

Project report

Unlocking Insights into the Global Air Transportation Network

TEAM I'D :

NM2023TMID06104

TEAM MEMBERS

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1.Introduction :

1.1 Overview :

The air transportation network is a complex network which has the properties of small world networks and scale free networks. The degree distribution of the nodes displays a heavy tailed distribution. The hubs of the network have large connectives and long distance connectivities at the same time. Several air transport network data sources are available from academic and the commercial databases. In order to construct a network from the data, airports are represented by nodes and flights are represented by weighted links.

1.2 Purpose :

The purpose of using airlines, or air travel, is to efficiently and quickly transport people and goods by air from one location to another. This mode of transportation serves various purposes, including:

1. Travel: It allows individuals to reach distant destinations for business, tourism, family visits, and other personal reasons.

2. Business: Air travel facilitates business meetings, conferences, and the transportation of goods, contributing to global commerce.

3. Migration: Air travel is used by individuals and families relocating to other countries for work, seeking asylum, or other purposes.

In essence, airlines are a versatile mode of transportation that serves a wide range of purposes, contributing to global connectivity



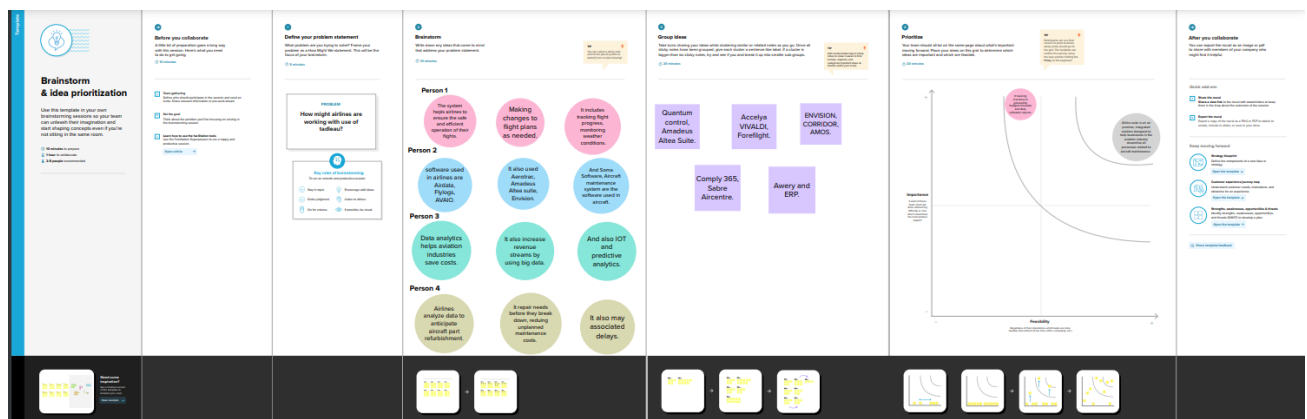
and economic, social, and cultural interactions.

2. Problem definition and design thinking :

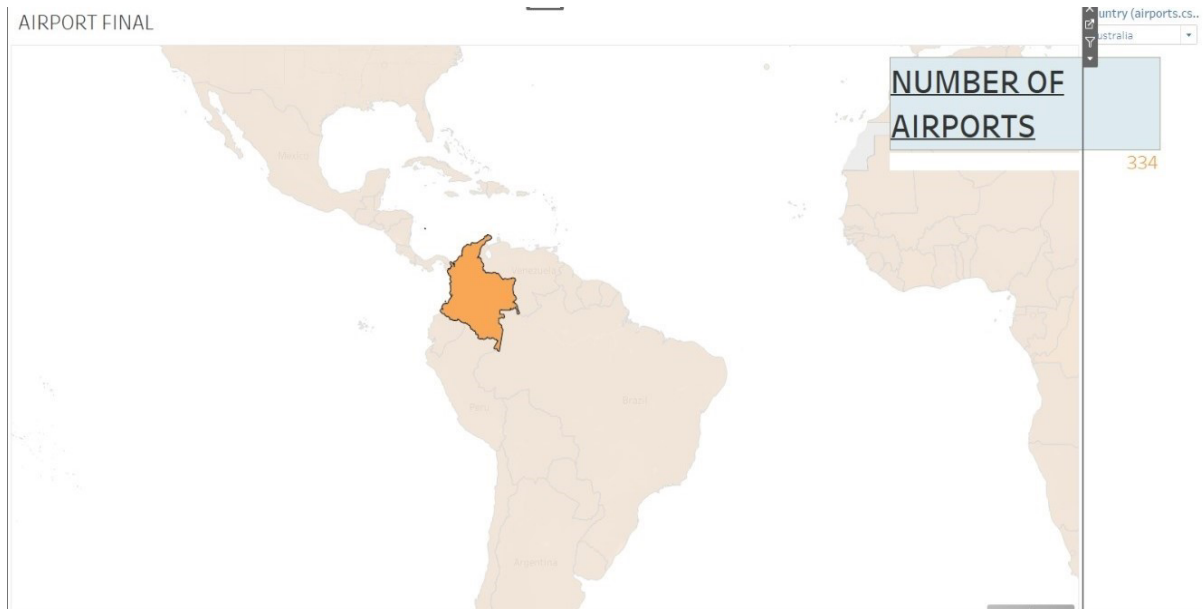
2.1 Empathy map :



2.2 Ideation and Brainstorming map :



3. Result:



Dashboard

Layout

Default

Phone

Device Preview

Size

Automatic

The dashboard will resize to fit any screen it is displayed on

WORLD MAP ...

AIRPORT AT ...

NUM OF ...

AIRPORTS AT ...

AIRLINES ...

Objects

Horizontal Container

Vertical Container

Text

Extension

Ask Data

Data Story

Image

Tiled

Floating

Show dashboard title

Airports at higher altitude within a country

Index	Name (airports.csv)	City	ICAO code	
Null	Zyryanka Airport	Zyryanka	Null	140
	Zunyi Xinzhou Airport	Zunyi	Null	2,920
	Zunyi Maotai Airport	Zunyi	Null	4,068
	Zulu Inyala Airport	Phinda	Null	160
	Zhytomyr Airport	Zhytomyr	Null	0
	Zhigansk Airport	Zhigansk	Null	292
	Zheleznogorsk Airpo...	Zheleznogorsk-Ilims...	Null	1,946
	Zhangye Ganzhou Ai...	Zhangye	Null	5,280
	Zhangjiakou Ningyu...	Zhangjiakou	Null	2,347
	Zermatt Heliport	Zermatt	Null	0
	Zerbst Airport	Zerbst/Anhalt	Null	289
	Zephyrhills Municip...	Zephyrhills	Null	90
	Zelenople Municipal...	Zelenople	Null	898
	Zaqatala Internatio...	Zaqatala	Null	1,279
	Zanesville Municipal...	Zanesville	Null	900
	Zafer Airport	Kutahya	Null	3,327
	Zabrat Airport	Baku	Null	36
	Zubileyniy Airfield	Baikunur	Null	328
	Yuanmou Air Base	Yuanmou	Null	3,810
	Young Airport	Null	Null	1,267
	Yingkou Langqi Airport	Yingkou	Null	0
	Yichun Mingyueshan...	Yichun	Null	430
	Yevsk Airport	Eysk	Null	60
	Yermolino Airport	Balabanovo	Null	640
	Yerbogachen Airport	Yerbogachen	Null	400
	Yeltsin Airport	Novosibirsk	Null	617
	Yeliahanka Air Force ...	Bangalore	Null	3,045
	Yeerqiang Airport	Yarkant	Null	4,232
	Yasawa Island Airpo...	Yasawa Island	Null	37
	Yangzhou Taizhou Ai...	Yangzhou	Null	7
	Yamburg Airport	Yamburg	Null	108
	Yalata Mission Airp...	Yalata	Null	0

Airports at higher altitude in the world

Name (airports.csv)	City	ICAO (air...	
Daocheng Yading Ai...	Daocheng	ZUDC	10,222
Qamdo Bangda Airp...	Bangda	ZUBD	10,200
Kangding Airport	Kangding	ZUKD	14,624
Ngoni Gumsa Airport	Shiguanhe	ZUAL	10,000
El Alto International	La Paz	SLP	13,355
Capitan Nicolas Roja...	Potosi	SLPO	10,000
Yushu Batang Airport	Yushu	ZYLS	10,000
Copacabana Airport	Copacabana	SLCC	10,000
Inca Manco Capac In...	Juliacca	SPJL	10,000
Goloq Maqin Airport	Goloq	ZLGL	10,000

ICAO code

☒ (All)

☒ Null

☒ VN

☒ A3ST

☒ A19N

☒ A20N

☒ A21N

☒ A308

☒ A35K

☒ A124

☒ A140

☒ A148

☒ A158

☒ A225

☒ A306

☒ A310

☒ A318

☒ A319

☒ A320

☒ A321

☒ A332

☒ A333

☒ A337

☒ A338

☒ A339

☒ A342

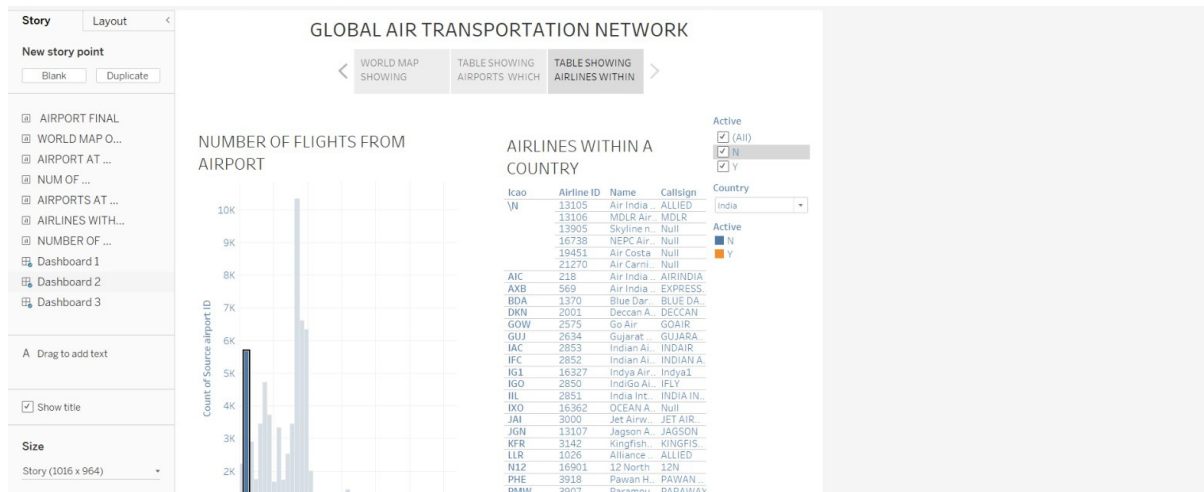
☒ A343

☒ A345

☒ A346

☒ A359

☒ A388



4. Advantages :

- **Speed:** it is the fastest mode of transport that exists and, therefore, it is especially recommended when time is an important factor.
- **There are no physical barriers:** thanks to this it is possible to make a trip without interruption choosing the shortest and most direct route through seas, mountains.
- **Easy access:** Air transport can transport goods to areas that are not easily accessible by other means of transport.
- **Suitable for transporting high-value or perishable goods over long distances.**

Disadvantages :

- **Very expensive economically:** it is the most expensive means of transport.
- **Uncertain:** air transport is largely conditioned by weather conditions. Snow, rain, fog, etc., can cause the cancellation of scheduled flights and the suspension of air service.
- **Not suitable for cheap and high volume goods** due to its limited capacity and high cost.
- **Legal restrictions:** Many countries have legal restrictions in the interest of their own security.



5. Applications :

Air transport is currently used in almost all industrial sectors and distribution chains. Most companies use air transport to market goods and products internationally or to deliver samples and documents related to foreign trade operations. 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.

6. Conclusion :

In conclusion, the Indian aviation industry has undergone significant developments and growth in recent years. The expansion of regional connectivity, emergence of low-cost carriers, increased investment in infrastructure, and adoption of technological advancements have all contributed to the growth of the industry. In conclusion, the Indian aviation industry has undergone significant developments and growth in recent years. The expansion of regional connectivity, emergence of low-cost carriers, increased investment in infrastructure, and adoption of technological advancements have all contributed to the growth of the industry.

7. Future Scope :

The industry has a number of domestic and international airlines, as well as a large network of airports. The future of the aviation industry in India is likely to see continued growth and expansion, driven by factors such as a growing middle class, increased tourism, and government policies supporting the



industry.

THANKING YOU!



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