

## ***The Global Air Transportation Network***



**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,ICAO) longitudes, latitudes, altitudes of airports across the world with detailed time zone and day light saving data.**

**Additionally, this includes information about airlines sources n including their ID'S , name aliases, IATA, ICAO Codes and callsigns country of origin and active /inactive status.**

**Similarly, it also covers the route details such as airline sources to destination airports along with essential details .**

## **Buisness Requirements:**

**The Buisness requirements of the global Air Transportation Network. Airports, Airlines, and routed dataset is to provide stakeholders in the aviation industry with accurate, up-to-date.**

**Information on the world wide air transportation network.**

**The dataset is intended to help stakeholders in the aviation industry with accurate, up-to-date information on the worldwide air transportation network.**

**The dataset is intended to help stakeholders make informed decisions related to business growth, investment, capacity planning, and infrastructure development.**

**Using data analytics and visualization tools like tableau, the dataset can be analyzed to identify trends and patterns in the air transportation network..**

**And providing valuable insights into the state of the Industry.**

**This information can be used to optimize routes ,improve operational efficiency ,and enhance custom experience.**

**By providing a comprehensive collection of data related to the air transportation network, the dataset can help stakeholders**

## **Social and Buisness Impact.**

**Socially the dataset can contribute to the development of air transportation network that are more efficient .**

From a business perspective the dataset can has a significant impact on aviation industry.

This dataset can help to identify new business opportunities.

**Milestone: 2 Data collection and extraction from.**

*Collect Dataset. Column Description for airports.csv: the*

**Name:** The name of the airport. (String)

**City:** The city the airport is located in. (String)

**country:** The country the airport is located in. (String)

**IATA:** The International Air Transport Association code for the airport. (String)

**ICAO:** The International Civil Aviation Organization code for the airport. (String)

**Latitude:** The latitude of the airport. (Float)

**Longitude:** The longitude of the airport. (Float)

**Altitude:** The altitude of the airport. (Float)

**Timezone:** The timezone of the airport. (String)

**DST:** The Daylight Savings Time of the airport. (String)

**Tz database time zone:** The timezone of the airport in the Tz database. (String)

**Type:** The type of airport (large\_airport, medium\_airport etc.). (String) **Source:** The source of the data. (String)

#### **Column Description for airplanes.csv:**

**Name:** The name of the airport. (String) **IATA code:** International Air Transport Association code, a three-letter code used to identify airports. (String)

**ICAO code:** International Civil Aviation Organization code, a four-letter code used to identify airports. (String)

**Column Description for airlines.csv:** **Name:** The name of the airport. (String)

**IATA:** The International Air Transport Association code for the airport. (String)

**ICAO:** The International Civil Aviation Organization code for the airport. (String)

**Country:** The country the airport is located in. (String)

**Alias:** An alternate name for the airport. (String)

**Callsign:** The call sign of the airline operating at the airport. (String)

**Active:** An alternate name for the airport. (String)

**Column Description for routes.csv:** **Airline:** The name of the airline operating the route. (String)

**Source airport:** The IATA code of the airport from which the route originates. (String)

**Destination airport:** The IATA code of the airport to which the route is headed. (String)

**Codeshare:** Indicates whether the route is operated by another airline under a codeshare agreement. (Boolean) **Stops:** The number of stops on the route. (Integer) **Equipment:** The type of aircraft used on the route. (String)

## Activity 2: Connect dataset country and state with tableau.

The screenshot shows the Tableau Public interface with a workbook named 'airlines+'. The 'Connections' pane on the left lists the data sources: 'airlines' (Text file), 'airlines.csv', 'airplanes.csv', 'airports.csv', and 'routes.csv'. The 'Files' pane shows a list of these CSV files. The main workspace displays a diagram where 'airlines.csv' is connected to 'routes.csv', which is then connected to both 'airplanes.csv' and 'airports.csv'. Below the diagram, a data preview for 'airlines.csv' is shown, displaying 9 fields and 6162 rows. The preview table has columns: Index, Airline ID, Name, Alias, Iata, Icao, and Cal. The data rows show various flight types and airline codes.

| #     | airlines.csv | airlines.csv                    | airlines.csv | airlines.csv | airlines.csv | airlines.csv |
|-------|--------------|---------------------------------|--------------|--------------|--------------|--------------|
| Index | Airline ID   | Name                            | Alias        | Iata         | Icao         | Cal          |
| 0     | -1           | Unknown                         | \N           | -            | null         | \N           |
| 1     | 1            | Private flight                  | \N           | -            | null         | Gt           |
| 2     | 2            | 135 Airways                     | \N           | null         | GNL          | NI           |
| 3     | 3            | 1Time Airline                   | \N           | 1T           | RNX          | WYT          |
| 4     | 4            | 2 Sqn No 1 Elementary Flying... | \N           | null         | WYT          |              |

### Milestone3: Data preparation .

#### Activity 1: Preparing data for visualization

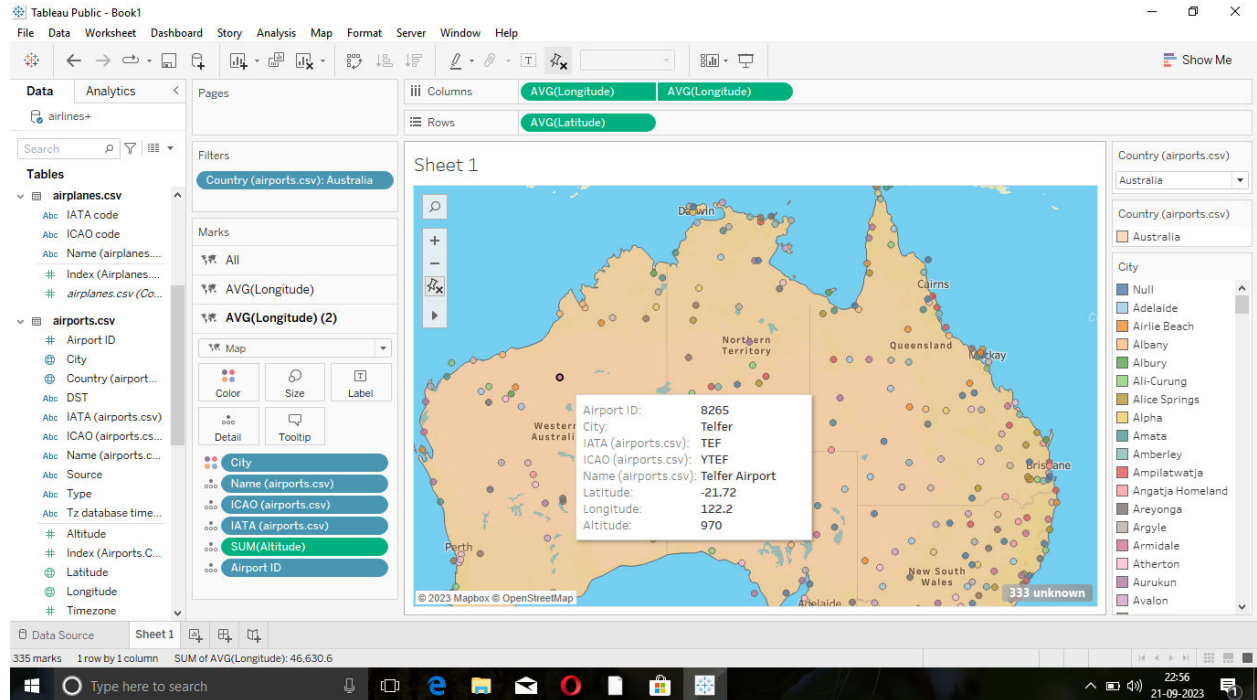
Data modules are containers that describe data and rules for combining and shaping data to prepare it for analysis and visualization.

### Milestone :4 Data visualization

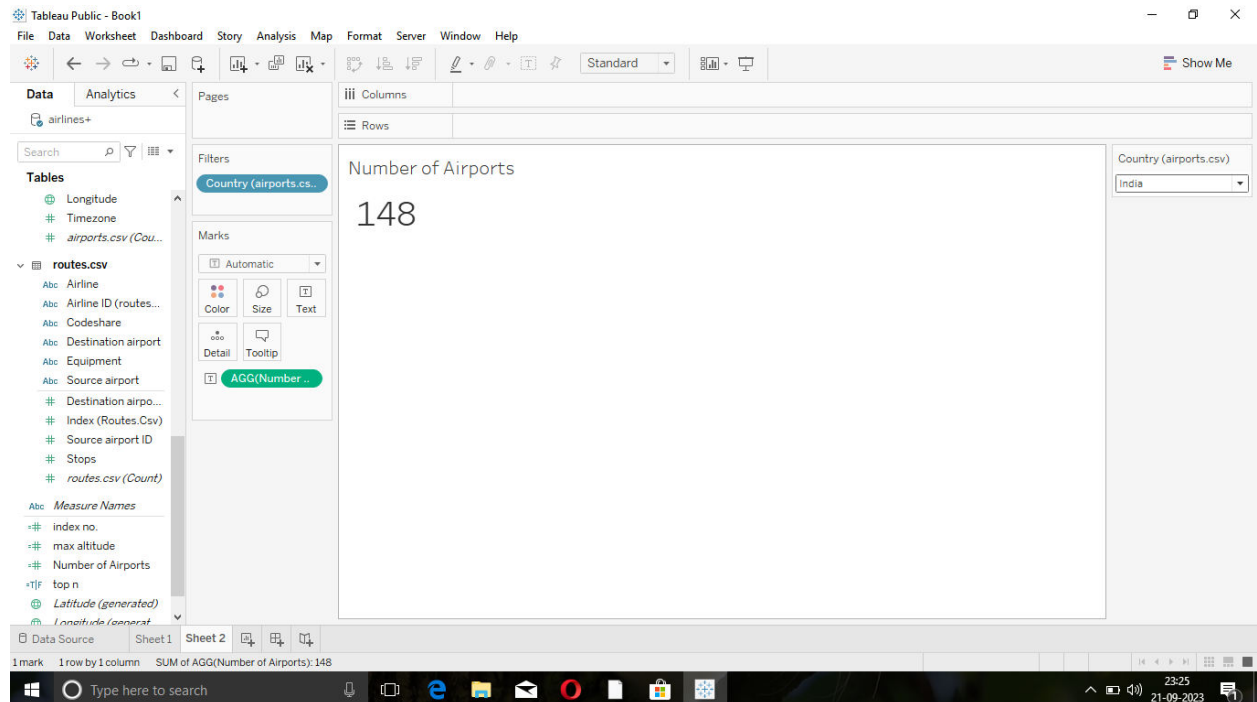
Data visualization is the process of creating graphical representation of data in order to help people understand and explore the information.

## Activity 1.1 .

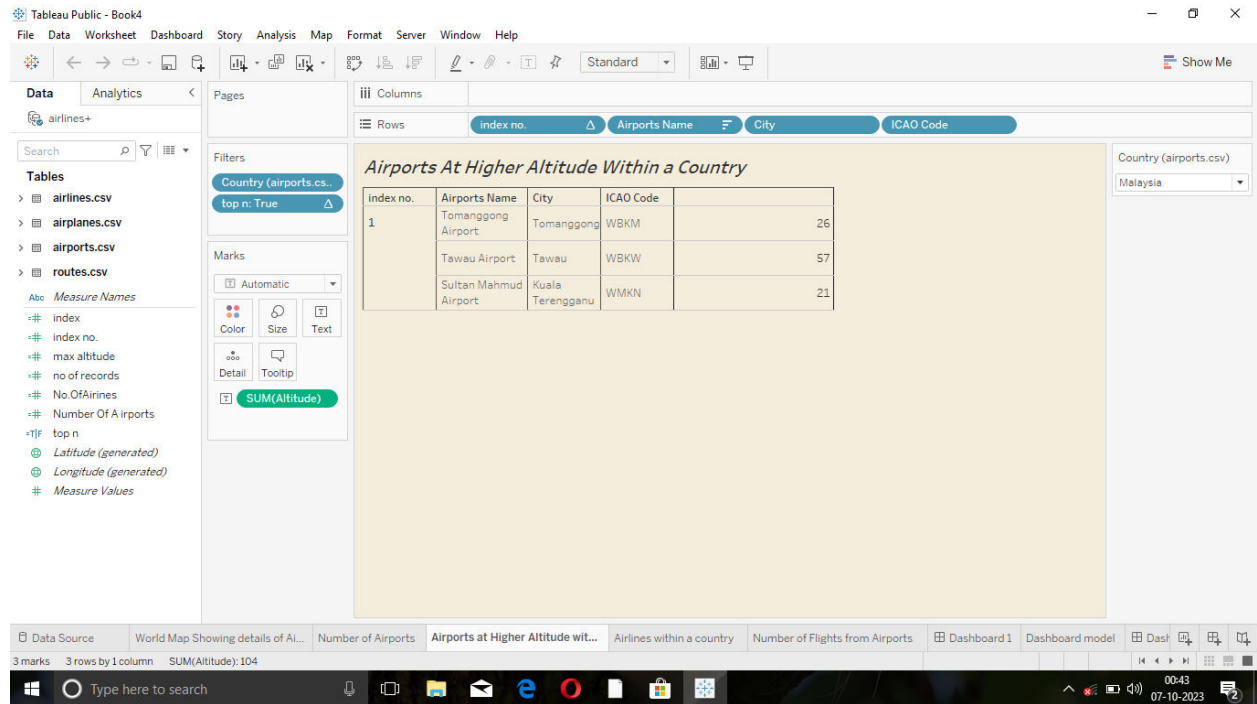
### World Map Showing Details of Airports within a Country .



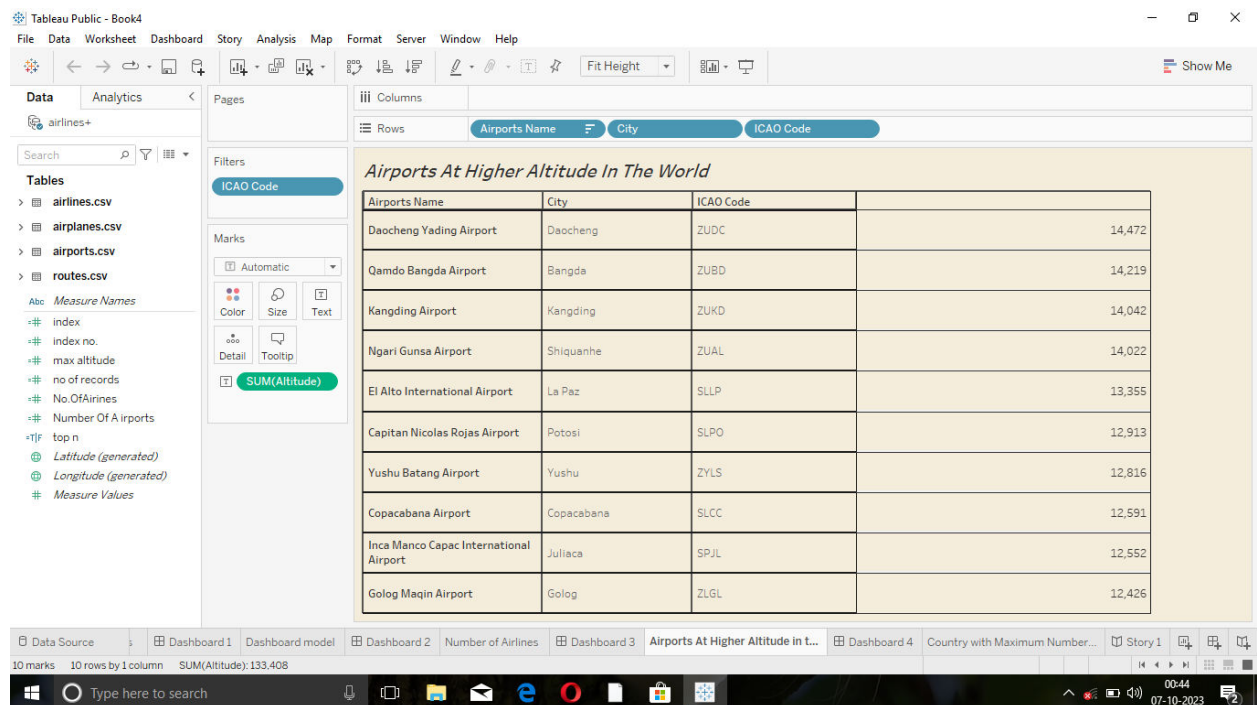
## Activity :1.2 Number of Airports within the country.



## Activity1. 3: Airports at Higher Altitude within a country.

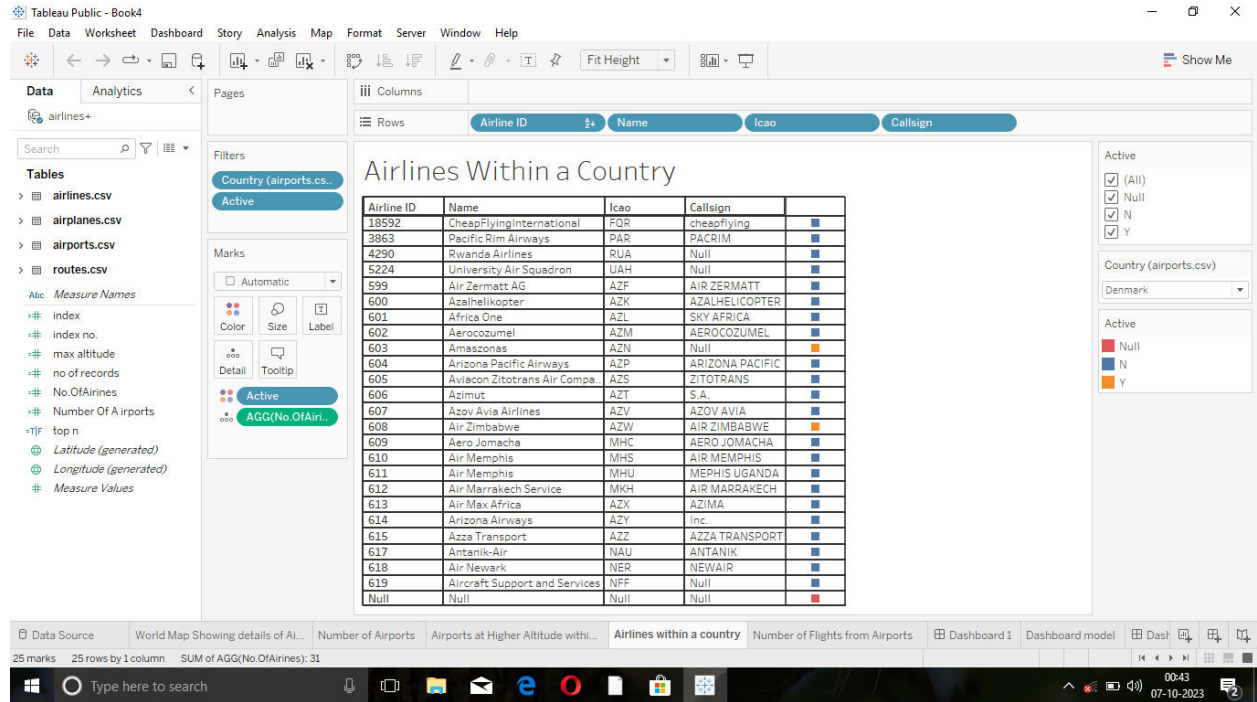


## Activity1. 4. Airports at Higher Altitude Within the world .

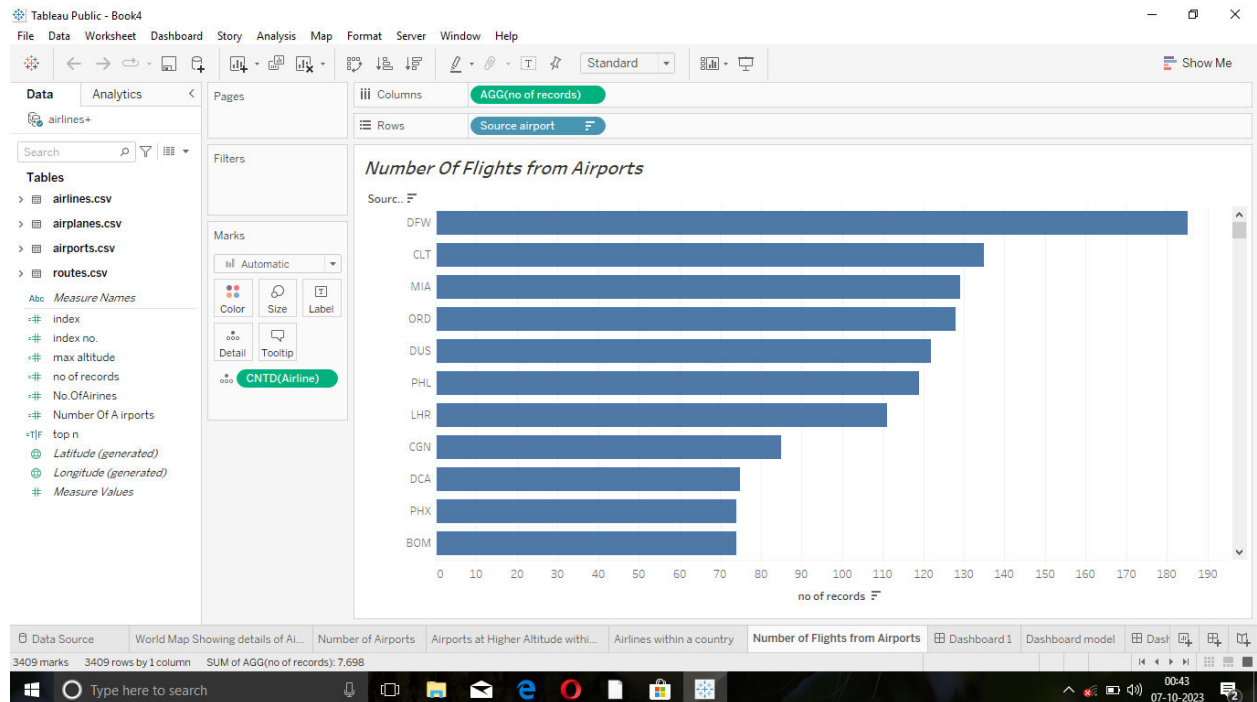




## Activity1.5. Airlines within a country



## Activity1.6. Number of flights from Airports.



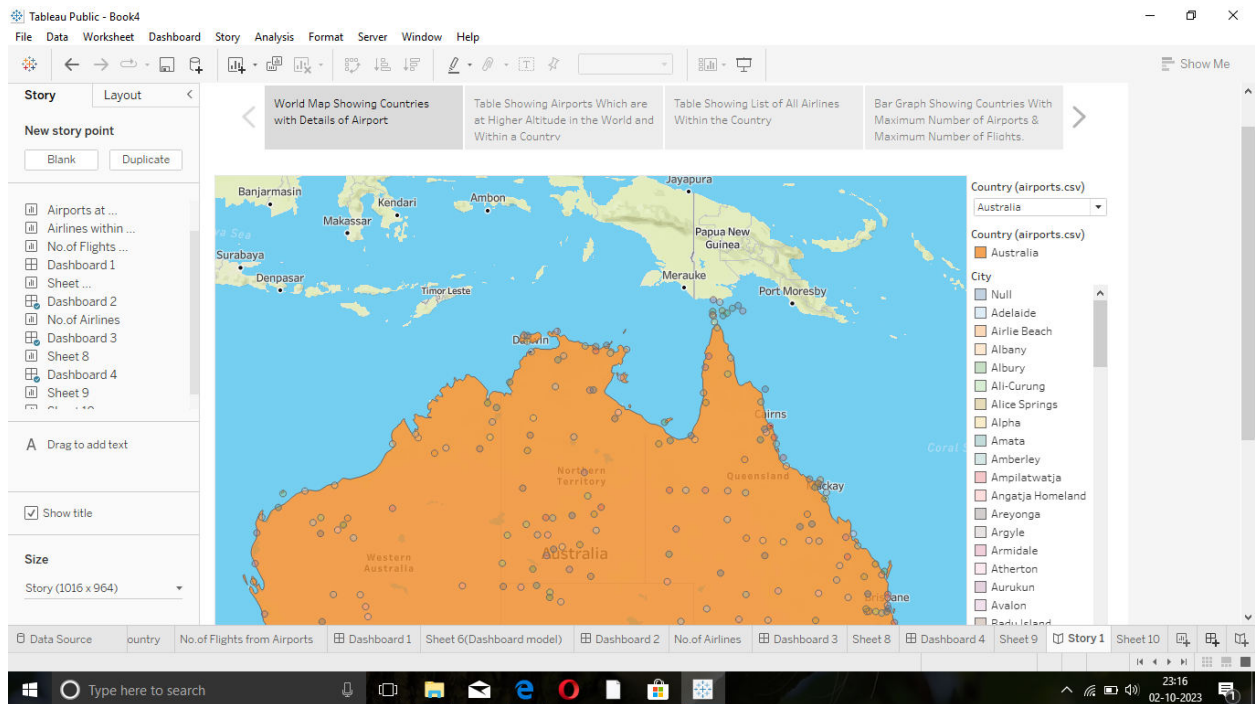
## Milestone 5: Dashboard.

**A dashboard is a graphical user interface (GUI) that displays information and data in an organized easy to read format.**

## Activity1: Responsive and Design of Dashboard

## Dashboard 1:

**It shows the details of airports within the country.**



## Dahboard2: Showing Airports at Higher Altitude within the country and Airports at Higher Altitude in the World.

Tableau Public - Book4

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Dashboard Layout

Country (airports.csv)  
Malaysia

### Airports At Higher Altitude Within a Country

| index no. | Airports Name         | City             | ICAO Code |    |
|-----------|-----------------------|------------------|-----------|----|
| 1         | Tomanggong Airport    | Tomanggong       | WBKM      | 26 |
|           | Tawau Airport         | Tawau            | WBKW      | 57 |
|           | Sultan Mahmud Airport | Kuala Terengganu | WMKN      | 21 |

### Airports At Higher Altitude In The World

| Airports Name                    | City       | ICAO Code |        |
|----------------------------------|------------|-----------|--------|
| 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     | SLP       | 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.. | Juliaca    | SPJL      | 12,552 |
| Golog Maqin Airport              | Golog      | ZLGL      | 12,426 |

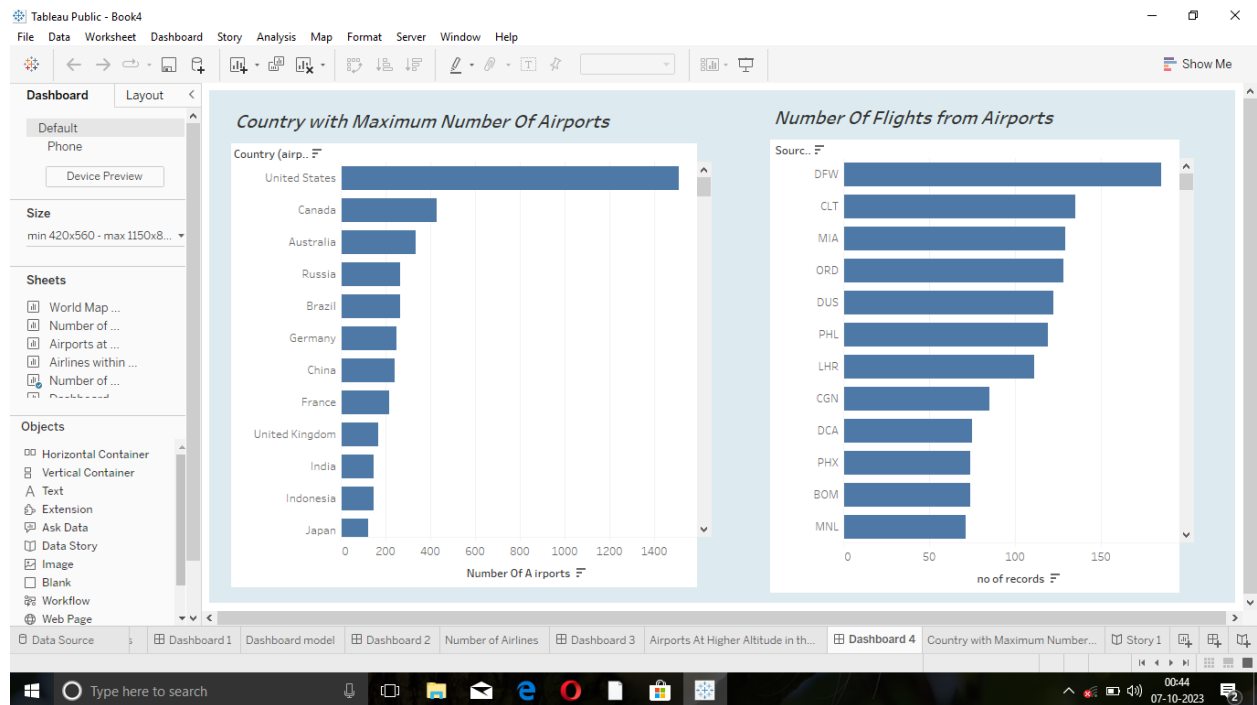
Objects: Horizontal Container, Vertical Container, Text, Extension, Ask Data, Data Story, Image, Blank, Workflow, Web Page

Dashboard 1 Dashboard model Dashboard 2 Number of Airlines Dashboard 3 Airports At Higher Altitude in th... Dashboard 4 Country with Maximum Number... Story 1

Type here to search

00:44 07-10-2023

### Dashboard 3: Showing country with Maximum Number of Airports and Number of Flights from Airports.

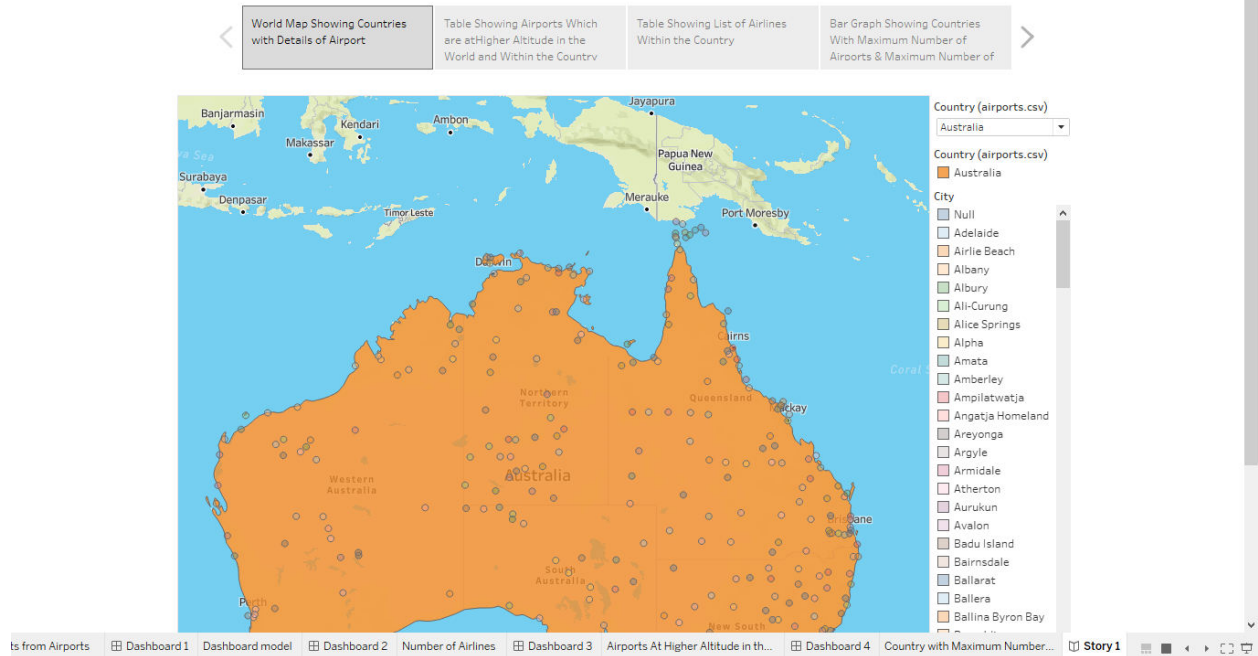


### Milestone 6: Story

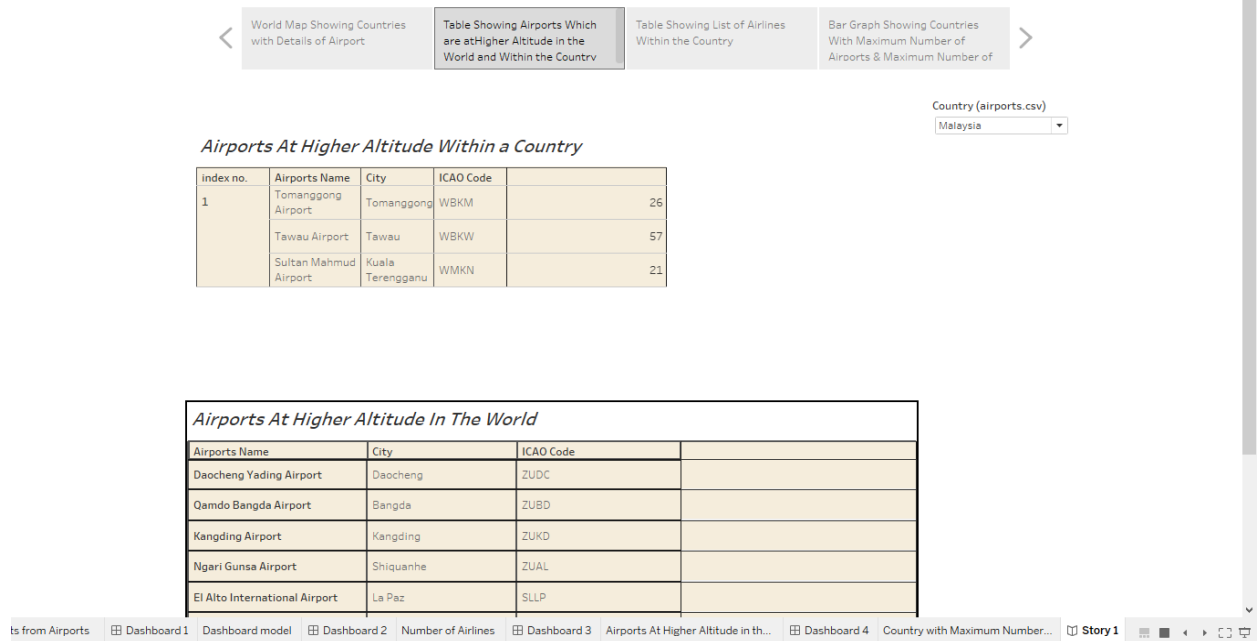
A Data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand.

## Activity1: No of scenes of story

### Global Air Transportation Network



### Global Air Transportation Network



## Global Air Transportation Network

World Map Showing Countries with Details of Airport | Table Showing Airports Which are at Higher Altitude in the World and Within the Country | Table Showing List of Airlines Within the Country | Bar Graph Showing Countries With Maximum Number of Airports & Maximum Number of

### Airlines Within a Country

| Airline ID | Name                         | Icao | Callsign     |  |
|------------|------------------------------|------|--------------|--|
| 11765      | EasyFly                      | EFY  | EASYFLY      |  |
| 11767      | Polar Airlines               | \N   | Null         |  |
| 11794      | Catovair                     | \N   | CATOVAIR     |  |
| 16804      | Compania de Aviacion Faucett | CFP  | Null         |  |
| 18946      | VivaColombia                 | VVC  | Null         |  |
| 19232      | Nürnberg Flugdienst          | NFD  | Null         |  |
| 1979       | Danish Army                  | DAR  | DANISH ARMY  |  |
| 1980       | Danish Navy                  | DNY  | DANISH NAVY  |  |
| 1981       | Danu Oro Transportas         | DNU  | DANU         |  |
| 1982       | Darta                        | DRT  | DARTA        |  |
| 1983       | Darwin Airline               | DWT  | DARWIN       |  |
| 1984       | Dasab Airlines               | DSQ  | DASAB AIR    |  |
| 1985       | Dash Air Charter             | DSH  | DASH CHARTER |  |
| 1986       | Dash Aviation                | DSH  | DASH CHARTER |  |

### NUMBER OF AIRLINES

22

Active

☒ (All)

☒ Null

☒ N

☒ Y

Country (airports.csv)

Afghanistan

Active

☒ Null

☒ N

☒ Y

Country (airports.csv)

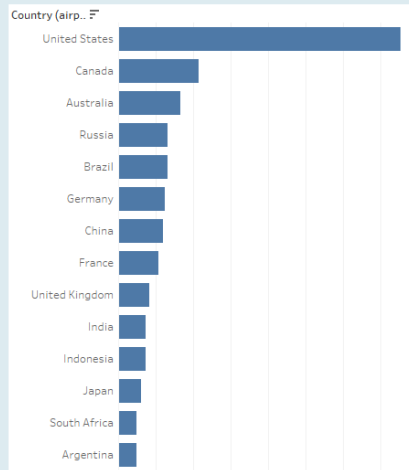
Afghanistan

is from Airports | Dashboard 1 | Dashboard model | Dashboard 2 | Number of Airlines | Dashboard 3 | Airports At Higher Altitude in th... | Dashboard 4 | Country with Maximum Number... | Story 1

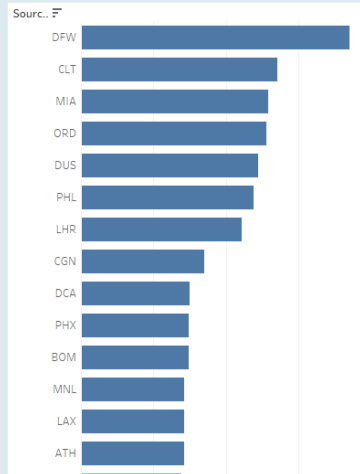
## Global Air Transportation Network

World Map Showing Countries with Details of Airport | Table Showing Airports Which are at Higher Altitude in the World and Within the Country | Table Showing List of Airlines Within the Country | Bar Graph Showing Countries With Maximum Number of Airports & Maximum Number of

### Country with Maximum Number Of Airports



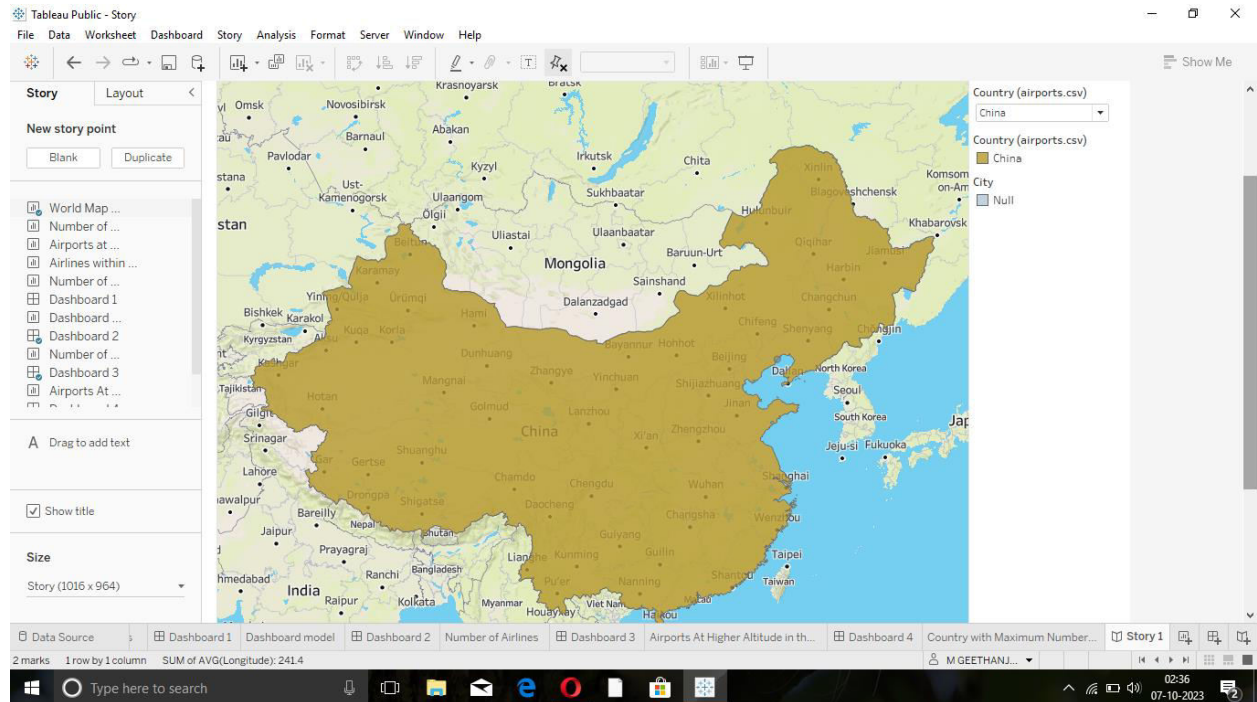
### Number Of Flights from Airports

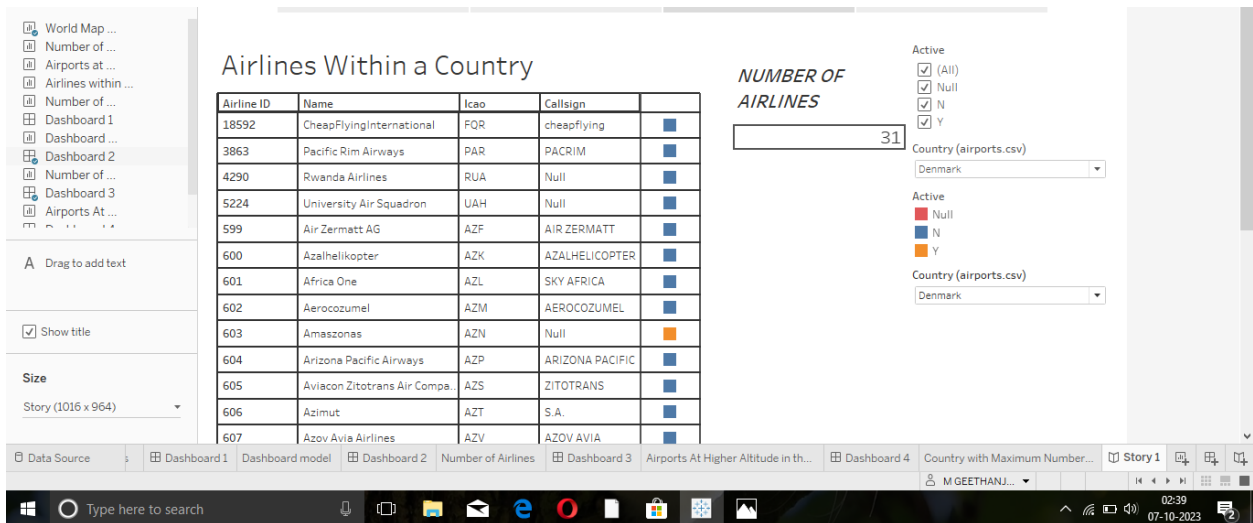


is from Airports | Dashboard 1 | Dashboard model | Dashboard 2 | Number of Airlines | Dashboard 3 | Airports At Higher Altitude in th... | Dashboard 4 | Country with Maximum Number... | Story 1

# Milestone:7 Performance Testing

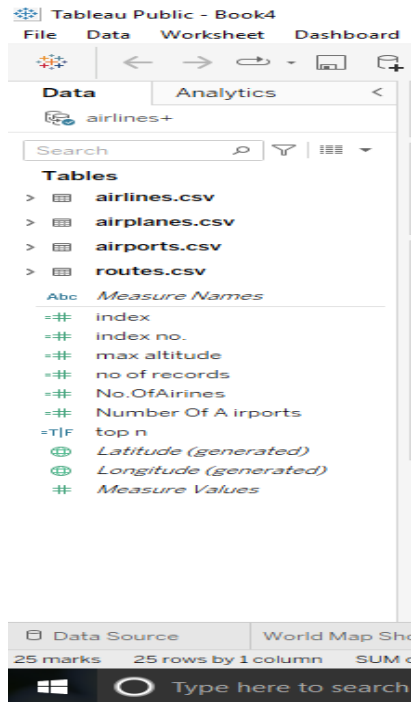
## Activity 2: Utilization of Filters





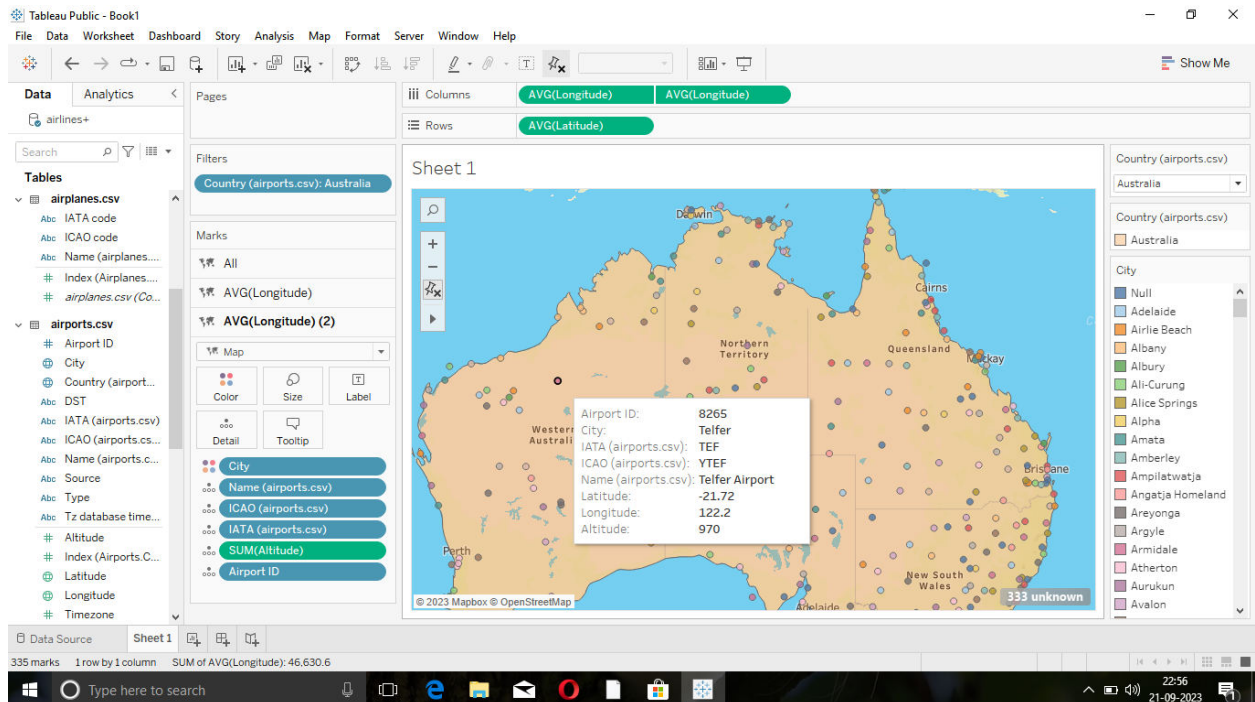


## Activity :3 No. of Calculation Fields



## Activity : 4 No. of Visualizations /Graphs.

### 1. World Map Shows the details of Airports within the Country.



## 2. Table showing airports at Higher Altitude within the Country and in the world also.

Tableau Public - Book4

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Dashboard Layout

Default Phone Device Preview

Size min 420x560 - max 1150x8...

Sheets

- World Map ...
- Number of ...
- Airports at ...
- Airlines within ...
- Number of ...

Objects

- Horizontal Container
- Vertical Container
- Text
- Extension
- Ask Data
- Data Story
- Image
- Blank
- Workflow
- Web Page

**Airports At Higher Altitude Within a Country**

Country (airports.csv) Malaysia

| index no. | Airports Name         | City             | ICAO Code |    |
|-----------|-----------------------|------------------|-----------|----|
| 1         | Tomanggong Airport    | Tomanggong       | WBKM      | 26 |
|           | Tawau Airport         | Tawau            | WBKW      | 57 |
|           | Sultan Mahmud Airport | Kuala Terengganu | WMKN      | 21 |

**Airports At Higher Altitude In The World**

| Airports Name                      | City       | ICAO Code |        |
|------------------------------------|------------|-----------|--------|
| 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 ... | Juliacca   | SPJL      | 12,552 |
| Golog Maqin Airport                | Golog      | ZLGL      | 12,426 |

Data Source Dashboard 1 Dashboard model Dashboard 2 Number of Airlines Dashboard 3 Airports At Higher Altitude in th... Dashboard 4 Country with Maximum Number... Story 1

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## 3. Table Showing Airlines operating within the Country.

Tableau Public - Book4

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Data Analytics Pages

Search airlines+

Tables

- airlines.csv
- airplanes.csv
- airports.csv
- routes.csv

Measure Names

- index
- index no.
- max altitude
- no of records
- No. Of Airlines
- Number Of Airports
- top n
- Latitude (generated)
- Longitude (generated)
- Measure Values

Filters

Country (airports.csv) Active

Marks

Automatic Color Size Label Detail Tooltip

Active AGG(No. Of Airi...

**Airlines Within a Country**

Country (airports.csv) Denmark

| Airline ID | Name                           | Icao | Callsign        |  |
|------------|--------------------------------|------|-----------------|--|
| 18592      | CheapFlyingInternational       | FOR  | cheapflying     |  |
| 3863       | Pacific Rim Airways            | PAR  | PACRIM          |  |
| 4290       | Rwanda Airlines                | RUA  | Null            |  |
| 5224       | University Air Squadron        | UAH  | Null            |  |
| 599        | Air Zermatt AG                 | AZF  | AIR ZERMATT     |  |
| 600        | Azalhelikopter                 | AZK  | AZALHELICOPTER  |  |
| 601        | Africa One                     | AZL  | SKY AFRICA      |  |
| 602        | Aerocozumel                    | AZM  | AEROCOZUMEL     |  |
| 603        | Amazonas                       | AZN  | Null            |  |
| 604        | Arizona Pacific Airways        | AZP  | ARIZONA PACIFIC |  |
| 605        | Aviacon Zitotrans Air Compa... | AZS  | ZITOTRANS       |  |
| 606        | Azimut                         | AZT  | S.A.            |  |
| 607        | Azov Avia Airlines             | AZV  | AZOV AVIA       |  |
| 608        | Air Zimbabwe                   | AZW  | AIR ZIMBABWE    |  |
| 609        | Aero Jomacha                   | MHC  | AERO JOMACHA    |  |
| 610        | Air Memphis                    | MHS  | AIR MEMPHIS     |  |
| 611        | Air Memphis                    | MHU  | MEPHIS UGANDA   |  |
| 612        | Air Marrakech Service          | MKH  | AIR MARRAKECH   |  |
| 613        | Air Max Africa                 | AZX  | AZIMA           |  |
| 614        | Arizona Airways                | AZY  | Inc.            |  |
| 615        | Azza Transport                 | AZZ  | AZZA TRANSPORT  |  |
| 617        | Antanik-Air                    | NAU  | ANTANIK         |  |
| 618        | Air Newark                     | NER  | NEWAIR          |  |
| 619        | Aircraft Support and Services  | NFF  | Null            |  |
| Null       | Null                           | Null | Null            |  |

Active (All) Null Y

Country (airports.csv) Denmark

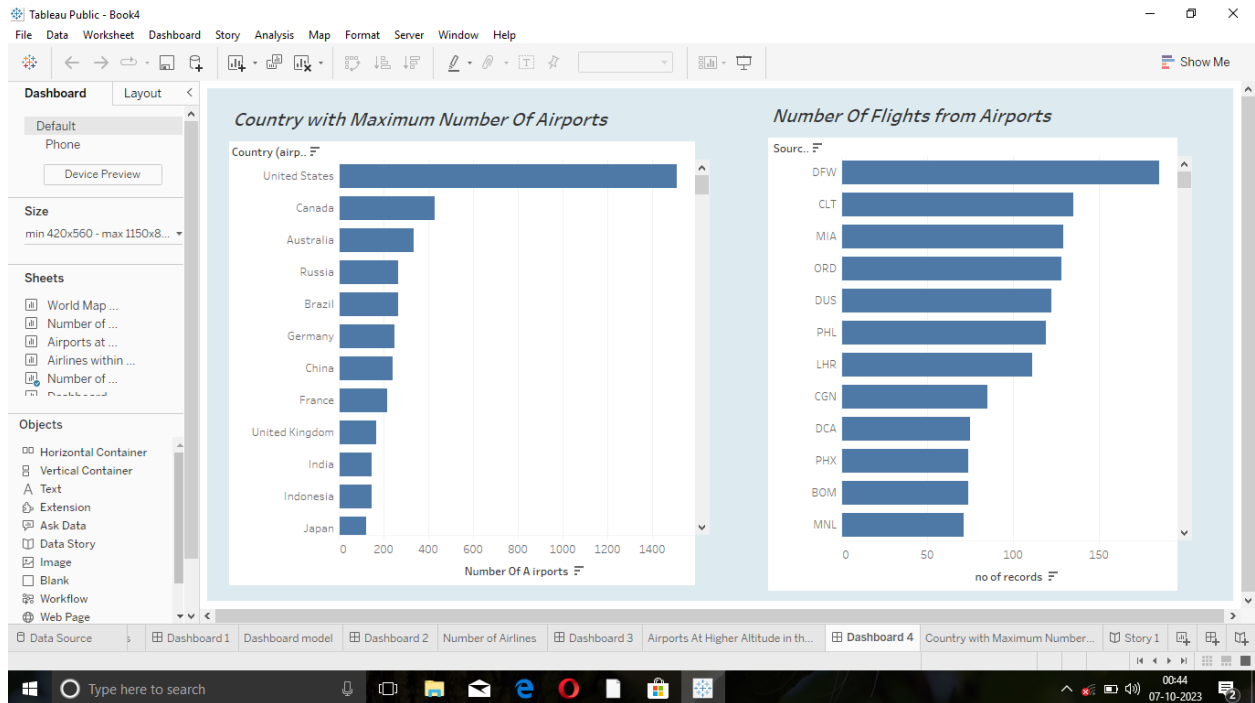
Active Null N Y

Data Source World Map Showing details of Ai... Number of Airports Airports at Higher Altitude withi... Airlines within a country Number of Flights from Airports Dashboard 1 Dashboard model Dashboard 2

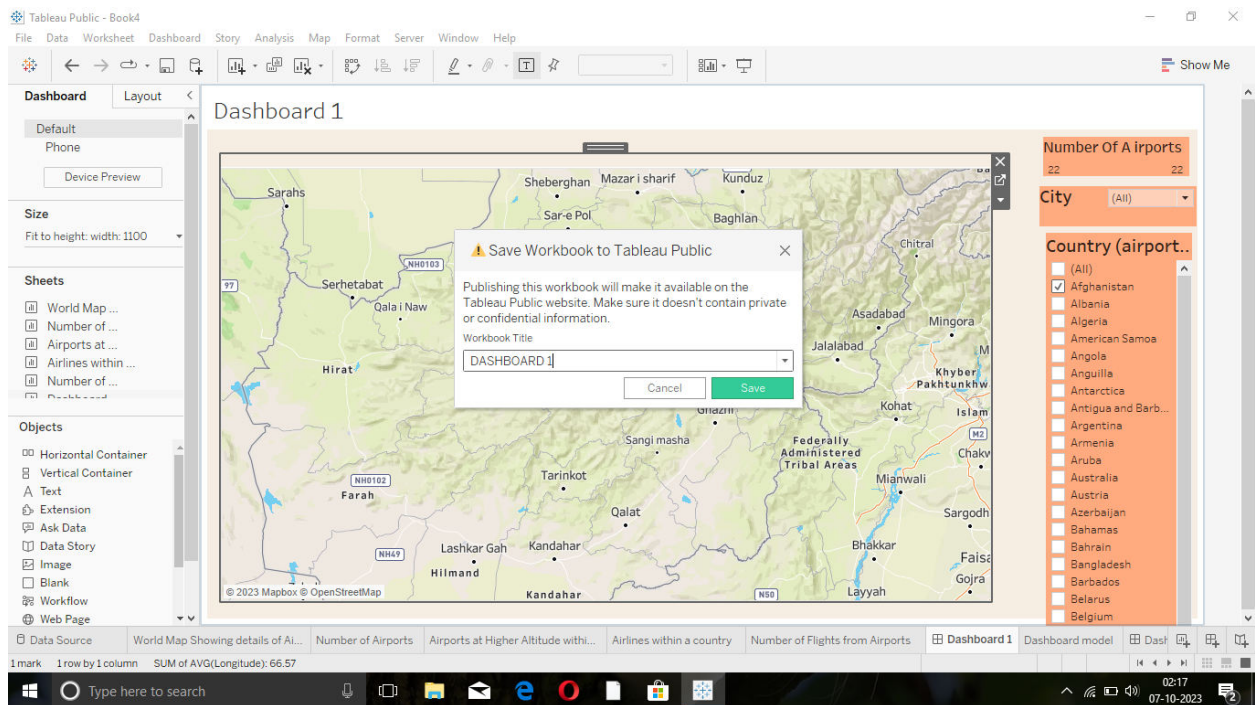
25 marks 25 rows by 1 column SUM of AGG(No. Of Airlines): 31

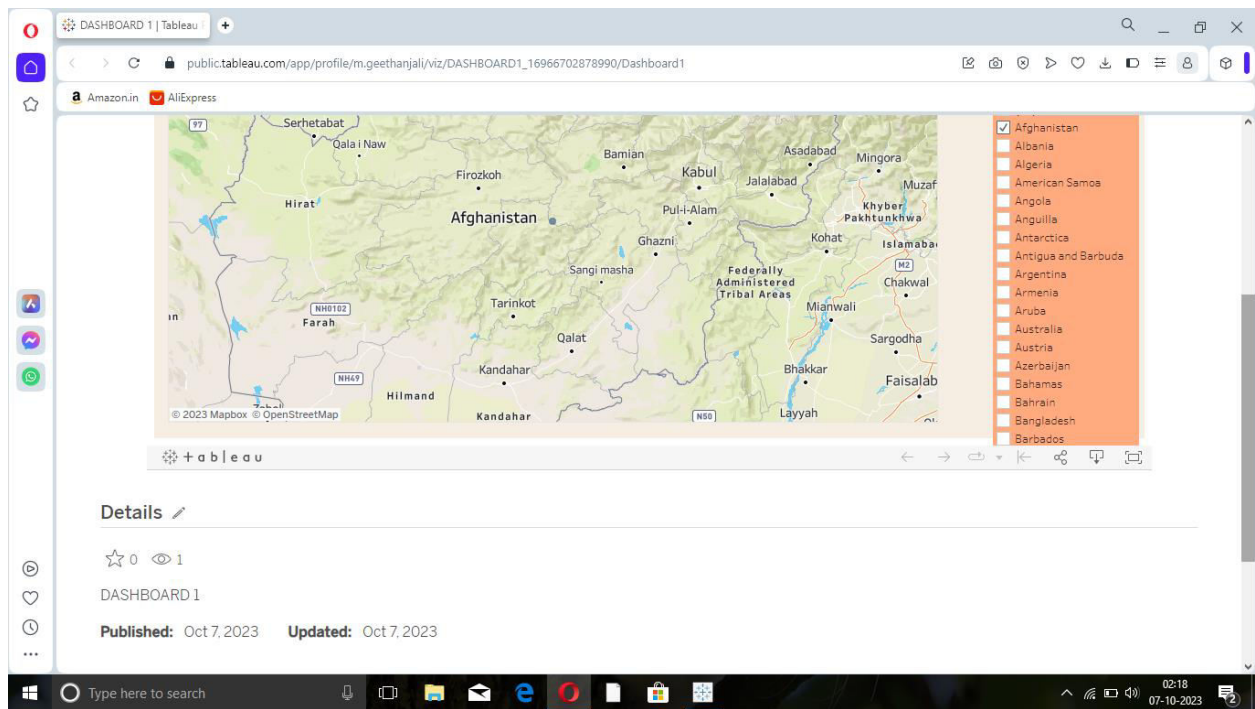
Type here to search 00:43 07-10-2023

## 4 .Bar Graphs Showing No. of Flights from Airports and No.of Airports within the Country .



## Milestone 8. Publishing. (Dashboard)





DASHBOARD 1 | Tableau (2) WhatsApp DASHBOARD 2 | Tableau

public.tableau.com/app/profile/m.geethanjali/viz/DASHBOARD2\_16966706347970/Dashboard2

Amazon.in AliExpress

|      |                               |      |                 |   |
|------|-------------------------------|------|-----------------|---|
| 603  | Amazonas                      | AZN  | Null            | ■ |
| 604  | Arizona Pacific Airways       | AZP  | ARIZONA PACIFIC | ■ |
| 605  | Aviacon Zitotrans Air Compa.  | AZS  | ZITOTRANS       | ■ |
| 606  | Azimut                        | AZT  | S.A.            | ■ |
| 607  | Azov Avia Airlines            | AZV  | AZOV AVIA       | ■ |
| 608  | Air Zimbabwe                  | AZW  | AIR ZIMBABWE    | ■ |
| 609  | Aero Jomacha                  | MHC  | AERO JOMACHA    | ■ |
| 610  | Air Memphis                   | MHS  | AIR MEMPHIS     | ■ |
| 611  | Air Memphis                   | MHU  | MEPHIS UGANDA   | ■ |
| 612  | Air Marrakech Service         | MKH  | AIR MARRAKECH   | ■ |
| 613  | Air Max Africa                | AZX  | AZIMA           | ■ |
| 614  | Arizona Airways               | AZY  | Inc.            | ■ |
| 615  | Azza Transport                | AZZ  | AZZA TRANSPORT  | ■ |
| 617  | Antanik-Air                   | NAU  | ANTANIK         | ■ |
| 618  | Air Newark                    | NER  | NEWAIR          | ■ |
| 619  | Aircraft Support and Services | NFF  | Null            | ■ |
| Null | Null                          | Null | Null            | ■ |

Details

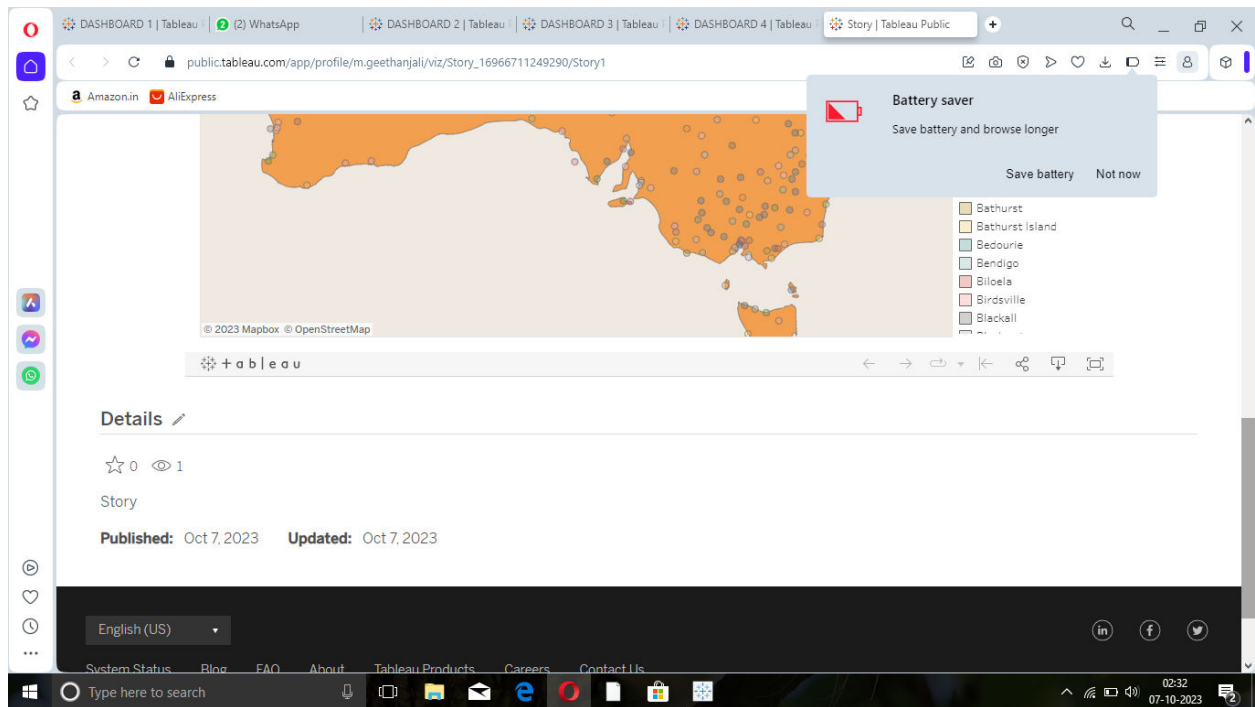
☆ 0 👁 1

DASHBOARD 2

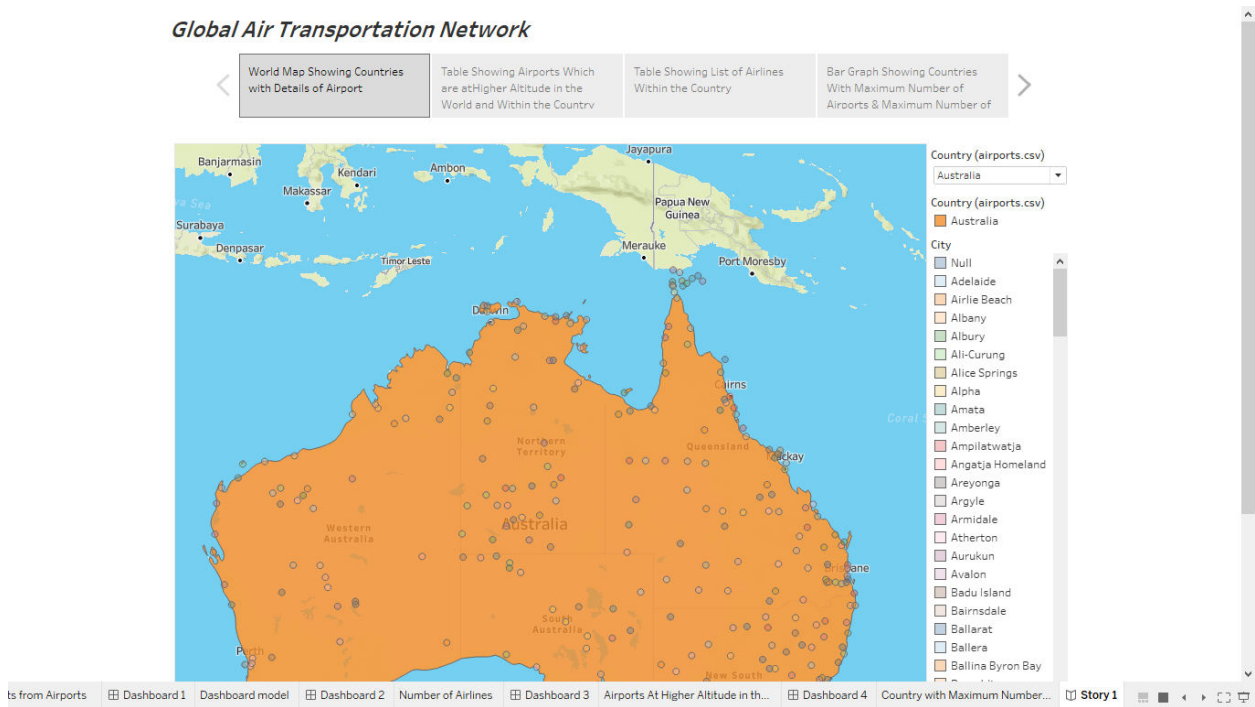
Published: Oct 7, 2023 Updated: Oct 7, 2023

02:24 07-10-2023

## Story:



## Publishing Dashboard and Story to Tableau Public Server.





## Global Air Transportation Network

< World Map Showing Countries with Details of Airport Table Showing Airports Which are at Higher Altitude in the World and Within the Country Table Showing List of Airlines Within the Country Bar Graph Showing Countries With Maximum Number of Airports & Maximum Number of

### Airlines Within a Country

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|------------|------------------------------|------|--------------|--|
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| 11767      | Polar Airlines               | \N   | Null         |  |
| 11794      | Catovair                     | \N   | CATOVAIR     |  |
| 16804      | Compania de Aviacion Faucett | CFP  | Null         |  |
| 18946      | VivaColombia                 | VVC  | Null         |  |
| 19232      | Nürnberg Flughafen           | NFD  | Null         |  |
| 1979       | Danish Army                  | DAR  | DANISH ARMY  |  |
| 1980       | Danish Navy                  | DNY  | DANISH NAVY  |  |
| 1981       | Danu Oro Transportas         | DNU  | DANU         |  |
| 1982       | Darta                        | DRT  | DARTA        |  |
| 1983       | Darwin Airline               | DWT  | DARWIN       |  |
| 1984       | Dasab Airlines               | DSQ  | DASAB AIR    |  |
| 1985       | Dash Air Charter             | DSH  | DASH CHARTER |  |
| 1986       | Dash Aviation                | DSH  | DASH CHARTER |  |

### NUMBER OF AIRLINES

22

Active  
☒ (All)  
☒ Null  
☒ N  
☒ Y

Country (airports.csv)  
Afghanistan

Active  
☒ Null  
☒ N  
☒ Y

Country (airports.csv)  
Afghanistan

is from Airports Dashboard 1 Dashboard model Dashboard 2 Number of Airlines Dashboard 3 Airports At Higher Altitude in th... Dashboard 4 Country with Maximum Number... Story 1

## Global Air Transportation Network

< World Map Showing Countries with Details of Airport Table Showing Airports Which are at Higher Altitude in the World and Within the Country Table Showing List of Airlines Within the Country Bar Graph Showing Countries With Maximum Number of Airports & Maximum Number of

### Airports At Higher Altitude Within a Country

| Index no. | Airports Name         | City             | ICAO Code |    |
|-----------|-----------------------|------------------|-----------|----|
| 1         | Tomanggong Airport    | Tomanggong       | WBKM      | 26 |
|           | Tawau Airport         | Tawau            | WBKW      | 57 |
|           | Sultan Mahmud Airport | Kuala Terengganu | WMKN      | 21 |

Country (airports.csv)  
Malaysia

### Airports At Higher Altitude In The World

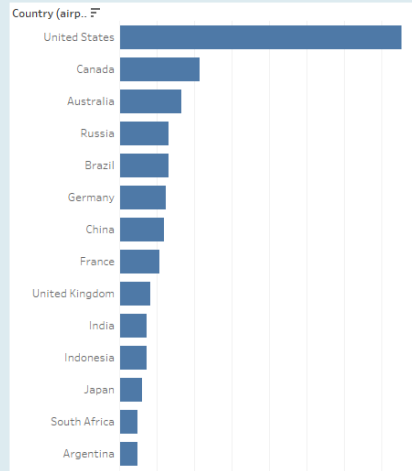
| Airports Name                 | City      | ICAO Code |  |
|-------------------------------|-----------|-----------|--|
| Daocheng Yading Airport       | Daocheng  | ZUDC      |  |
| Qamdo Bangda Airport          | Bangda    | ZUBD      |  |
| Kangding Airport              | Kangding  | ZUKD      |  |
| Ngari Gunsa Airport           | Shiquanhe | ZUAL      |  |
| El Alto International Airport | La Paz    | SLLP      |  |

is from Airports Dashboard 1 Dashboard model Dashboard 2 Number of Airlines Dashboard 3 Airports At Higher Altitude in th... Dashboard 4 Country with Maximum Number... Story 1

## Global Air Transportation Network

- < World Map Showing Countries with Details of Airport Table Showing Airports Which are at Higher Altitude in the World and Within the Country Table Showing List of Airlines Within the Country Bar Graph Showing Countries With Maximum Number of Airports & Maximum Number of

Country with Maximum Number Of Airports



Number Of Flights from Airports

