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

Introduction:

Project Description:

a: Unlocking Insights of Global Air Transportation

Project Goal:

To develop a comprehensive and user-friendly platform that unlocks insights of global air transportation. This platform will enable users to explore and analyze a wide range of data, including flight schedules, aircraft movements, passenger traffic, and cargo volumes.

Target Audience:

The target audience for this platform includes a variety of stakeholders in the global air transportation industry, such as airlines, airports, government agencies, and research institutions. The platform will be used by these stakeholders to make informed decisions about their operations and to support the development of new policies and initiatives.

Project Scope:

The project will involve the following steps:

1. Data collection and integration: The project team will collect and integrate data from a variety of sources, including airlines, airports, and government agencies.

This data will be cleansed, standardized, and loaded into a data warehouse.

2. Data analysis and visualization: The project team will develop a variety of data analysis and visualization tools to enable users to explore and analyze the data in the data warehouse. These tools will be designed to be user-friendly and accessible to a wide range of users.
3. Platform development: The project team will develop a web-based platform that provides users with access to the data analysis and visualization tools. The platform will be designed to be scalable and secure.
4. User testing and deployment: Once the platform is developed, it will be tested by a group of users to ensure that it meets their needs. Once the testing is complete, the platform will be deployed to the target audience.

Project Deliverables:

The project will deliver the following:

- A data warehouse containing a comprehensive and integrated dataset on global air transportation
- A set of data analysis and visualization tools that enable users to explore and analyze the data in the data warehouse
- A web-based platform that provides users with access to the data analysis and visulization tools

Uses of the project

- Airlines: Airlines can use the platform to improve their operations in a number of ways, such as:

Optimizing flight schedules and routing

Identifying and managing bottlenecks

Increasing fuel efficiency

Improving customer service

- Airports: Airports can use the platform to improve their operations in a number of ways, such as:

Optimizing traffic flow

Reducing congestion

Improving security

Managing capacity

- Government agencies: Government agencies can use the platform to develop and implement policies that support the growth and development of the air transportation industry. For example, government agencies can use the platform to:

Identify underserved regions

Promote competition

Encourage innovation

- Research institutions: Research institutions can use the platform to conduct research on a wide range of topics related to air transportation, such as:

Safety

Sustainability

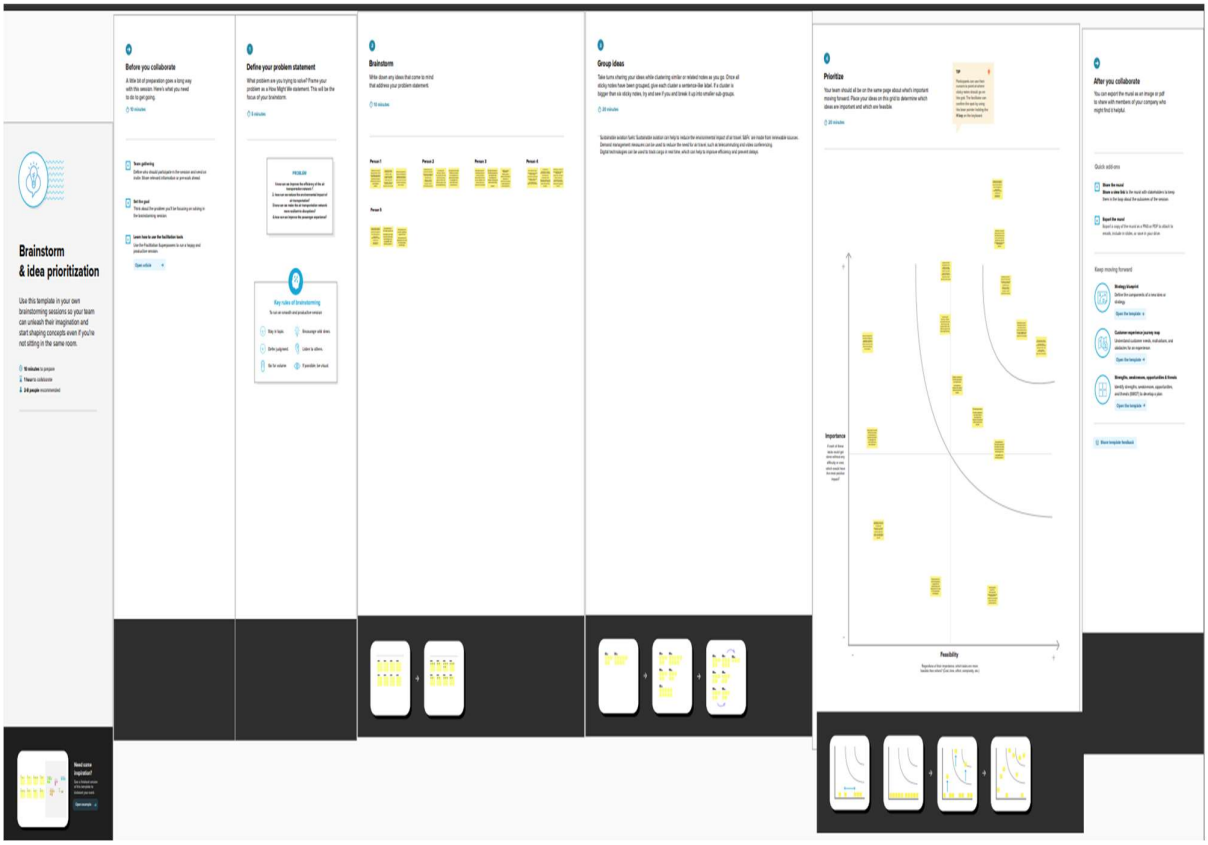
Economic impact

Social impact

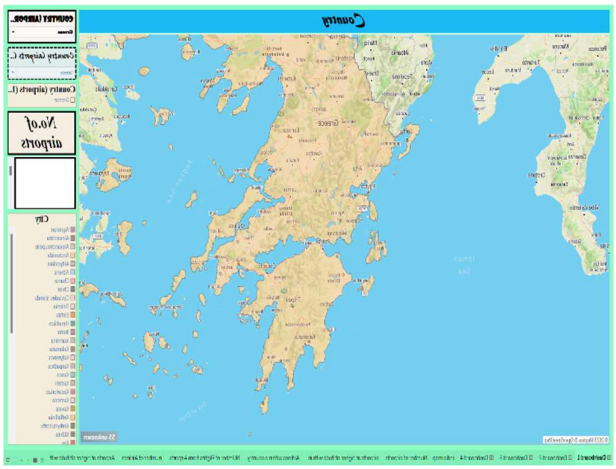
EMPATHY MAP

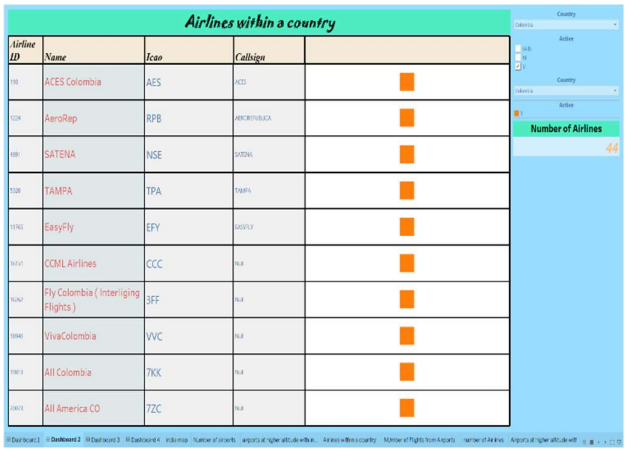

Says
What have we heard them say?
What can we imagine them saying?
Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?
The International air Transport Association uses Tableau to track the global air traffic market. This data is used to inform decisions abo;ut capacity, pricing, and r;oute development.
to improve the efficiency of the network by identifying and addressing bottlenecks
The Airportsa Council International uses Tableau to monitor the performance of airports around the world. This data is used to identify areas for improvement and to benchamark the performance of individual airports.
The Federal Aviation Administration uses Tableau to analyze air traffic data to identify potential
to reduce costs by optimizing routes and schedules
to improve by identifying and mitigating risks
Unlocking Insights Into The Global Air Transpotration Network With Tableau.
data cleaning : Once the data is collected ,it needs to be cleaned and prepared for analyssis
Fear of failure: Using Tableau to unlock insights into the global air transportation network can be a complex and daunting task. There is always the fear of failure, of not being able to get the results they need, or of making the wrong decisions.
Data analysis: the next step is to analyze the data to identify trends ,patterns ,and anomalies
Increased passenger traffic:The number of passengers traveling by air has been increasing steadily in recent years.
Anxiety about security: The air transportation industry is a target for cyberattacks. There is always the anxiety that sensitive data could be compromised, which could have a devastating impact on an airline or airport.
Urgency: The air transportation industry is a fast-paced industry. There is always a sense of urgency to make decisions and to take action.
Does
What behavior have we observed?
What can we imagine them doing?
Feels
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?
See an example

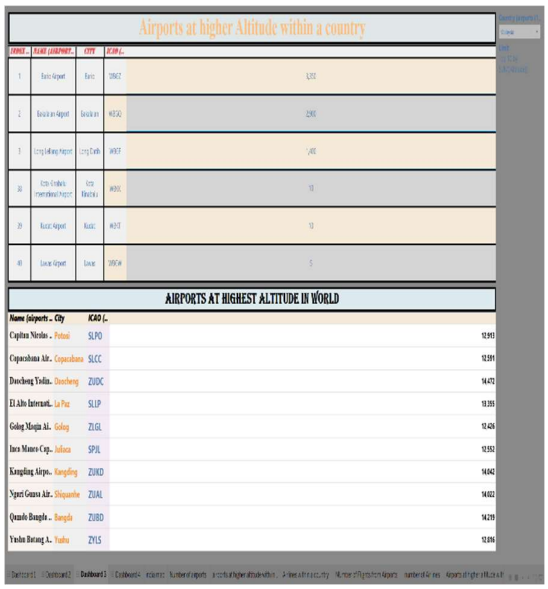
BRAIN STROMING

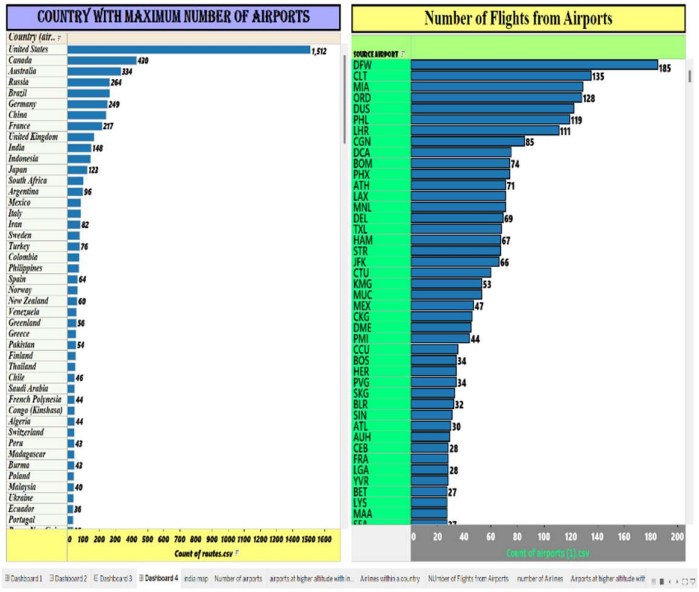


RESULT:

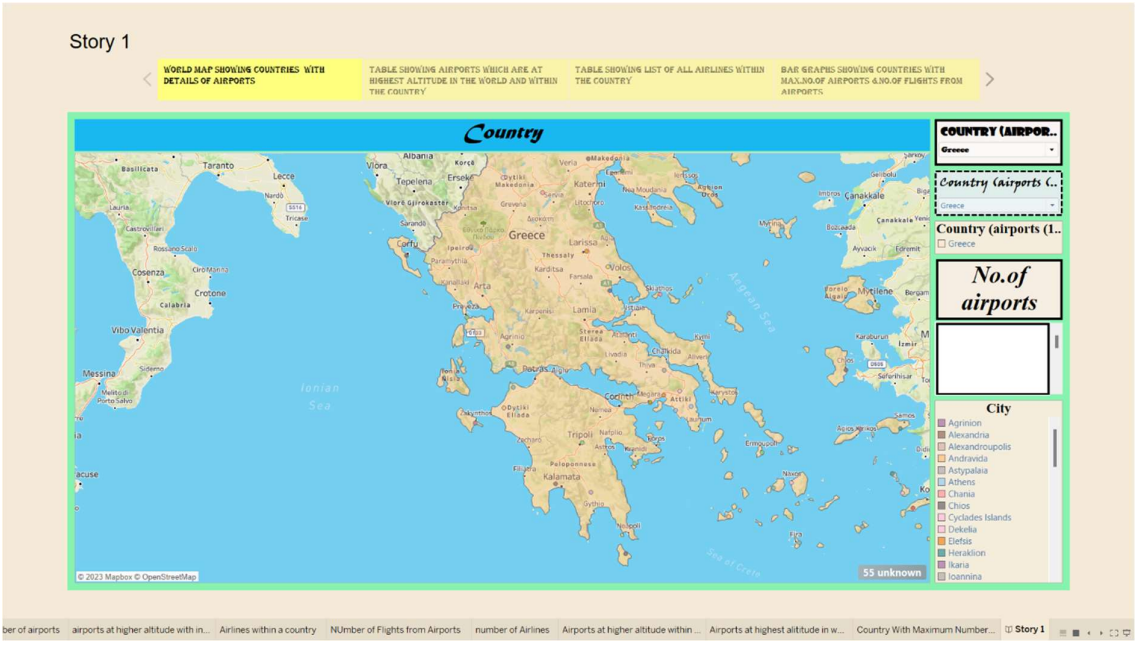

Country
No.of airports


Airlines within a country
Airline ID
Name
Icao
Callsign
ACES Colombia
AES
AeroRep
RPB
SATENA
NSE
TAMPA
TPA
EasyFly
EFY
CCML Airlines
CCC
Fly Colombia (Interliging Flights)
3FF
VivaColombia
VVC
All Colombia
7KK
All America CO
7ZC
Number of Airlines
44


Airports at higher Altitude within a country
AIRPORTS AT HIGHEST ALTITUDE IN WORLD
Name (Airports .. City
ICAO (..
Capitan Nicolas .. Potosi
SLPO
Copacabana Air.. Copacabana
SLCC
Daocheng Yading.. Daocheng
ZUDC
El Alto Internat.. La Paz
SLLP
Golog Maqin Ai.. Golog
ZLGL
Inca Manco Cap.. Juliaca
SPJL
Kangding Airpo.. Kangding
ZUKD
Nyari Gunsa Air.. Shiquanhe
ZUAL
Qamdo Bangda .. Bangda
ZUBD
Yushu Batang A.. Yushu
ZYLS


COUNTRY WITH MAXIMUM NUMBER OF AIRPORTS
Country (alt..
United States 1,512
Canada 420
Australia 334
Russia 264
Brazil
Germany 249
China
France 217
United Kingdom
India 148
Indonesia
Japan 123
South Africa
Argentina 96
Mexico
Italy
Iran 82
Sweden
Turkey 76
Colombia
Philippines
Spain 64
Norway
New Zealand 60
Venezuela
Greenland 56
Greece
Pakistan 54
Finland
Thailand
Chile 46
Saudi Arabia
French Polynesia 44
Congo (Kinshasa)
Algeria 44
Switzerland
Peru 43
Madagascar
Burma 42
Poland
Malaysia 40
Ukraine
Ecuador 36
Portugal
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600
Count of routes.csv
Number of Flights from Airports
SOURCE AIRPORT
DFW 185
CLT 135
MIA
ORD 128
DUS
PHL 119
LHR 111
CGN 85
DCA
BOM 74
PHX
ATH 71
LAX
MNL
DEL 69
TXL
HAM 67
STR
JFK 66
CTU
KMG 53
MUC
MEX 47
CKG
DME
PMI 44
CCU
BOS 34
HER
PVG 34
SKG
BLR 32
SIN
ATL 30
AUH
CEB 28
FRA
LGA 28
YVR
BET 27
LYS
MAA
0 20 40 60 80 100 120 140 160 180 200
Count of airports (1).csv

STORY BOOK:


Story 1
WORLD MAP SHOWING COUNTRIES WITH DETAILS OF AIRPORTS
TABLE SHOWING AIRPORTS WHICH ARE AT HIGHEST ALTITUDE IN THE WORLD AND WITHIN THE COUNTRY
TABLE SHOWING LIST OF ALL AIRLINES WITHIN THE COUNTRY
BAR GRAPHS SHOWING COUNTRIES WITH MAX.NO.OF AIRPORTS &NO.OF FLIGHTS FROM AIRPORTS
Country
COUNTRY (AIRPOR..
Greece
Country (airports (..
Greece
Country (airports (1..
Greece
No.of airports
City
Agrinion
Alexandria
Alexandroupolis
Andravida
Astypalaia
Athens
Chania
Chios
Cyclades Islands
Dekelia
Elefsis
Heraklion
Ikaria
Ioannina
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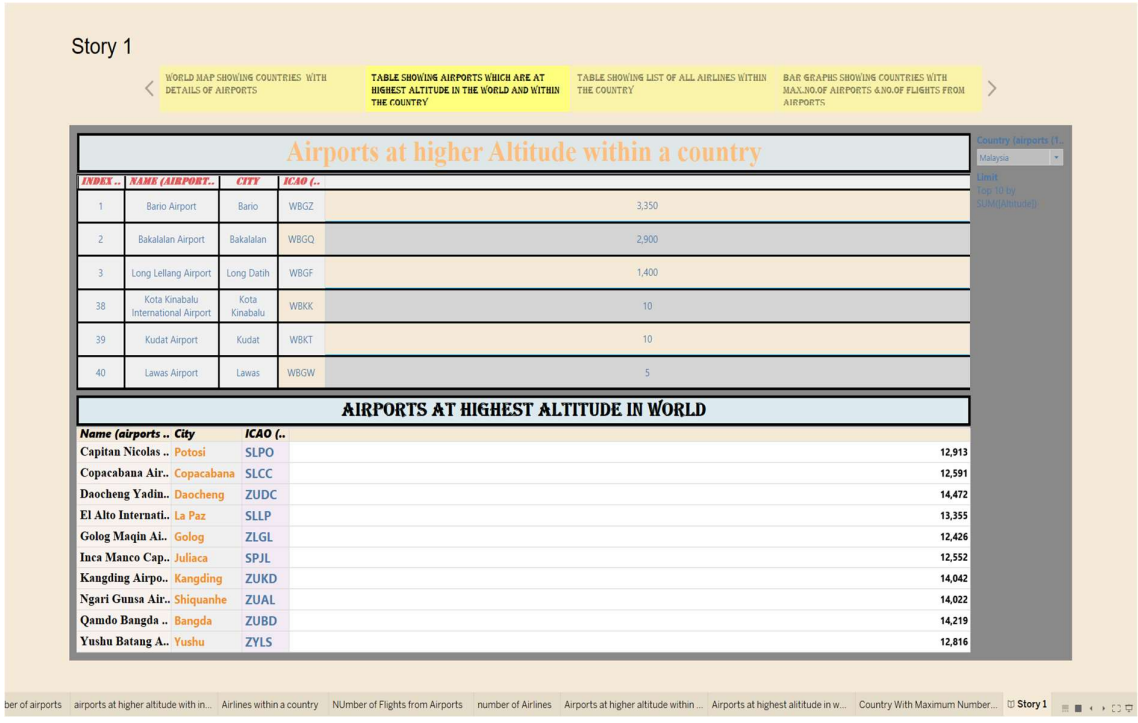
55 unknown
ber of airports
airports at higher altitude with in...
Airlines within a country
NUmber of Flights from Airports
number of Airlines
Airports at higher altitude within ...
Airports at highest alititude in w...
Country With Maximum Number...
Story 1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Airports at higher Altitude within a country
INDEX ..
NAME (AIRPORT..
CITY
ICAO (..
1 Bario Airport Bario WBGZ 3,350
2 Bakalalan Airport Bakalalan WBGQ 2,900
3 Long Lellang Airport Long Datih WBGF 1,400
38 Kota Kinabalu International Airport Kota Kinabalu WBKK 10
39 Kudat Airport Kudat WBKT 10
40 Lawas Airport Lawas WBGW 5
Country (airports (1..
Malaysia
Limit
Top 10 by SUM([Altitude])
AIRPORTS AT HIGHEST ALTITUDE IN WORLD
Name (airports .. City ICAO (..
Capitan Nicolas .. Potosi SLPO 12,913
Copacabana Air.. Copacabana SLCC 12,591
Daocheng Yadin.. Daocheng ZUDC 14,472
El Alto Internati.. La Paz SLLP 13,355
Golog Maqin Ai.. Golog ZLGL 12,426
Inca Manco Cap.. Juliaca SPJL 12,552
Kangding Airpo.. Kangding ZUKD 14,042
Ngari Gunsa Air.. Shiquanhe ZUAL 14,022
Qamdo Bangda .. Bangda ZUBD 14,219
Yushu Batang A.. Yushu ZYLS 12,816
ber of airports
airports at higher altitude with in...
Airlines within a country
NUmber of Flights from Airports
number of Airlines
Airports at higher altitude within ...
Airports at highest alititude in w...
Country With Maximum Number...
Story 1

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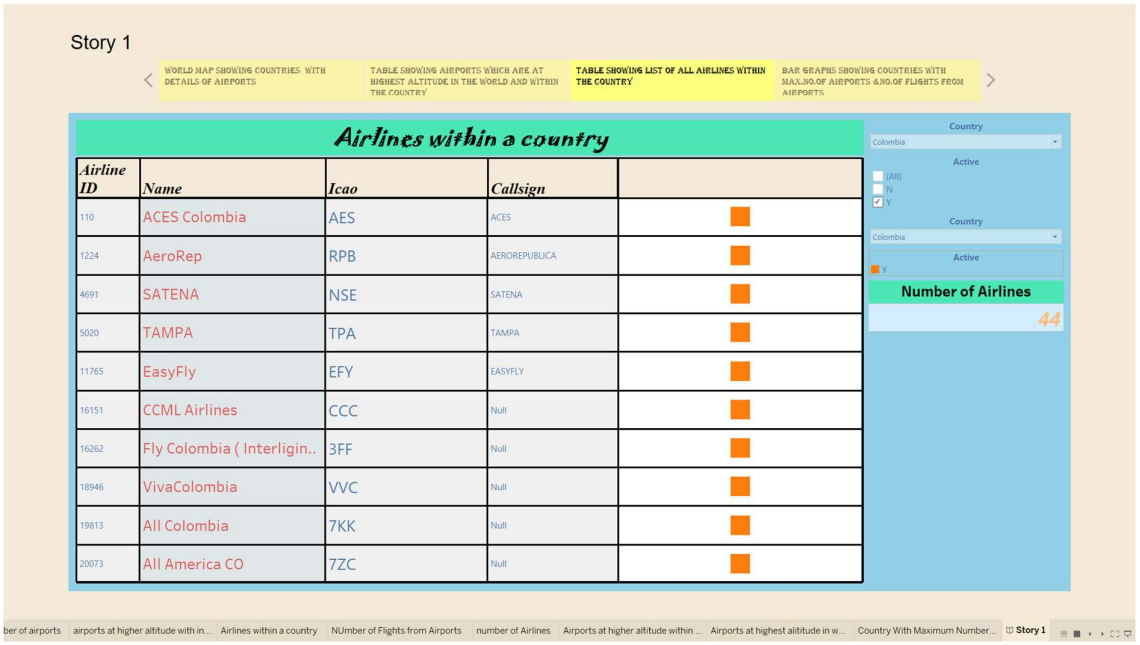
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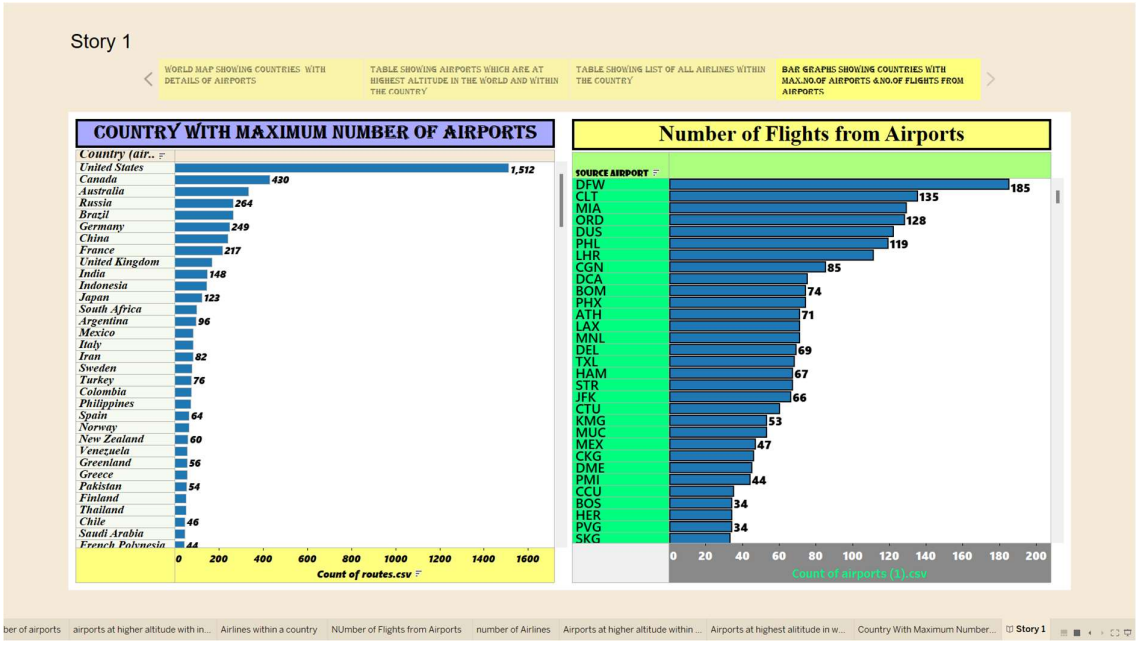
BAR GRAPHS SHOWING COUNTRIES WITH MAX.NO.OF AIRPORTS &NO.OF FLIGHTS FROM AIRPORTS
Airlines within a country
Airline ID | Name | Icao | Callsign
110 | ACES Colombia | AES | ACES
1224 | AeroRep | RPB | AEROREPUBLICA
4691 | SATENA | NSE | SATENA
5020 | TAMPA | TPA | TAMPA
11765 | EasyFly | EFY | EASYFLY
16151 | CCML Airlines | CCC | Null
16262 | Fly Colombia (Interligin.. | 3FF | Null
18946 | VivaColombia | VVC | Null
19813 | All Colombia | 7KK | Null
20073 | All America CO | 7ZC | Null
Country
Colombia
Active
(All)
N
Y
Country
Colombia
Active
Y
Number of Airlines
44
ber of airports
airports at higher altitude with in...
Airlines within a country
NUmber of Flights from Airports
number of Airlines
Airports at higher altitude within ...
Airports at highest alititude in w...
Country With Maximum Number...
Story 1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COUNTRY WITH MAXIMUM NUMBER OF AIRPORTS
Country (air..
United States 1,512
Canada 430
Australia
Russia 264
Brazil
Germany 249
China
France 217
United Kingdom
India 148
Indonesia
Japan 123
South Africa
Argentina 96
Mexico
Italy
Iran 82
Sweden
Turkey 76
Colombia
Philippines
Spain 64
Norway
New Zealand 60
Venezuela
Greenland 56
Greece
Pakistan 54
Finland
Thailand
Chile 46
Saudi Arabia
French Polynesia 44
0 200 400 600 800 1000 1200 1400 1600
Count of routes.csv
Number of Flights from Airports
SOURCE AIRPORT
DFW 185
CLT 135
MIA
ORD 128
DUS
PHL 119
LHR
CGN 85
DCA
BOM 74
PHX
ATH 71
LAX
MNL
DEL 69
TXL
HAM 67
STR
JFK 66
CTU
KMG 53
MUC
MEX 47
CKG
DME
PMI 44
CCU
BOS 34
HER
PVG 34
SKG
0 20 40 60 80 100 120 140 160 180 200
Count of airports (1).csv
ber of airports
airports at higher altitude with in...
Airlines within a country
NUmber of Flights from Airports
number of Airlines
Airports at higher altitude within ...
Airports at highest alititude in w...
Country With Maximum Number...
Story 1

ADVANTAGES :

- Enhanced efficiency: The insights gained from analyzing global air transportation data can help stakeholders to automate tasks and streamline processes, leading to enhanced efficiency. For example, airlines can use this data to automate flight planning and scheduling, and airports can use it to automate passenger check-in and baggage handling.
- Increased innovation: By understanding the trends and patterns in global air transportation, stakeholders can identify new opportunities and develop innovative solutions to meet the needs of the industry. For example, airlines can use this data to develop new services and amenities, and airports can use it to design new terminals and facilities.
- Improved safety: Insights from global air transportation data can help stakeholders to identify and mitigate safety risks. For example, airlines can use this data to track aircraft maintenance records and to identify potential mechanical problems.

DISADVANTAGES :

- Privacy concerns: Global air transportation data contains a wealth of sensitive information about passengers and cargo. It is important to ensure that this data is used responsibly and that privacy protections are in place.
- Security risks: Global air transportation data could be used by malicious actors to target aircraft, passengers, or cargo. It is important to implement robust security measures to protect this data from cyberattacks.
- ✓ Misuse of data: Global air transportation data could be misused by stakeholders to gain an unfair advantage over their competitors. For example, an airline could use this data to target customers who are more likely to pay higher fares.

APPLICATIONS:

- ✓ Route optimization: Airlines can use insights from global air transportation data to optimize their flight schedules and routes. This can lead to reduced fuel costs, improved on-time performance, and increased customer satisfaction.

- ✓ Capacity planning: Airports can use insights from global air transportation data to plan for future capacity needs. This can help to ensure that airports are able to handle the expected growth in air traffic without congestion or delays.

- ✓ Safety and security: Government agencies and airlines can use insights from global air transportation data to identify and mitigate safety and security risks. For example, insights from this data can be used to identify trends in accidents and incidents, to develop new safety procedures, and to detect potential security threats.

- ✓ Economic development: Government agencies can use insights from global air transportation data to promote economic development. For example, this data can be used to identify underserved regions and to develop policies to attract new air service.

CONCLUSION

The project to unlock insights of global air transportation has the potential to revolutionize the way that the industry operates. The platform that will be developed will provide users with the data and tools they need to make informed decisions, enhance efficiency, and increase innovation.

FUTURE SCOPE:

- The rise of artificial intelligence (AI) and machine learning (ML): AI and ML have the potential to revolutionize the way that global air transportation data is analyzed. These technologies can be used to develop new tools and techniques that can identify patterns and trends in the data more quickly and accurately than humans can. This will enable stakeholders to gain insights from the data that were previously unattainable.

- The growth of the Internet of Things (IoT): The IoT is connecting more and more devices to the internet, including aircraft, airport equipment, and passenger devices. This is generating a vast amount of data that can be used to improve the efficiency, safety, and sustainability of air travel. By unlocking insights from this data, stakeholders can make better decisions about their operations and improve the overall experience for passengers.