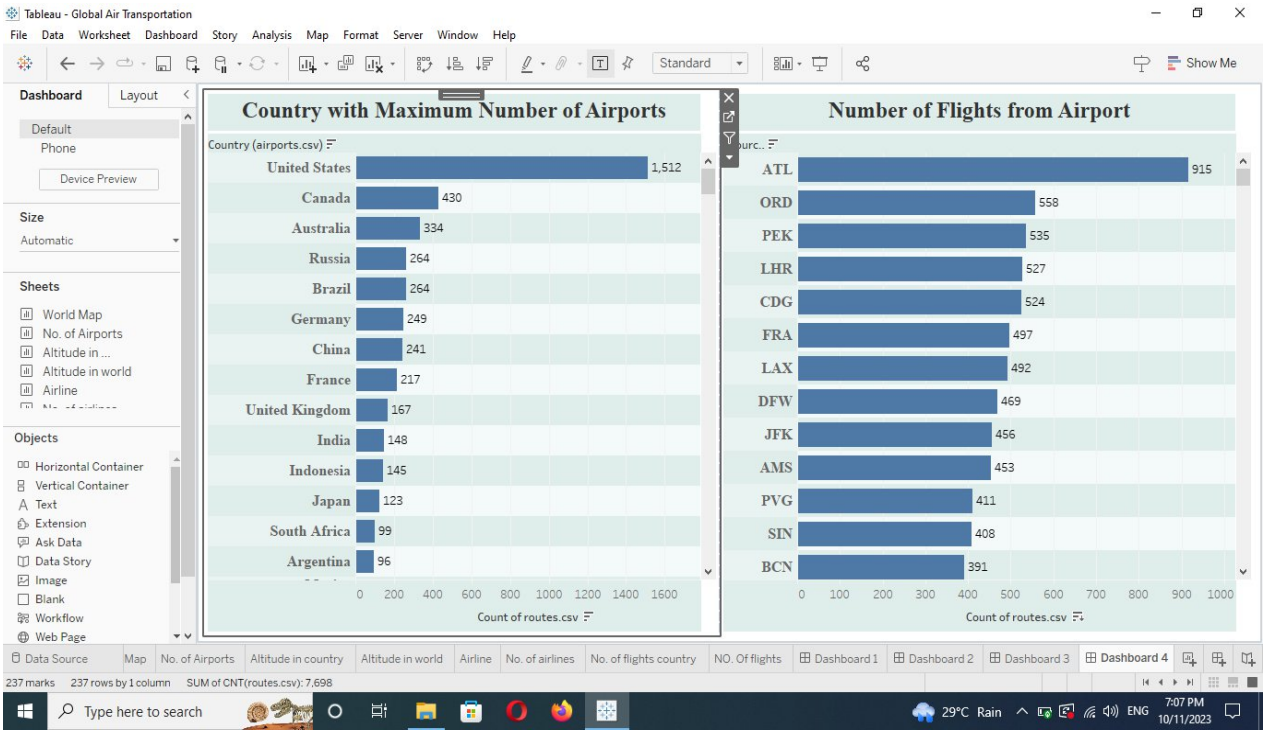
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World Map
No. of Airports
Altitude in ...
Altitude in world
Airline
Objects
Horizontal Container
Vertical Container
Text
Extension
Ask Data
Data Story
Image
Blank
Workflow
Web Page
Country with Maximum Number of Airports
Country (airports.csv)
United States 1,512
Canada 430
Australia 334
Russia 264
Brazil 264
Germany 249
China 241
France 217
United Kingdom 167
India 148
Indonesia 145
Japan 123
South Africa 99
Argentina 96
0 200 400 600 800 1000 1200 1400 1600
Count of routes.csv
Number of Flights from Airport
ATL 915
ORD 558
PEK 535
LHR 527
CDG 524
FRA 497
LAX 492
DFW 469
JFK 456
AMS 453
PVG 411
SIN 408
BCN 391
0 100 200 300 400 500 600 700 800 900 1000
Count of routes.csv
Data Source
Map
No. of Airports
Altitude in country
Altitude in world
Airline
No. of airlines
No. of flights country
NO. Of flights
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Dashboard 4
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3.2 STORY

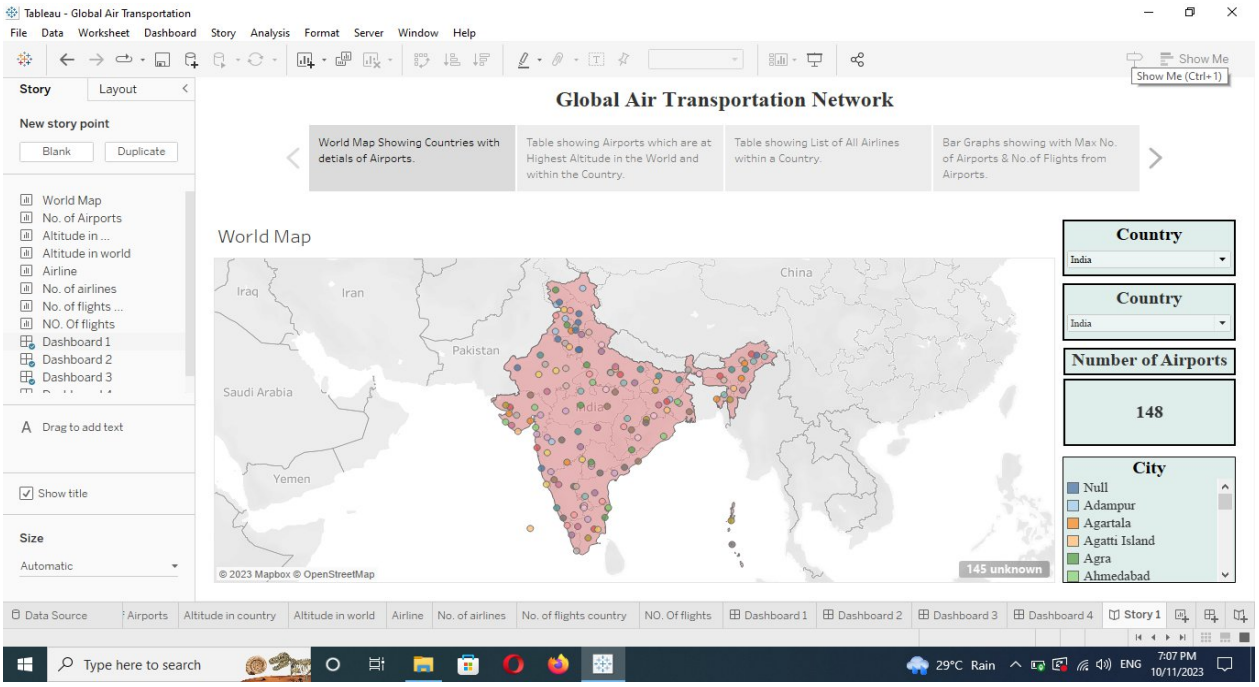
Tableau - Global Air Transportation
File Data Worksheet Dashboard Story Analysis Format Server Window Help
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World Map
No. of Airports
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Altitude in world
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No. of airlines
No. of flights ...
NO. Of flights
Dashboard 1
Dashboard 2
Dashboard 3
Drag to add text
Show title
Size
Automatic
Global Air Transportation Network
World Map Showing Countries with detials of Airports.
Table showing Airports which are at Highest Altitude in the World and within the Country.
Table showing List of All Airlines within a Country.
Bar Graphs showing with Max No. of Airports & No.of Flights from Airports.
World Map
Iraq
Iran
China
Pakistan
Saudi Arabia
India
Yemen
© 2023 Mapbox © OpenStreetMap
145 unknown
Country
India
Country
India
Number of Airports
148
City
Null
Adampur
Agartala
Agatti Island
Agra
Ahmedabad
Data Source
Airports
Altitude in country
Altitude in world
Airline
No. of airlines
No. of flights country
NO. Of flights
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1
Type here to search
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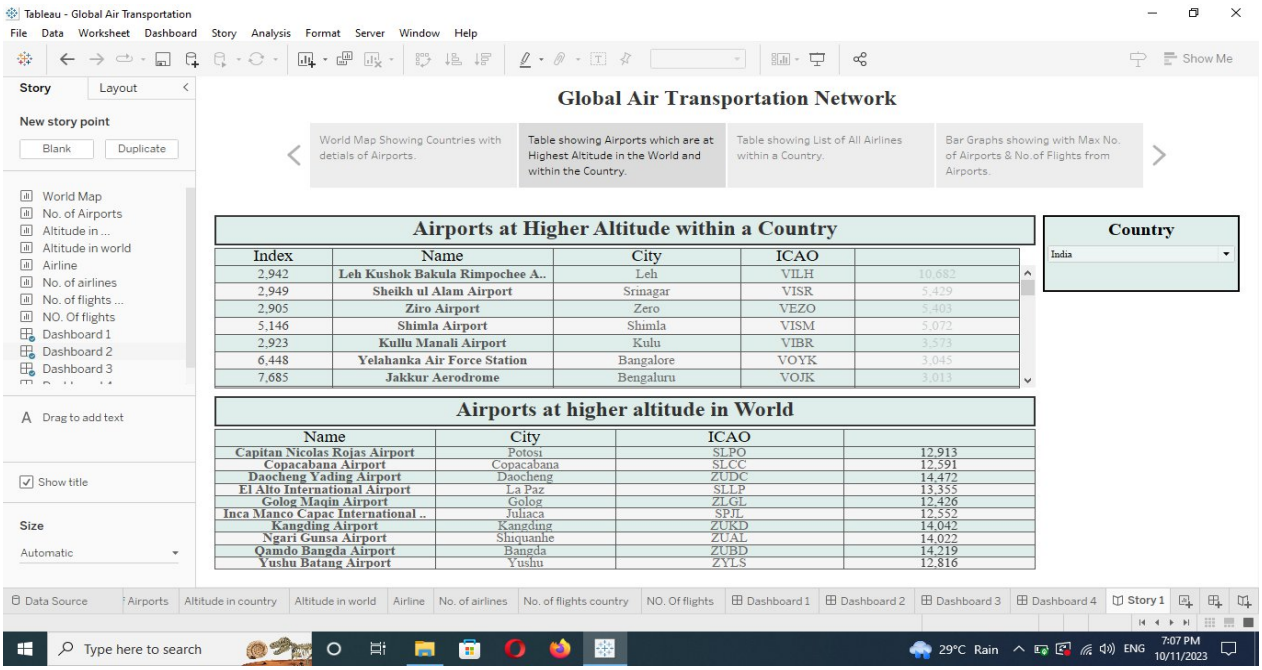
10/11/2023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File Data Worksheet Dashboard Story Analysis Format Server Window Help
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New story point
Blank
Duplicate
World Map
No. of Airports
Altitude in ...
Altitude in world
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No. of airlines
No. of flights ...
NO. Of flights
Dashboard 1
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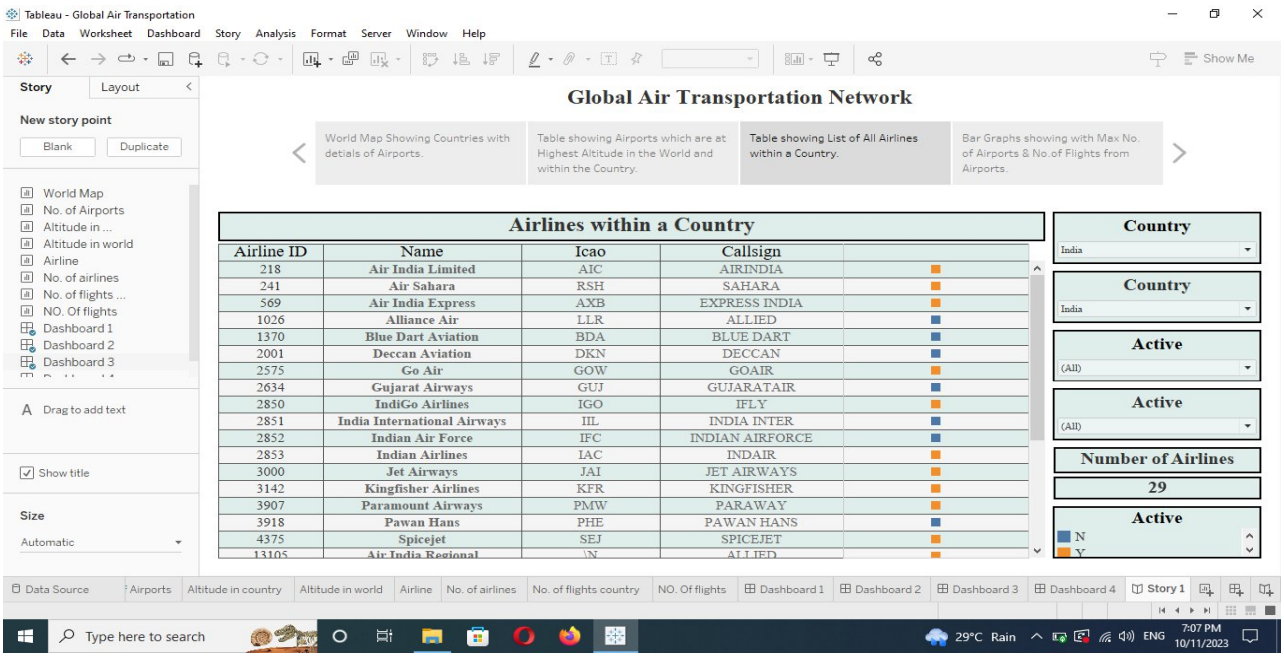
Airports at Higher Altitude within a Country
Index | Name | City | ICAO
2,942 | Leh Kushok Bakula Rimpochee A.. | Leh | VILH | 10,682
2,949 | Sheikh ul Alam Airport | Srinagar | VISR | 5,429
2,905 | Ziro Airport | Zero | VEZO | 5,403
5,146 | Shimla Airport | Shimla | VISM | 5,072
2,923 | Kullu Manali Airport | Kulu | VIBR | 3,573
6,448 | Yelahanka Air Force Station | Bangalore | VOYK | 3,045
7,685 | Jakkur Aerodrome | Bengaluru | VOJK | 3,013
Country
India
Airports at higher altitude in World
Name | City | ICAO
Capitan Nicolas Rojas Airport | Potosi | SLPO | 12,913
Copacabana Airport | Copacabana | SLCC | 12,591
Daocheng Yading Airport | Daocheng | ZUDC | 14,472
El Alto International Airport | La Paz | SLLP | 13,355
Golog Maqin Airport | Golog | ZLGL | 12,426
Inca Manco Capac International .. | Juliaca | SPJL | 12,552
Kangding Airport | Kangding | ZUKD | 14,042
Ngari Gunsa Airport | Shiquanhe | ZUAL | 14,022
Qamdo Bangda Airport | Bangda | ZUBD | 14,219
Yushu Batang Airport | Yushu | ZYLS | 12,816
Data Source
Airports
Altitude in country
Altitude in world
Airline
No. of airlines
No. of flights country
NO. Of flights
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1
Type here to search
29°C Rain
ENG
7:07 PM
10/11/2023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13105 | Air India Regional | \N | ALLIED
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Number of Airlines
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World Map
No. of Airports
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Dashboard 1
Dashboard 2
Dashboard 3
Drag to add text
Show title
Size
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Data Source
Airports
Altitude in country
Altitude in world
Airline
No. of airlines
No. of flights country
NO. Of flights
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1
Type here to search
29°C Rain
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7:07 PM
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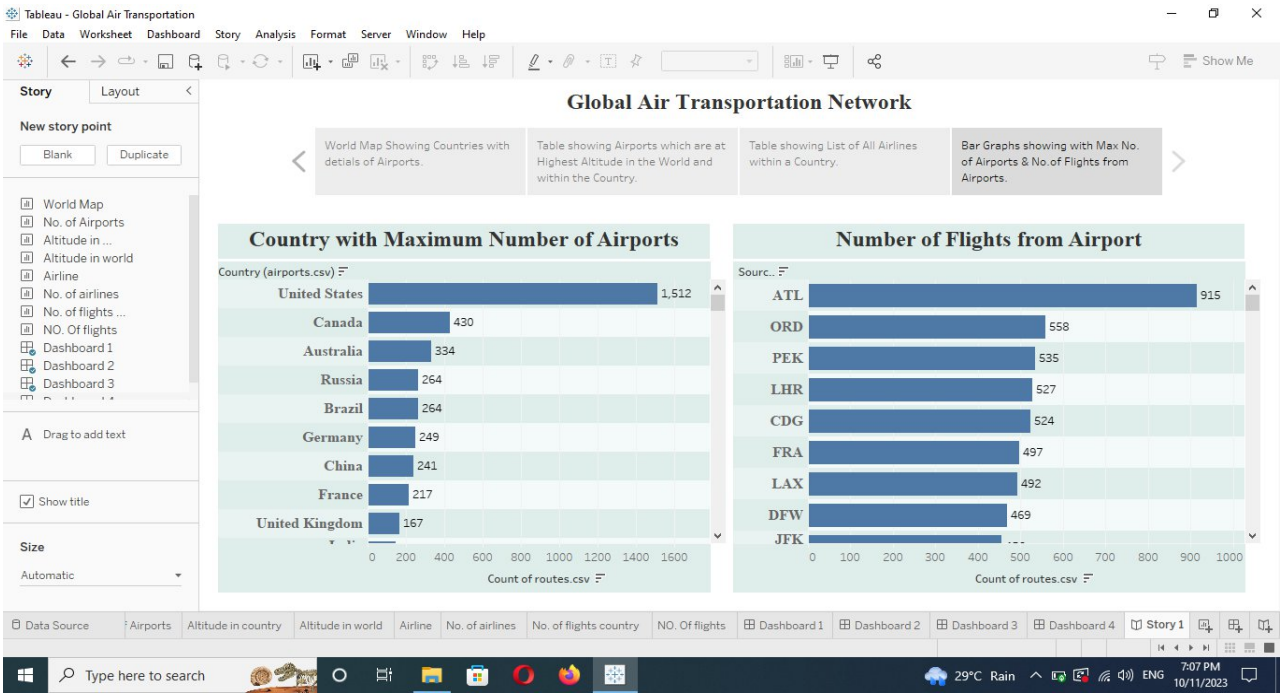
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United States 1,512
Canada 430
Australia 334
Russia 264
Brazil 264
Germany 249
China 241
France 217
United Kingdom 167
0 200 400 600 800 1000 1200 1400 1600
Count of routes.csv
Number of Flights from Airport
Sourc..
ATL 915
ORD 558
PEK 535
LHR 527
CDG 524
FRA 497
LAX 492
DFW 469
JFK
0 100 200 300 400 500 600 700 800 900 1000
Count of routes.csv
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World Map
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Data Source
Airports
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Airline
No. of airlines
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Dashboard 1
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Story 1
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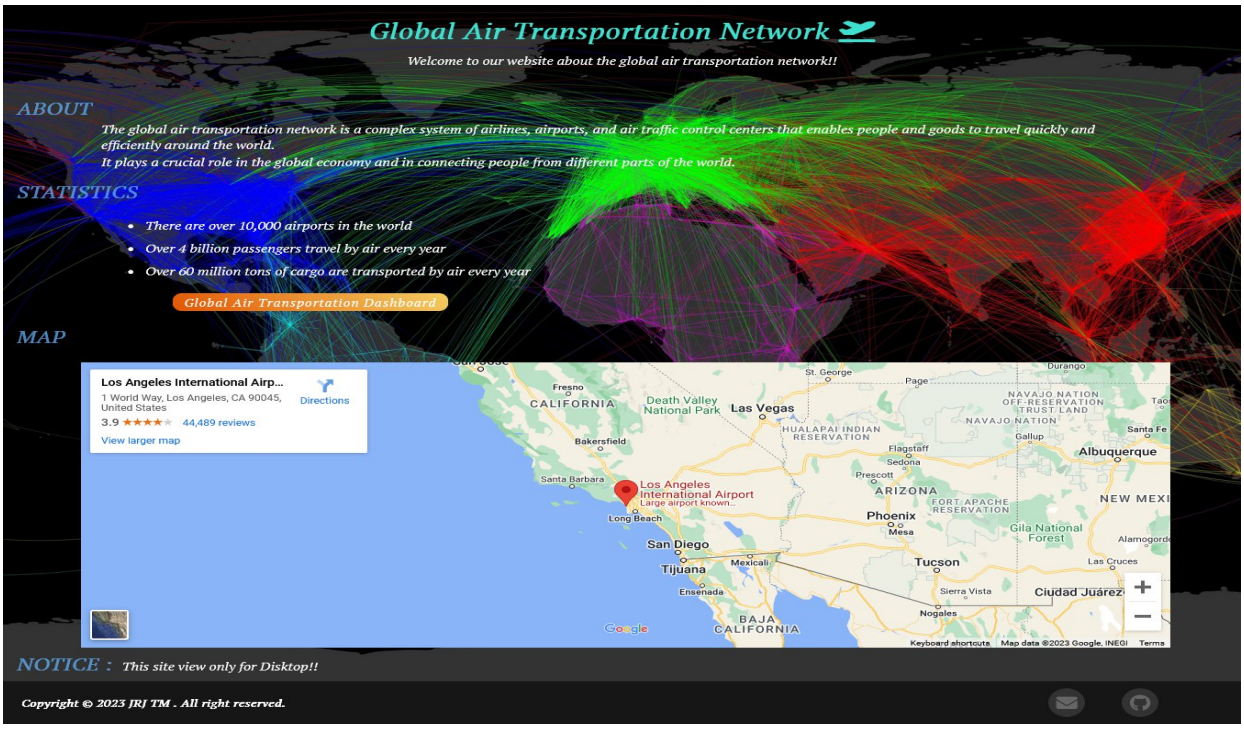
WEBSITE


Global Air Transportation Network
Welcome to our website about the global air transportation network!!
ABOUT
The global air transportation network is a complex system of airlines, airports, and air traffic control centers that enables people and goods to travel quickly and efficiently around the world.
It plays a crucial role in the global economy and in connecting people from different parts of the world.
STATISTICS
There are over 10,000 airports in the world
Over 4 billion passengers travel by air every year
Over 60 million tons of cargo are transported by air every year
Global Air Transportation Dashboard
MAP
Los Angeles International Airp...
1 World Way, Los Angeles, CA 90045, United States
3.9 44,489 reviews
Directions
View larger map
Los Angeles International Airport
Large airport known...
Long Beach
San Diego
Tijuana
Mexicali
Ensenada
Phoenix
Tucson
Albuquerque
Las Vegas
Death Valley National Park
Bakersfield
Fresno
Santa Barbara
Flagstaff
Sedona
Prescott
Sierra Vista
Nogales
Ciudad Juárez
Las Cruces
Gila National Forest
CALIFORNIA
ARIZONA
BAJA CALIFORNIA
NOTICE : This site view only for Disktop!!
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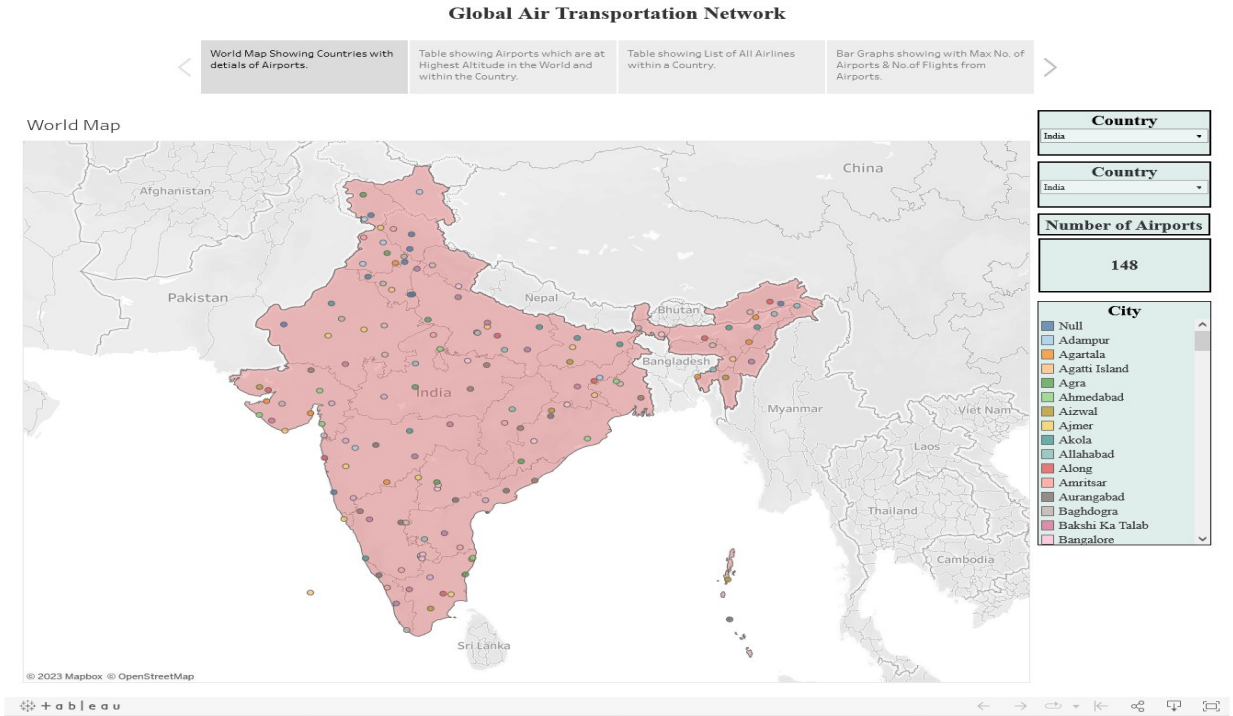
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World Map
China
Afghanistan
Pakistan
Nepal
Bhutan
Bangladesh
India
Myanmar
Viet Nam
Laos
Thailand
Cambodia
Sri Lanka
© 2023 Mapbox © OpenStreetMap
Country
India
Country
India
Number of Airports
148
City
Null
Adampur
Agartala
Agatti Island
Agra
Ahmedabad
Aizwal
Ajmer
Akola
Allahabad
Along
Amritsar
Aurangabad
Baghdogra
Bakshi Ka Talab
Bangalore
+ableau

Global Air Transportation Network

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7,685	Jakkur Aerodrome	Bengaluru	VOJK	3,013
2,965	Kempegowda International Airpo..	Bangalore	VOBL	3,000
6,784	HAL Airport	Bangalore	VOBG	2,912
4,806	Shillong Airport	Shillong	VEBI	2,910
2,888	Imphal Airport	Imphal	VEIM	2,540
5,144	Kangra Airport	Kangra	VIGG	2,525
2,842	Belgaum Airport	Belgaum	VABM	2,487
5,784	Mysore Airport	Mysore	VOMY	2,349
2,967	Bidar Air Force Station	Bidar	VOBR	2,178
4,802	Hubli Airport	Hubli	VAHB	2,171
2,901	Birsa Munda Airport	Ranchi	VERC	2,148

Country: India

Airports at higher altitude in World

Name	City	ICAO	
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Golog Maqin Airport	Golog	ZLGL	12,426
Inca Manco Capac International ..	Juliaca	SPJL	12,552
Kangding Airport	Kangding	ZUKD	14,042
Ngari Gunsa Airport	Shiquanhe	ZUAL	14,022
Qamdo Bangda Airport	Bangda	ZUBD	14,219
Yushu Batang Airport	Yushu	ZYLS	12,816

Global Air Transportation Network

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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

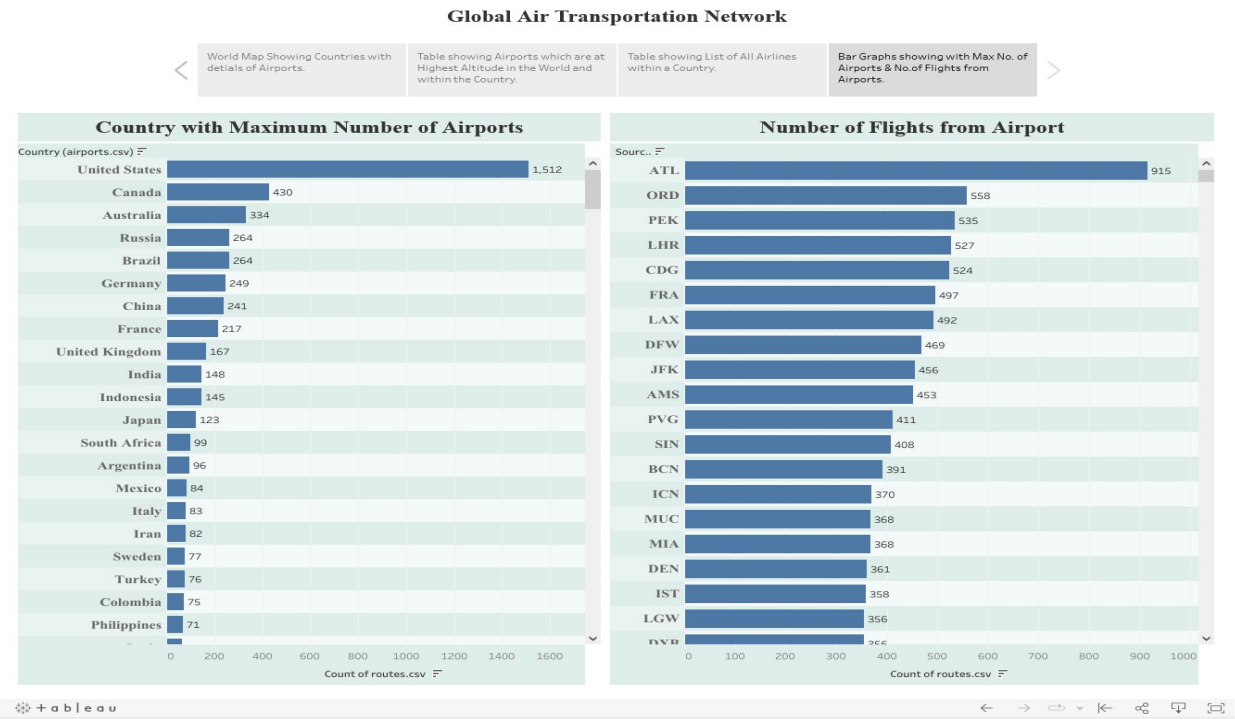
Country: India

Active: (All)

Active: (All)

Number of Airlines: 29

Active: N, Y



The above graph and visualizations show us a clear view about the data.

ADVANTAGES

- **Speed and Efficiency:** Air travel is one of the fastest and most efficient modes of transportation for both passengers and cargo. It allows people and goods to reach their destinations quickly, making it essential for time-sensitive needs.
- **Global Connectivity:** Air travel connects cities, countries, and regions across the world, promoting international trade, tourism, and cultural exchange. It facilitates global communication and cooperation.

DISADVANTAGE

- **Environmental Impact:** Air travel is a major contributor to greenhouse gas emissions, primarily through the burning of fossil fuels. This contributes to climate change and air pollution.
- **High Costs:** Air travel can be expensive, making it less accessible to some people. Airline ticket prices can vary significantly, and additional fees can add to the cost.

APPLICATIONS

- **Passenger Travel:** The most common and visible application is the transportation of passengers for business, leisure, and personal purposes. Air travel provides a fast and efficient means of covering long distances, connecting people worldwide.

- **Cargo Transport:** The transportation of cargo via air is essential for industries that require quick and reliable delivery, such as shipping high-value goods, perishable items, medical supplies, and electronics. Cargo airlines play a vital role in global trade.

- **International Trade:** Air transportation supports global trade by enabling the rapid movement of goods across international borders. It is particularly crucial for time-sensitive shipments and the delivery of high-value, low-volume products.

CONCLUSION

The global air transportation network is a vital and multifaceted component of the modern world, serving numerous purposes and playing a crucial role in connecting people, businesses, and nations across the globe. While it offers many advantages, including speed, efficiency, economic growth, and global connectivity, it also presents several challenges, such as environmental concerns, cost, and security issues. The network's applications extend far beyond passenger travel and cargo transport, encompassing areas such as emergency response, diplomacy, tourism, research, and more.

FUTURE SCOPE

- **Sustainability:** One of the most pressing issues for the future of air transportation is sustainability. To reduce the environmental impact of aviation, there will likely be a significant push toward developing and adopting more fuel-efficient aircraft, alternative propulsion systems (e.g., electric or hydrogen-powered planes), and sustainable aviation fuels.

- **Digital Transformation:** Technology will continue to drive improvements in air travel. This includes the use of digital platforms and data analytics to optimize airline operations, improve passenger experiences, and enhance safety and security measures.