

Unlocking Insights Into the Global Air transportation

NAAN MUDHALVAN TEAM PROJECT

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Introduction:

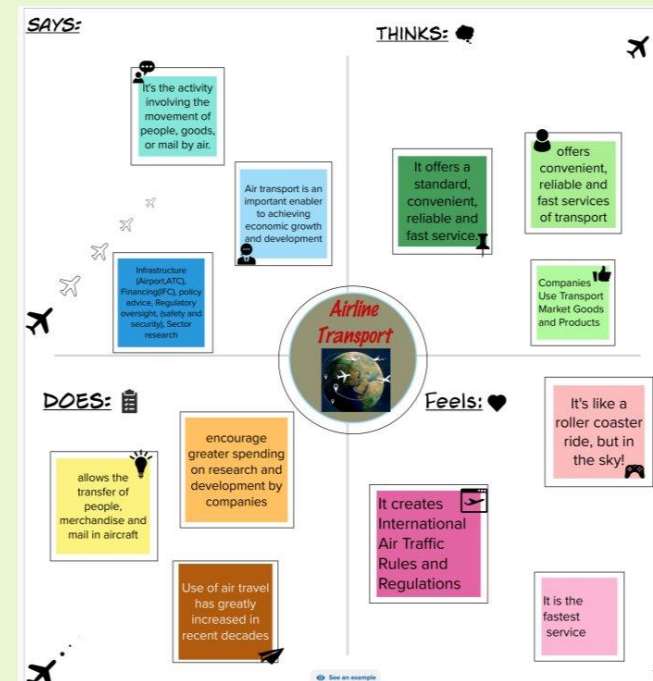
Overview

- ▶ 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, call signs country of origin and active/inactive status.
- ▶ This dataset has been compiled through meticulous labor by researchers all over the world to give you a comprehensive detail into air transportation networks from around the globe.

Problem Definition & Design Thinking

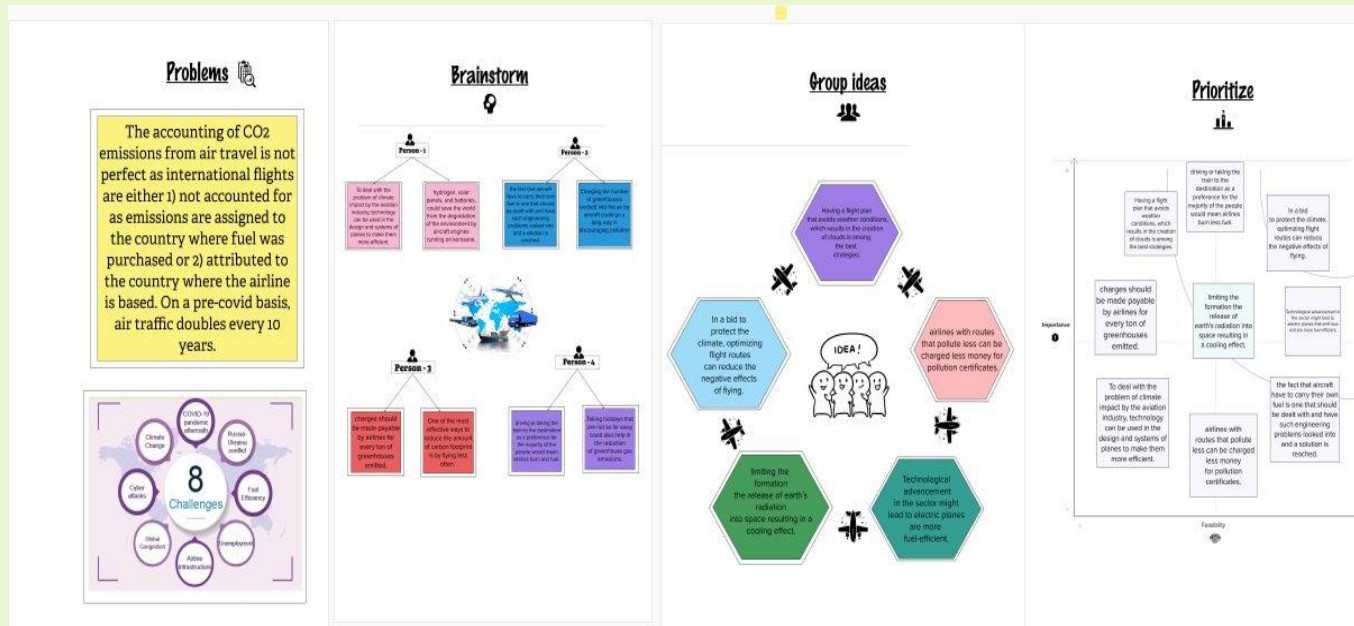
Empathy Map

- ▶ An empathy map is a collaborative visualization used to articulate particular type of user. It externalizes knowledge what we know about users in order to
- ▶ 1) create a shared understanding of user needs, and
- ▶ 2) aid in decision making.



Ideation & Brainstorming Map

- ▶ A principal difference between ideation and brainstorming is that ideation is commonly more thought of as being an individual pursuit, while brainstorming is almost always a group activity.



Advantages:

1. High Speed

- ▶ **Air is the type of freight capable of traveling long distances in short periods of time. This makes this model an optimum choice if the client has an urgent need to ship a product or if their freight demands special standards of protection or acclimation. It is the quickest transport mode and is therefore ideal for long-distance transport of goods. It takes less time.**

2. Fast Service

- ▶ **Air transportation offers convenient, reliable and fast services of transport. It is considered the cheapest way to ship peregrinated goods. It offers a standard, convenient, reliable and fast service.**

3. Send almost everywhere your freight

- ▶ **In regions that are not readily accessible to other modes of transport, air transport is considered to be the only means of transport. Open to all regions, irrespective of land interference.**
- ▶ **A vast network of airlines covering nearly the whole globe is available for many airlines. This ensures that the package can be sent almost anywhere.**

4. High Standard of Security

- ▶ **High standard of protection with a low risk of robbery and injury. Shipping by air has a high degree of security since airport safety restrictions on cargo are strictly enforced. Tightly controlled airport controls also minimise cargo theft and loss.**

5. Natural Route

- ▶ **An aircraft can fly to any location without seeing any natural obstacles or barriers. Since customs formalities are easily compiled. It eliminates the need for more time to seek clearance.**
- ▶ **Air travel is used for relief operations during earthquakes, floods, accidents, and famines.**

Disadvantages

1. Risky

- ▶ Air travel is the riskiest mode of transport, since there can be considerable losses to goods, customer and crews as a result of a minor crash. Compared to other means of travel, the risks of collisions are higher.

2. Cost

- ▶ Air travel is considered to be the most expensive means of transportation. The cost of maintaining aircraft is higher and the costs for the building of aerodromes and anions are much higher. That's why air travel is so expensive that it gets beyond ordinary people's grasp.

3. Some Product Limitation

- ▶ There is a whole variety of materials not suitable for such products, from explosives, gases, batteries, fired solids and liquids, which cannot be shipped by air to name but a few.

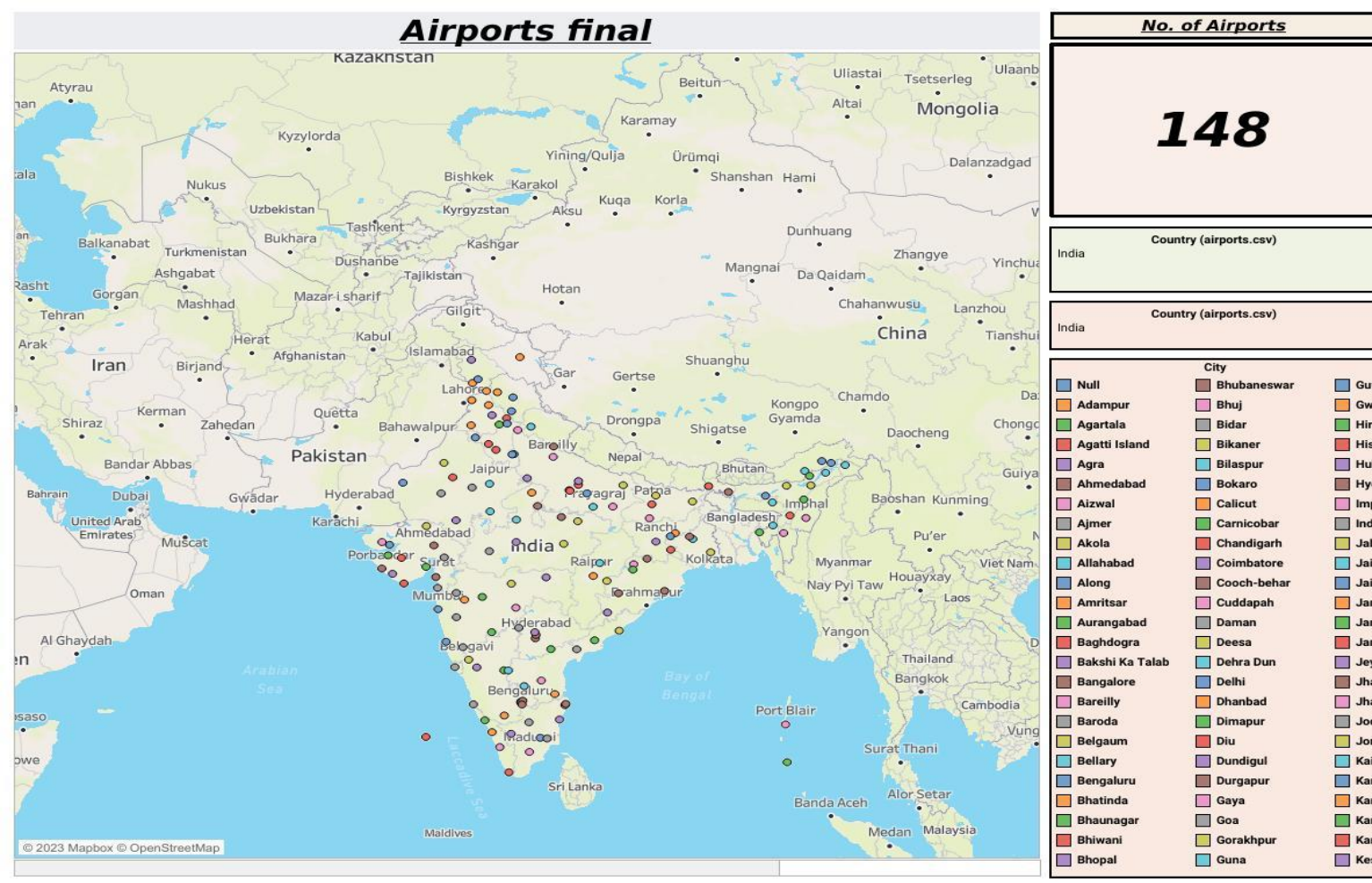
4. Capacity for Small Carriage

- ▶ The aircraft have no room and therefore are not ideal for carriage of voluminous and cheaper materials. As is seen for rails, the load volume cannot be raised.

Result

- ▶ Air transport is an important enabler to achieving economic growth and development. Air transport facilitates integration into the global economy and provides vital connectivity on a national, regional, and international scale. It helps generate trade, promote tourism, and create employment opportunities.
- ▶ The following Dashboards shows the Result of our Projects.

Dashboard-1



Dashboard-2

AllCountry (airports.csv)

Airport at higher altitude within a country

index	City	Name (airports.csv)	ICAO (airports.csv)	
1	108 Mile Ranch	South Cariboo Region / 108 Mile Airport	CZML	3,126
	ALTA FLORESTA D'OESTE	Fazenda Mequens Airport	SJTF	552
	ANDERSON	Anderson Municipal Darlington Field	KAID	919

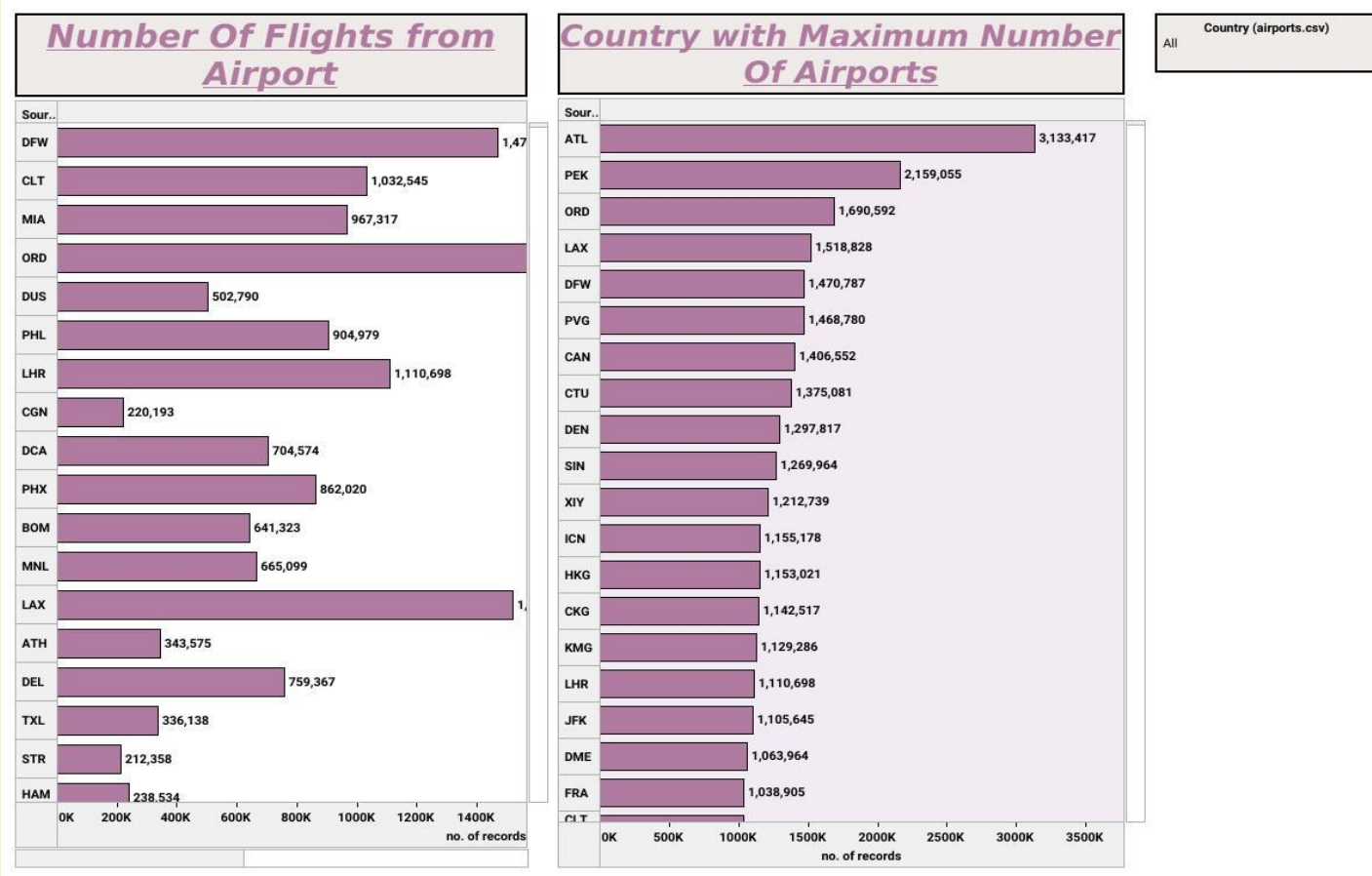
Airports at highest altitude in world

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

Dashboard-3

Airlines within a country				No. Of Airlines
Airline ID	Name	Icao	Callsign	<div>29</div> <div><input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> Y</div> <div>Country India</div> <div>Active <input checked="" type="checkbox"/> N <input type="checkbox"/> Y</div> <div>Country India</div>
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	

Dashboard-4



Story

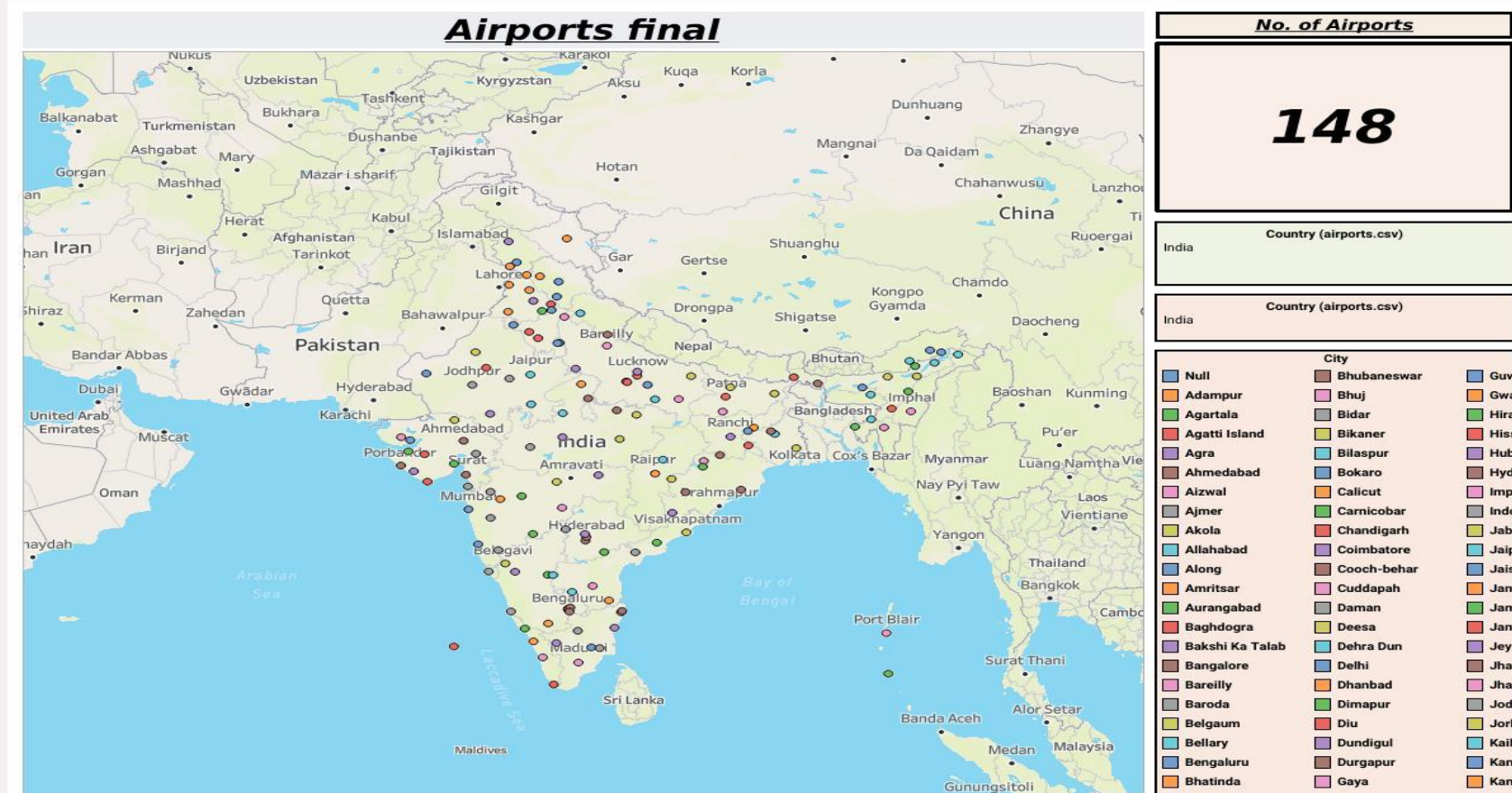
Story 1

World map
Showing Country..

Table Showing
Airports which are..

Table Showing List of all Airlines withi..

Bar graphs
showing countries..



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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	
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19451	Air Costa	\N	Null	
20264	Air Vistara	VTI	Null	
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21270	Air Carnival	\N	Null	

No. Of Airlines

29

☒ N
☒ Y

Country
India

Active
☒ N
☒ Y

Country
India

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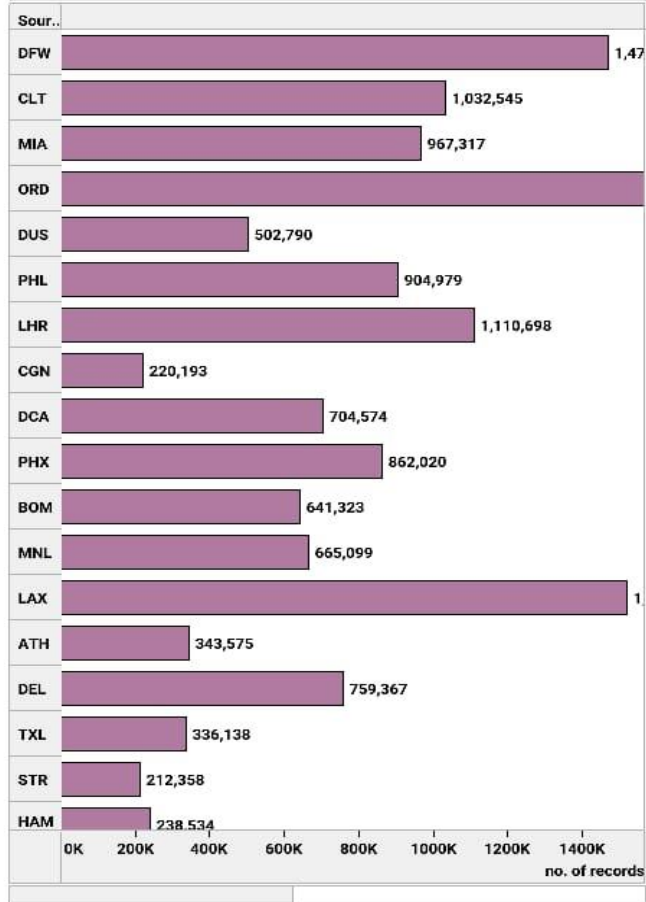
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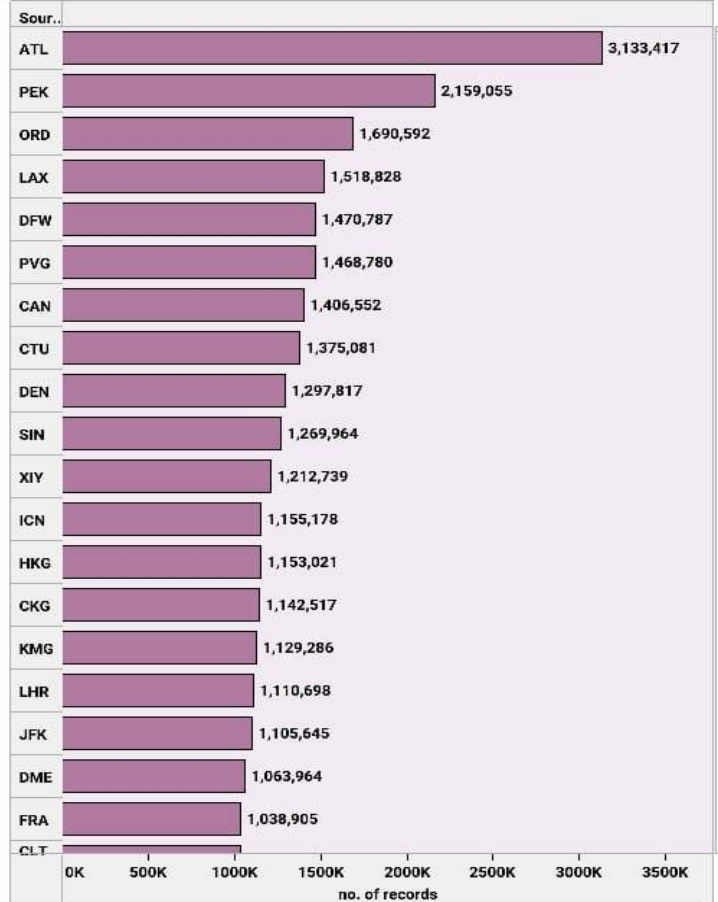
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Number Of Flights from Airport



Country with Maximum Number Of Airports



Country (airports.csv)

All

Conclusion

- ▶ **The air transport industry is not only a vital engine of global socio-economic growth but is also of vital importance as a catalyst for economic development in most countries and for many regions within each country. Its importance arises not only from its ability to facilitate the movement of people but also its ability to expedite the movement of goods.**
- ▶ **Currently, rising operating costs, stoked by the high price of aviation fuel combined with slowing or even negative demand growth, will lead to dramatic restructuring of the airline industry and the collapse of many airlines especially smaller ones. Reduced access to air services for both passengers and freight may put many communities at a disadvantage.**

Future scope

- ▶ **The most recent estimates suggest that demand for air transport will increase by an average of 4.3% per annum over the next 20 years.**
- ▶ **If this growth path is achieved by 2036 the air transport industry will then contribute 15.5 million in direct jobs and \$1.5 trillion of GDP to the world economy.**
- ▶ **Emerging technologies are reshaping with robotics, artificial intelligence, the internet of things, unmanned aircraft systems and the push for hybrid and electric airplanes – just to name a few.**
- ▶ **Alternative fuels can significantly change the current scenario of aviation in support of the environmental protection.**