



**DATA ANALYTICS WITH TABLEAU**

**PROJECT REPORT**

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

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**BELBA NISHI V**

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# **PROJECT REPORT**

## **1.INTRODUCTION**

### **1.1 OVERVIEW**

### **1.2 PURPOSE**

## **2. PROBLEM DEFINITION & DESIGN THINKING**

### **2.1 EMPATHY MAP**

### **2.2 IDEATION & BRAINSTORMING MAP**

## **3 RESULT**

## **4 ADVANTAGES & DISADVANTAGES**

## **5 APPLICATIONS**

## **6 CONCLUSION**

## **7 FUTURE SCOPE**

## **8 PERFORMANCE TESTING**

## **9PUBLISHING LINKS**



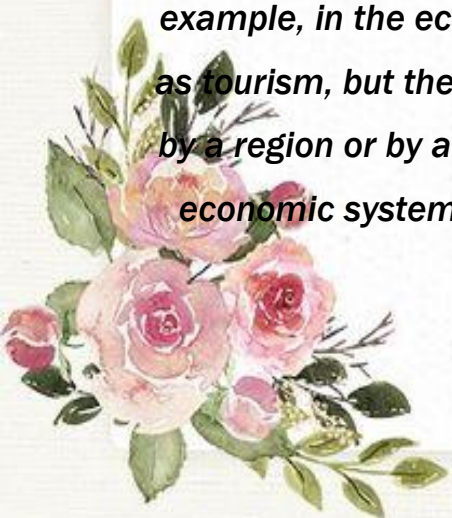
# ***UNLOCKING INSIGHTS INTO THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU***

## **1. INTRODUCTION**



### **1.1 PROJECT DESCRIPTION**

*The air transportation network is one of a country's essential infrastructure assets. It is a vital component for economic development and growth, It provides the only global transportation network for people and goods. Policy -makers must understand that a well-designed air transport network will generate tremendous economic benefits-not just for its users, but also a facilitator of growth and investment across the wider economy. Within the air transport network, each origin airport is connected to a vast number of different destinations via flights to and from 'hub' airports. Business-and the wider economy-benefit from the ability to access both a greater number of destinations and a higher frequency of services than would be possible through disjointed point-to-point services. Air transportation is a major industry in its own right and it also provides important inputs into wider economic, political, and social processes. The demand for its services, as with most transport, is a derived one that is driven by the needs and desires to attain some other, final objective. Air transport can facilitate, for example, in the economic development of a region or of a particular industry such as tourism, but there has to be a latent demand for the goods and services offered by a region or by an industry. Lack of air transport, as with any other input into the economic system, can stymie efficient growth, but equally inappropriateness or excesses in supply.*






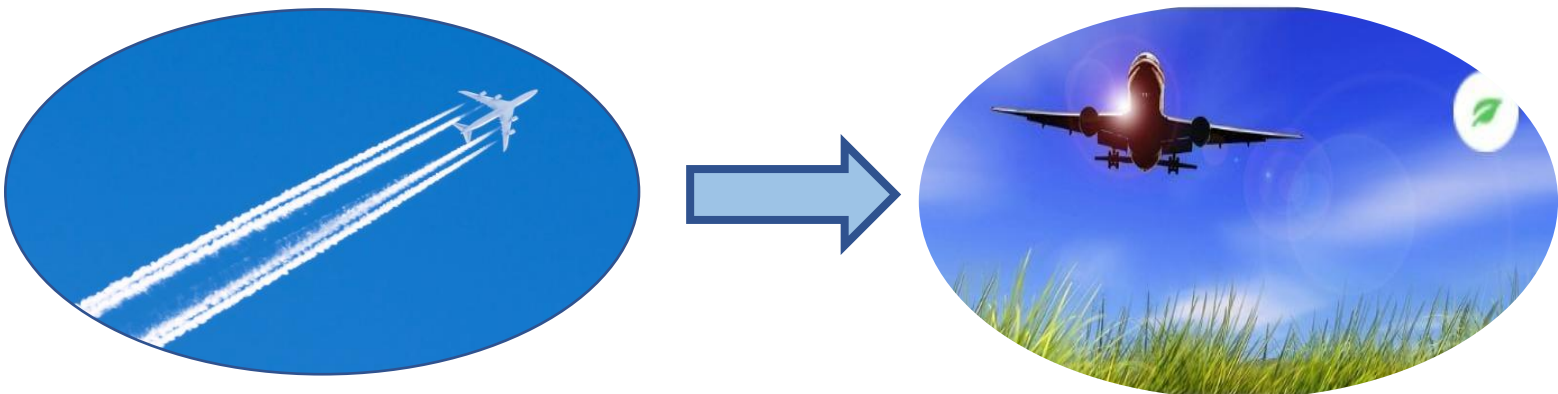
## **1.2 PURPOSE**

**"" The advent of airport cross border integration has shown to be one of the most beneficial ways increasing airport efficient and while also decreasing airport efficiency and while also decreasing environment impact""**

**Greener air travel will depend on these emerging technologies like Electric engines, alternative fuels, and better navigation could reduce CO2 emissions and mitigate the impacts of a global return to the skies. Air transportation increases consumer benefits and choices, creating jobs, and generating numerous socio - economic benefits. Aviation support USD 2.7 trillion in global economic activity and 65.5 million Jobs. Air transport is an import enabler to achieving economic growth and development. Air transport facilitate integration into the global economy and provides vital connectivity on a national, regional and internet scale. It helps to generate trade, promote, tourism and create employment opportunities.**



## **2.PROBLEM DEFINITION AND** **DESIGN THINKING**



*Making airports operate in a greener way has been the leitmotif for airport operators for many years. On one hand, the community demands airports decrease their environmental impact on surrounding neighbourhoods, and on the other hand, communities need well-greased transportation systems to survive and prosper in a globalized world. Unlocking into the Global Air Transportation Network refers to the challenge of achieving effective integration of a country or region into the global aviation network. This involves developing the necessary infrastructure, regulations, and capabilities to connect and participate fully in international air travel. Key aspects include infrastructure development, regulatory compliance, and economic viability.*

# 2.1 EMPATHY MAP





# 2.2 IDEATION & BRAINSTROMING MAP

**Brainstorm & idea prioritization**

Use this template in your own brainstorming sessions as your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

- 6. Brainstorm in person
- 7. Brainstorm in virtual
- 8. All people recommended

**Before you collaborate**

A little bit of preparation goes a long way with this session. Here's what you need to do before going.

- 1. Set agenda

**Brainstorming guidelines**

- 1. Brainstorming is a group activity. It's about generating ideas together.
- 2. Focus on quantity, not quality. The more ideas, the better.
- 3. Don't judge or critique ideas during the session.
- 4. Encourage wild ideas. They often lead to the best solutions.
- 5. Build on each other's ideas. Collaboration is key.

**Define your problem statement**

What problem are you trying to solve? Frame your problem as a clear, specific statement. This is the focus of your brainstorm.

- 1. Write down your problem statement

**Brainstorm**

Write down any ideas that come to mind that address your problem statement.

- 1. Brainstorm

**Group ideas**

Now it's time to share your ideas with others. Group your ideas into clusters. This helps you see patterns and build on each other's ideas.

- 1. Group ideas

**Prioritize**

Now it's time to evaluate your ideas. Use the scoring system to determine which ideas are most important and which are feasible.

- 1. Prioritize

**After you collaborate**

Now you have a list of ideas. It's time to choose the best one. Share your ideas with others and see if you can build on each other's ideas.

- 1. Choose the best idea

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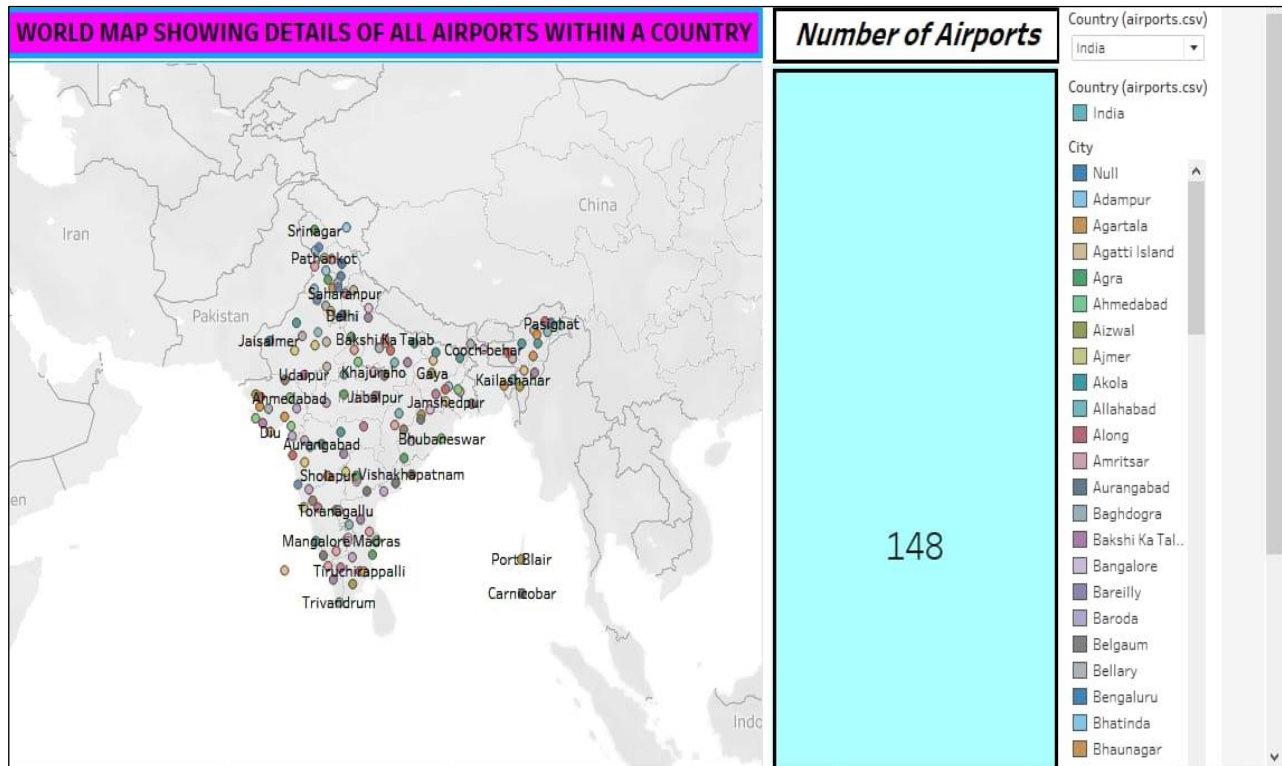
**After you collaborate**

Now you have a list of ideas. It's time to choose the best one. Share your ideas with others and see if you can build on each other's ideas.

- 1. Choose the best idea

# 3 RESULT

## DASHBOARD



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

**Number of Airlines within a Country**

27

Active

- ☒ (All)
- ☒ N
- ☒ Y

Country

Belgium

Active

- ☒ N
- ☒ Y

Highlight Name

Highlight Name

Country

Belgium



Airports at Higher Altitude within the Country				
Index no	Airport Name	City	ICAO CODE	
2,837	Akola Airport	Akola	VAAK	999
2,838	Aurangabad Airport	Aurangabad	VAAU	1,911
2,842	Belgaum Airport	Belgaum	VABM	2,487
2,845	Bhavnagar Airport	Bhaunagar	VABV	44
2,841	Bhuj Airport	Bhuj	VABJ	268
2,840	Bilaspur Airport	Bilaspur	VABI	899
2,839	Chhatrapati Shivaji I..	Mumbai	VABB	39
2,844	Raja Bhoj Internation..	Bhopal	VABP	1,711
2,836	Sardar Vallabhbhai P..	Ahmedabad	VAAH	189
2,843	Vadodara Airport	Baroda	VABO	129

Airports at Higher Altitude in the World			
Airport Name	City	ICAO CODE	
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 Airp..	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

Country (airports.csv)

India

## Country with Maximum Number of Airports

Country (airports.csv)

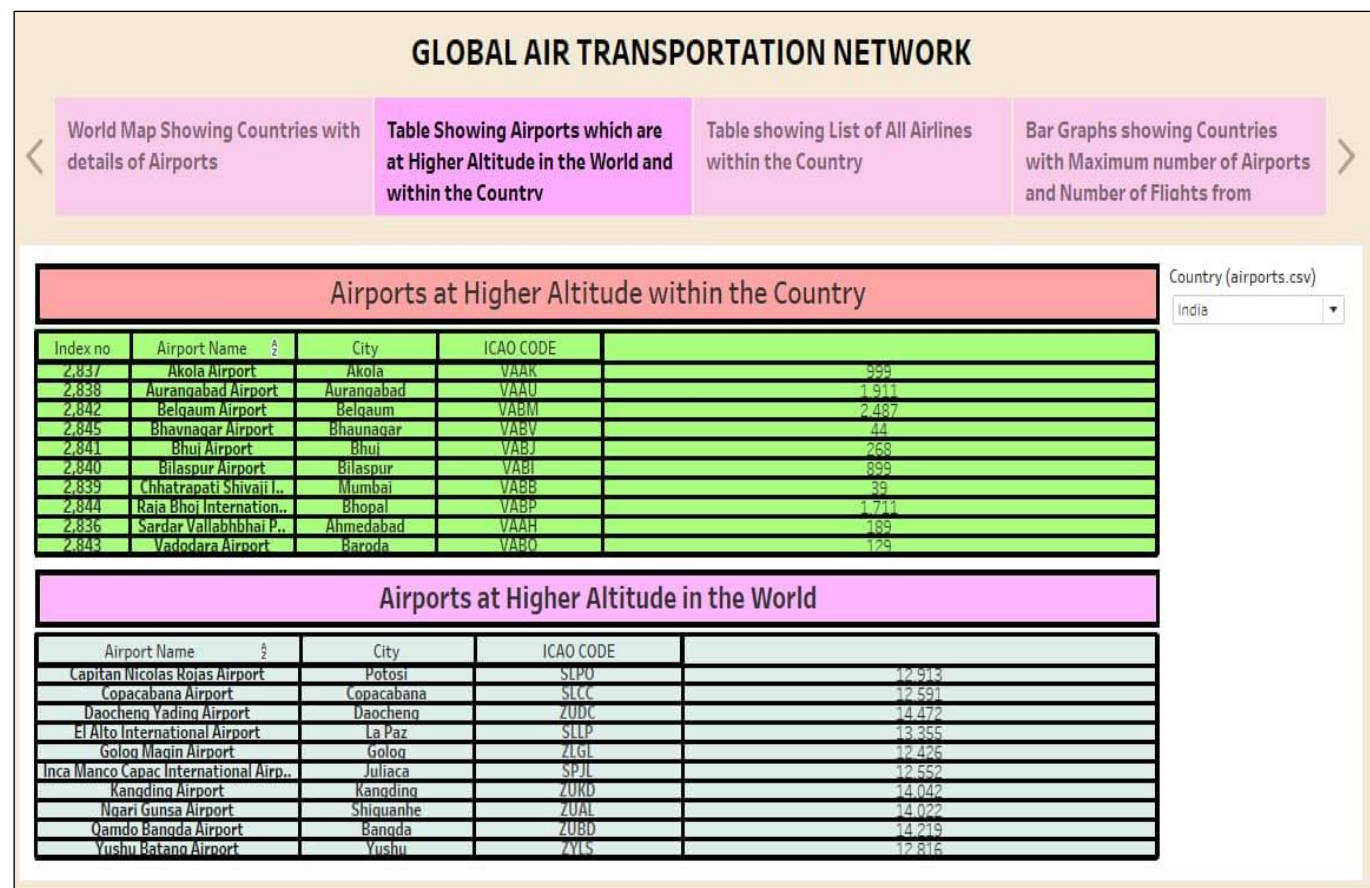
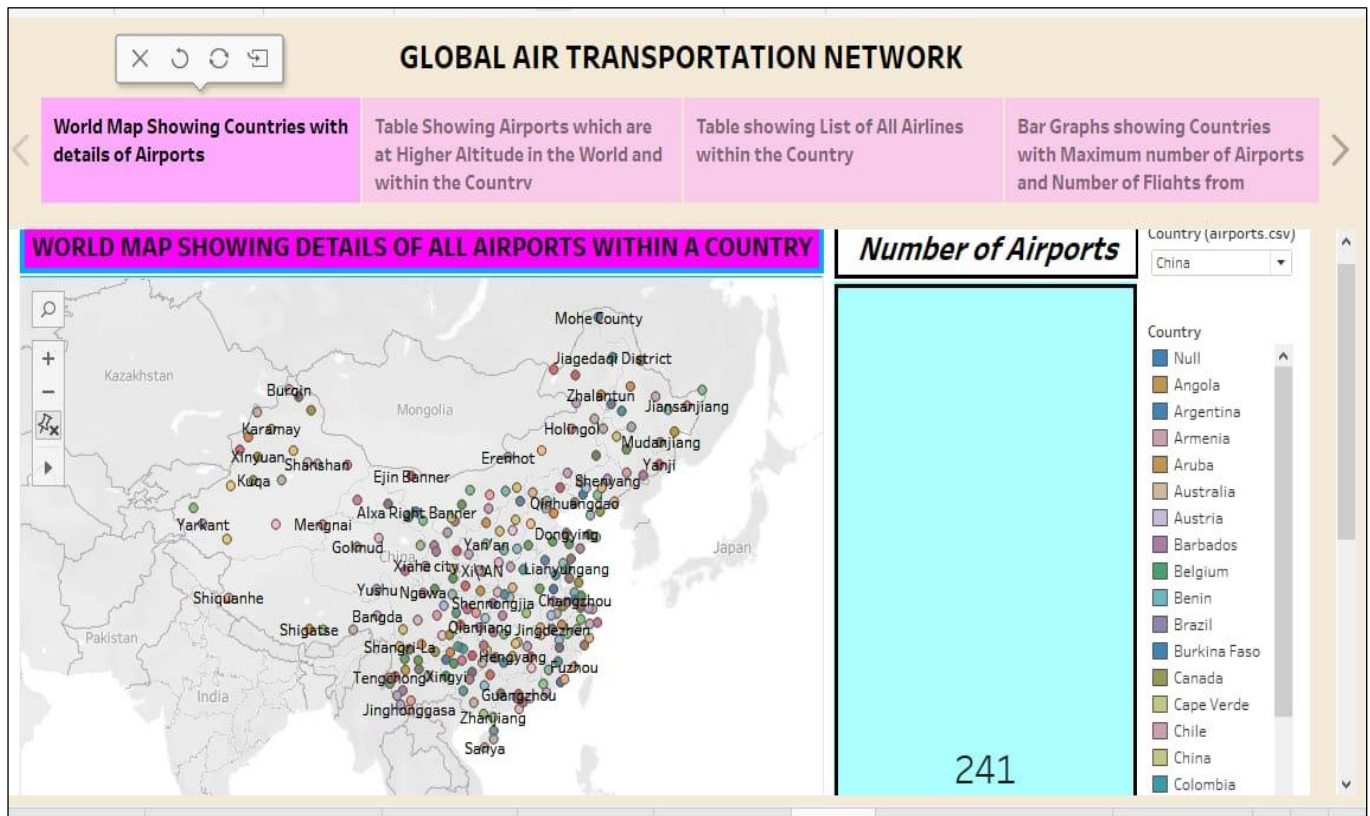
United States	1,512
Canada	430
Australia	334
Russia	264
Brazil	264
Germany	249
China	241
France	217
United Kingdom	167
India	148
Indonesia	145
Japan	123
South Africa	99
Argentina	96
Mexico	84
Italy	83
Iran	82
Sweden	77
Turkey	76
Colombia	75
Philippines	71
Spain	64
Norway	63
New Zealand	60
Venezuela	57
Greenland	56

## Number of Flights from Airport

Source airp..

MNL	17
ARN	13
OUA	8
IKT	8
KZN	7
ZRH	6
GRU	6
SVX	5
OVB	5
LIM	5
ADQ	5
RAO	4
NBC	4
GYN	4
GYE	4
DME	4
UUA	3
UIO	3
TPP	3
PCL	3
LED	3
HAD	3
CEK	3
BSB	3
BKO	3
VXO	2

# STORY



## GLOBAL AIR TRANSPORTATION NETWORK

World Map Showing Countries with details of Airports

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

Table showing List of All Airlines within the Country

Bar Graphs showing Countries with Maximum number of Airports and Number of Flights from

Airline ID	Name	ICAO	Callsign	
218	Air India Limited	AIC	AIRINDIA	
241	Air Sahara	RSH	SAHARA	
569	Air India Express	AXB	EXPRESS INDIA	
2575	Go Air	GOW	GOAIR	
2850	IndiGo Airlines	IGO	IFLY	
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 Dargah	DDI	Null	

Active

☐ (All)

☐ N

☒ Y

Country

India

Active

☒ Y

Highlight Name

Highlight Name

## GLOBAL AIR TRANSPORTATION NETWORK

World Map Showing Countries with details of Airports

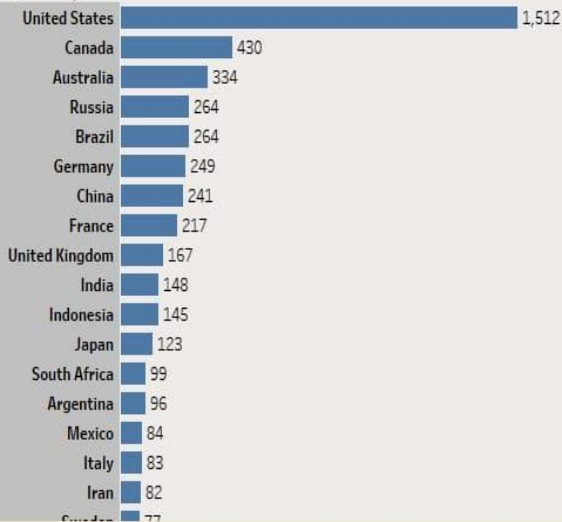
Table Showing Airports which are at Higher Altitude in the World and within the Country

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### Country with Maximum Number of Airports

Country (airports.csv)



### Number of Flights from Airport

Source airp..





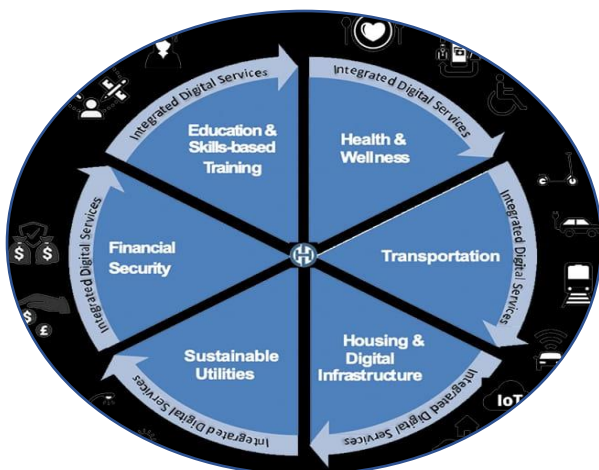
# 4 ADVANTAGES AND DISADVANTAGES

## ADVANTAGES

**Trade Expansion:** Access to a global network of airports enables the efficient movement of goods, reducing shipping times and costs. This encourages international trade and can enhance a country's competitiveness in global markets



**Business Opportunities:** It fosters business opportunities and partnerships by enabling easier access to international markets, customers, and suppliers. This is especially beneficial for export-oriented industry.



**Human Capital Development:** Access to global transportation networks can encourage students to pursue education abroad, fostering human capital development and creating a more skilled workforce



# DISADVANTAGES

**Infrastructure Costs:** Developing and maintaining airports and infrastructure can be expensive. Smaller or less developed regions may struggle to bear these costs



## **Connectivity for Remote**

**Regions:** Isolated or remote regions benefit from improved air connectivity, gaining access to essential services, medical care, and economic opportunities

## 5 APPLICATIONS

**Aid and Development:** Cooperation International organizations and NGOs rely on air transportation networks for humanitarian aid delivery and development projects in remote or crisis-affected regions. Overall, unlocking access to the global air transportation network has far-reaching applications, positively impacting economies, cultures, and societies while enabling greater global connectivity and cooperation



**Crisis Management:** Efficient air transportation networks are vital for the timely transport of emergency personnel and supplies during crises, such as pandemics or natural disasters

### **Connectivity for Remote Regions:**

Isolated or remote regions benefit from improved air connectivity, gaining access to essential services, medical care, and economic opportunities



## 6 CONCLUSION

### **Economic Prosperity**

Integration into the global air transportation network can be a catalyst for economic prosperity, driving growth through increased trade, investment, and tourism.

### **Global Connectivity**

Improved air connectivity enables countries and regions to engage more deeply in international affairs, diplomacy, and global partnerships.

### **Environmental Challenges**

While beneficial, the expansion of air travel also poses environmental challenges, including greenhouse gas emissions and noise pollution, which must be addressed.

### **Sustainable Development**

Balancing the advantages of air connectivity with environmental sustainability is a critical challenge for governments and the aviation industry.



## 7 FUTURE SCOPE



Improving new technologies making aviation more efficient, from the use of lightweight composite materials that reduce fuel consumption to more efficient engines that produce less pollution. Improved air traffic control systems are also making air travel more efficient by reducing congestion and delays. By 2030, the expectation is that the integration of new technologies will enable airports to deliver passengers customized, on-demand service to improve their airport experience. One such example is the implementation of virtual queuing instead of joining a physical line. By 2038, global air transport is forecast to support 143 million jobs and contribute \$6.3 trillion to the global economy.

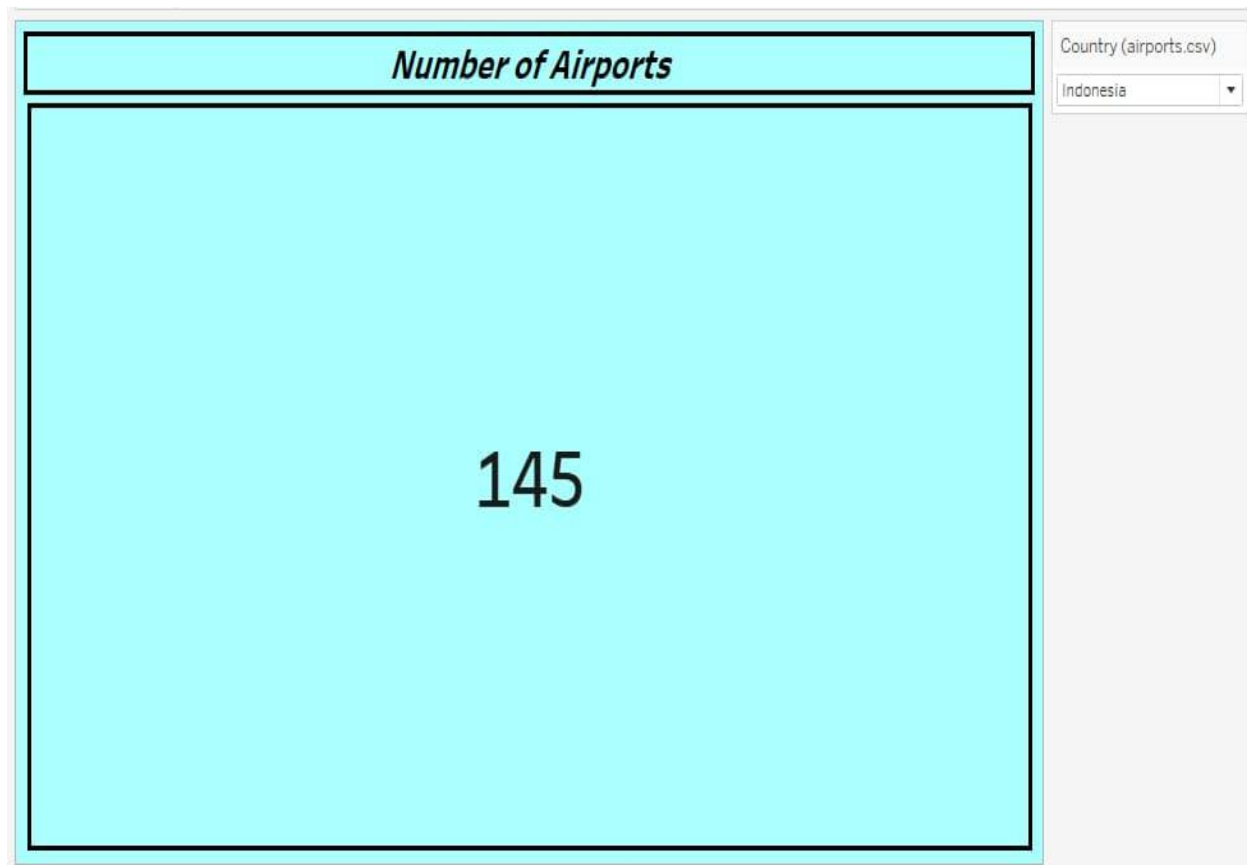


## 8 PERFORMANCE TESTING

### WORLD MAP SHOWING DETAILS OF ALL AIRPORTS WITHIN A COUNTRY



### NUMBER OF AIRPORTS



## AIRPORTS AT HIGHER ALTITUDE WITHIN THE COUNTRY

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Country (airports.csv)  
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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	

Active

☐ (All)
 ☐ N
 ☒ Y

Country

India

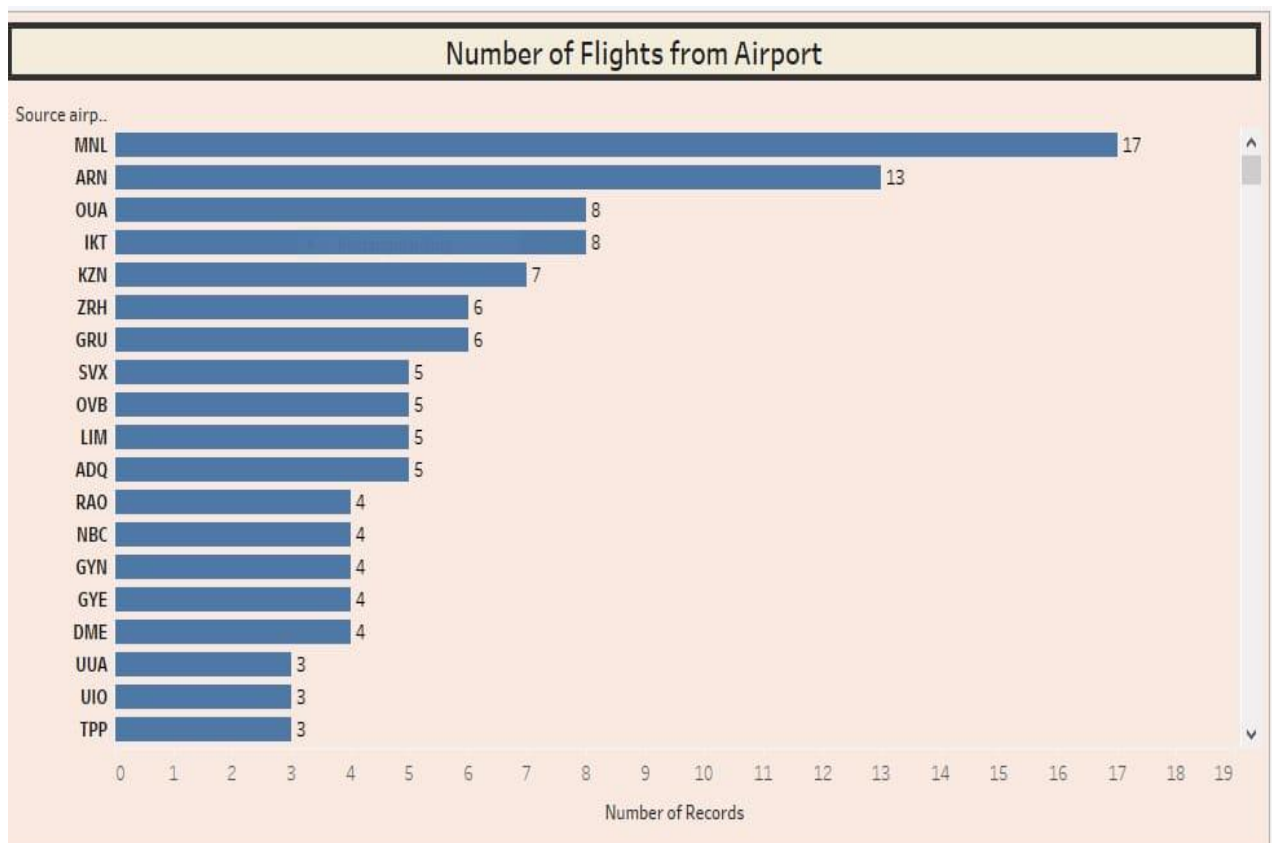
Active

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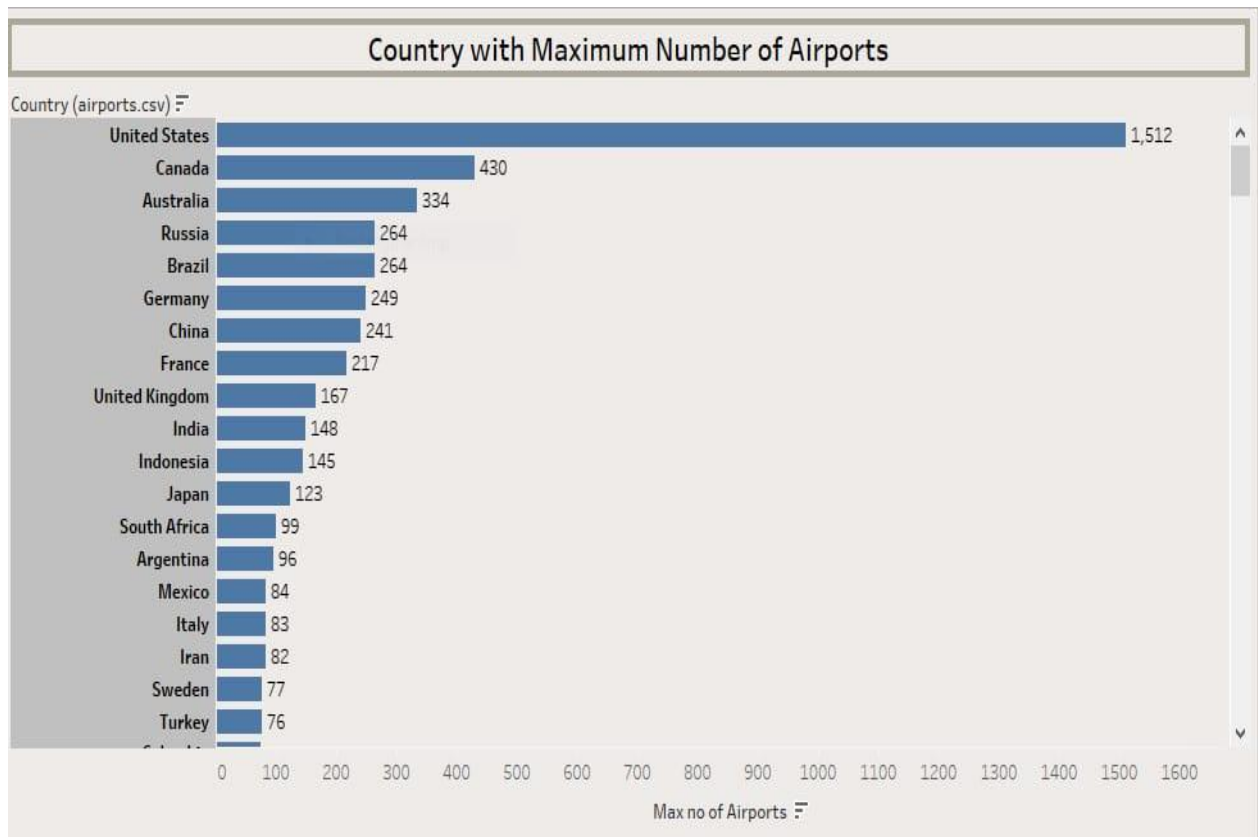
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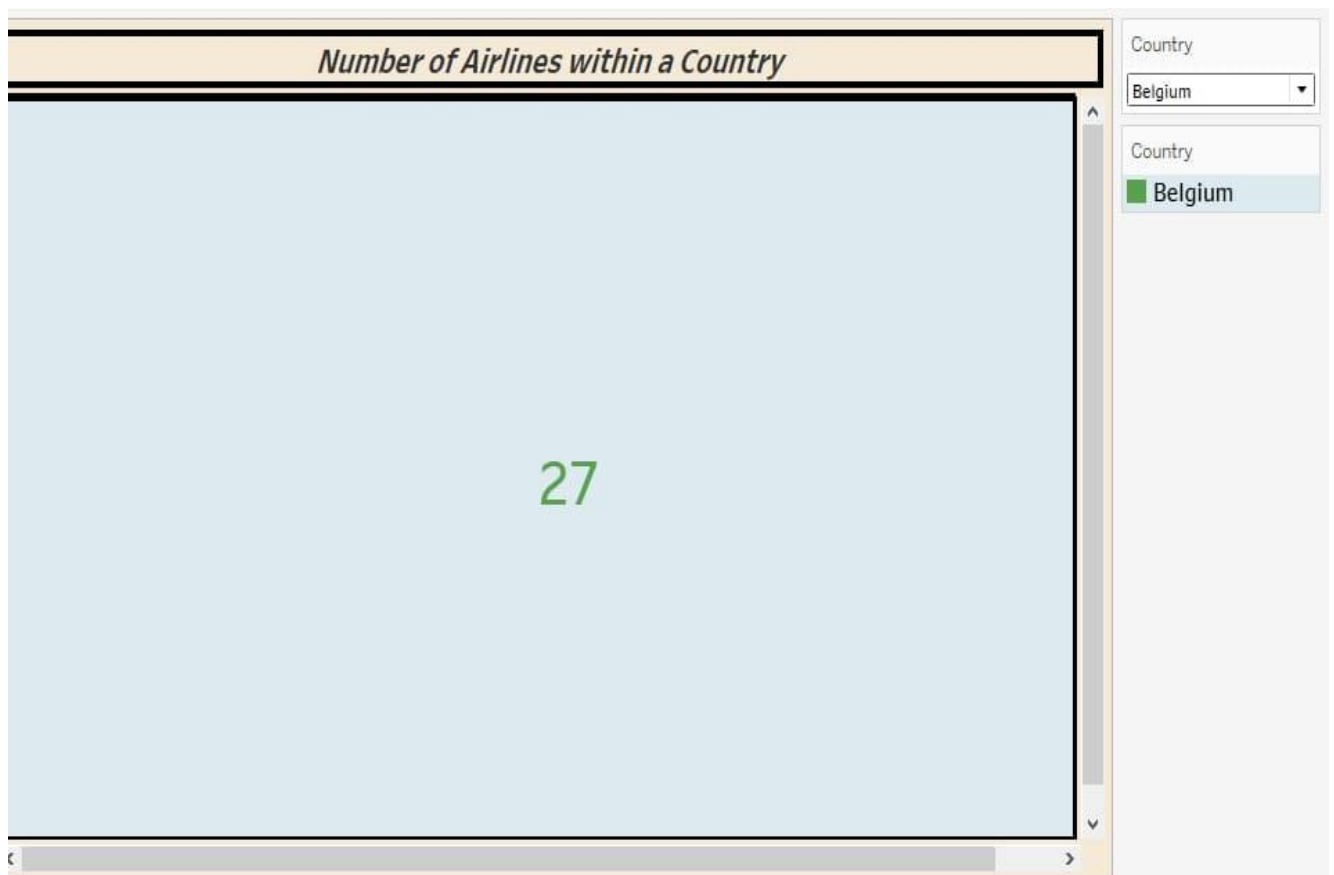
## NUMBER OF FLIGHTS FROM AIRPORTS



## COUNTRY WITH MAXIMUM NUMBER OF AIRPORTS



## NUMBER OF AIRLINES WITHIN A COUNTRY





# 9 PUBLISHING LINKS

## DASHBOARD 1:

[https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD1\\_16956221323660/DASHBOARD1?publish=yes](https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD1_16956221323660/DASHBOARD1?publish=yes)

## DASHBOARD 2

[https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD2\\_16956226741570/DASHBOARD2?publish=yes](https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD2_16956226741570/DASHBOARD2?publish=yes)

## DASHBOARD 3:

[https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD3\\_16956229941860/DASHBOARD3?publish=yes](https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD3_16956229941860/DASHBOARD3?publish=yes)

## DASHBOARD 4:

[https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD4\\_16956233460680/DASHBOARD4?publish=yes](https://public.tableau.com/app/profile/aashika.s.s/viz/DASHBOARD4_16956233460680/DASHBOARD4?publish=yes)

## STORY

[https://public.tableau.com/app/profile/aashika.s.s/viz/STORY1\\_16956250327990/Story1?publish=yes](https://public.tableau.com/app/profile/aashika.s.s/viz/STORY1_16956250327990/Story1?publish=yes)