PROJECT DOCUMENTATION

GLOBAL AIR TRANSPORTATION

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, callsigns country of origin and active/inactive status.

PURPOSE:

It covers route details such as airline sources to destination airports along with essential details like codeshare stakeholder if any stops required during this journey along with the type of aircraft being used for that particular journey. 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.

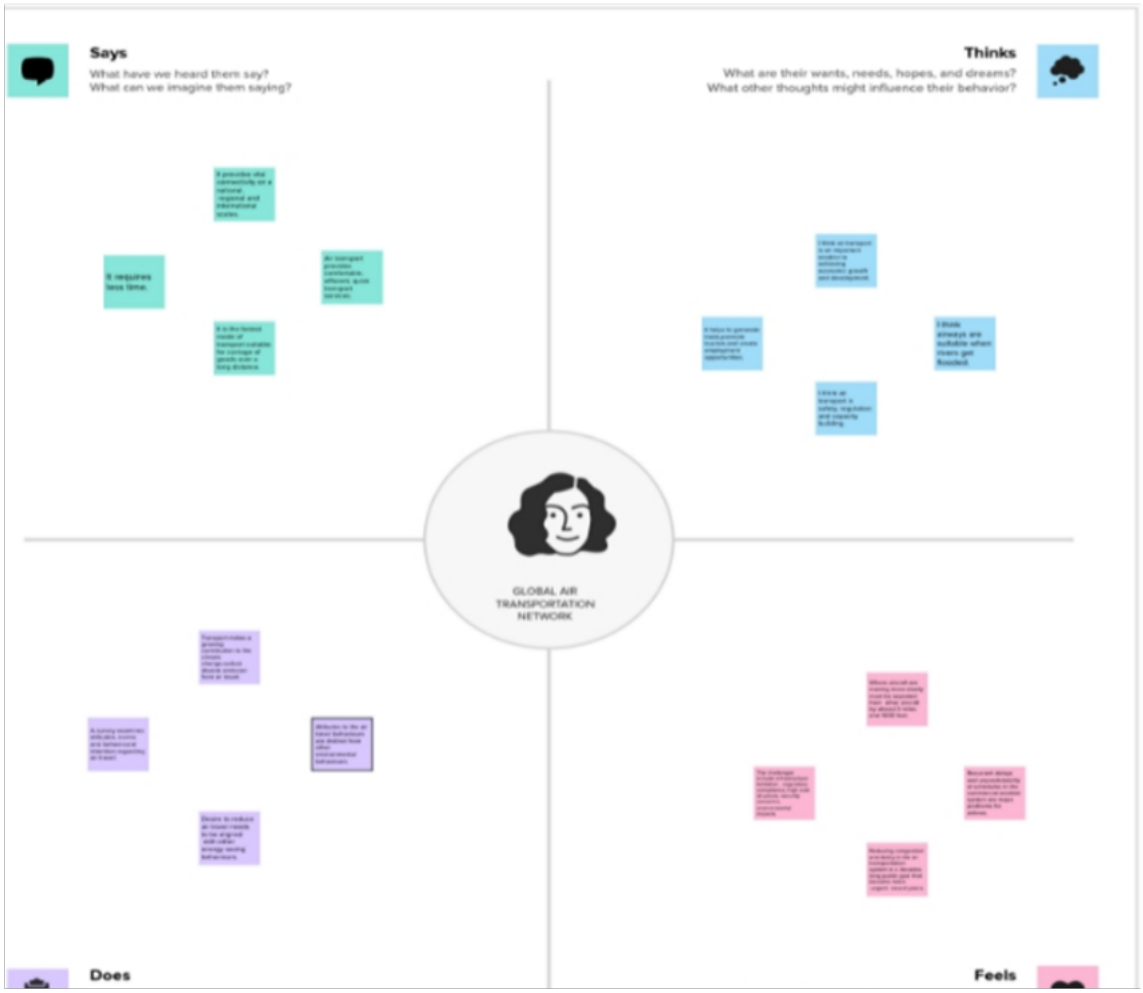
PROBLEM DEFINITION &DESIGN THIKING

Problem Understanding, also known as Problem Definition or Problem Identification, is the initial and critical phase of any data analysis or problem-solving process. It involves gaining a clear and comprehensive understanding of the problem at hand, its context, scope, and objectives.

EMPATHY MAP:

Empathy maps are an efficient tool used by designers to not only understand user behaviour, but also visually communicate those findings to colleagues, uniting the team under one shared understanding of the user. Originally

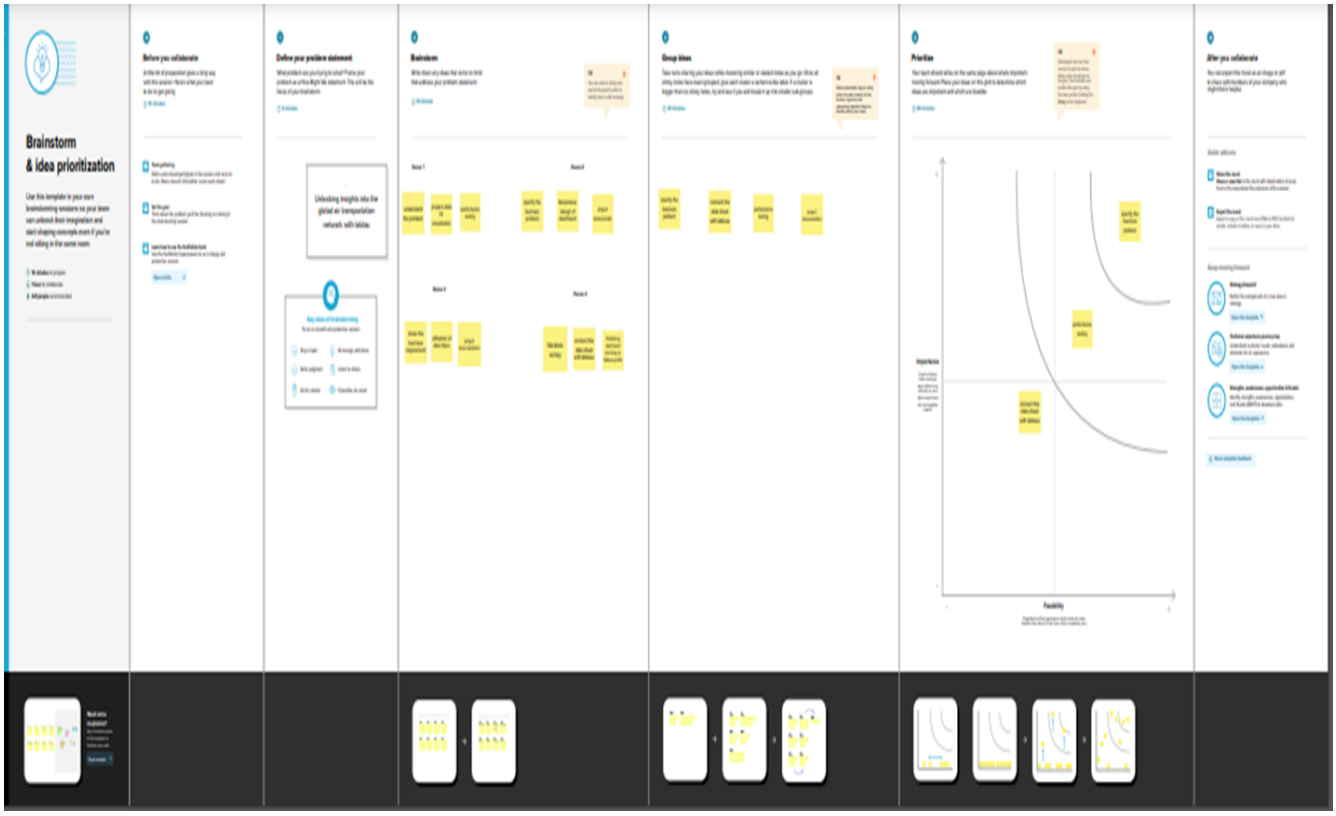
invented by Dave Gray at Plane, the empathy map was made in an attempt to limit miscommunication and misunderstanding about target audiences, including customers and users.



Brainstorming Map:

Brainstorming is a buzzword with countless definitions. As experts in creativity and ideation, we see it as a powerful tool to help you create and grow ideas, alone or in a group. Brainstorming's power lies in its simplicity, but that doesn't mean it's easy: everyone can brainstorm, but brainstorming well

requires focus and good technique



Business Requirements:

The business requirement of the Global Air Transportation Network- Airports, Airlines, and Routes dataset is to provide 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, providing valuable insights into the

state of the industry. This information can be used to optimize routes, improve operational efficiency, and enhance customer experience.Ultimately; the business requirement of the dataset is to enable stakeholders in the aviation industry to gain a competitive advantage by making data-driven decisions. By providing a comprehensive collection of data related to the air transportation network, the dataset can help stakeholders stay ahead of the curve in a dynamic and rapidly changing industry.

Data Preparation:

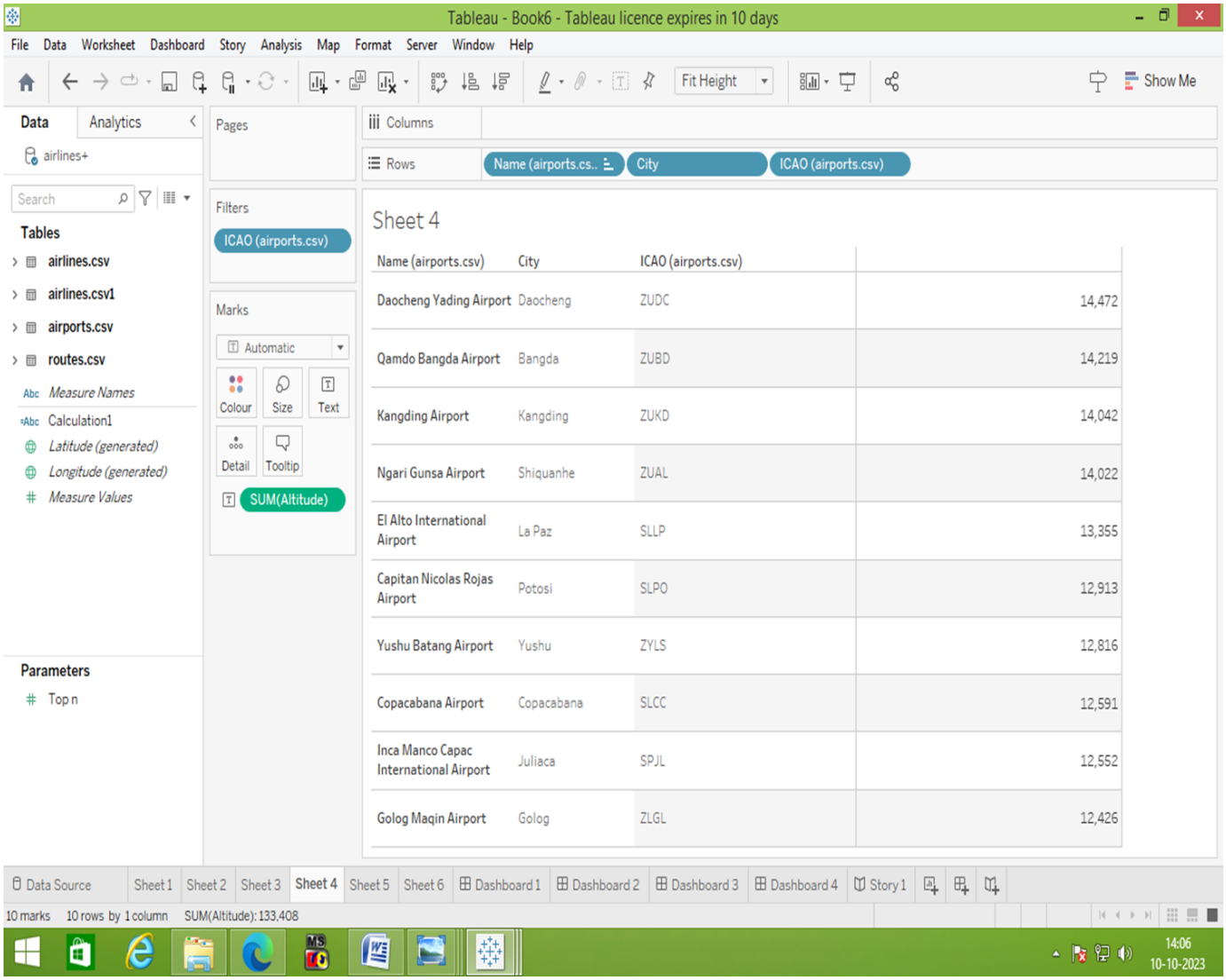
Data preparation, also known as data preprocessing, is a crucial step in the data analysis process. It involves transforming raw data into a clean, structured, and suitable format for analysis. Proper data preparation ensures that the data is accurate, consistent, and ready to be used effectively to derive meaningful insights.

Data Visualization:

Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

No of Unique Visualizations:

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of a project include bar charts, line charts, heat maps, scatter plots, pie charts, Maps, etc. These visualizations can be used to compare performance, track changes over time, and show distribution, and relationships between variable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airports.csv
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Columns
Rows
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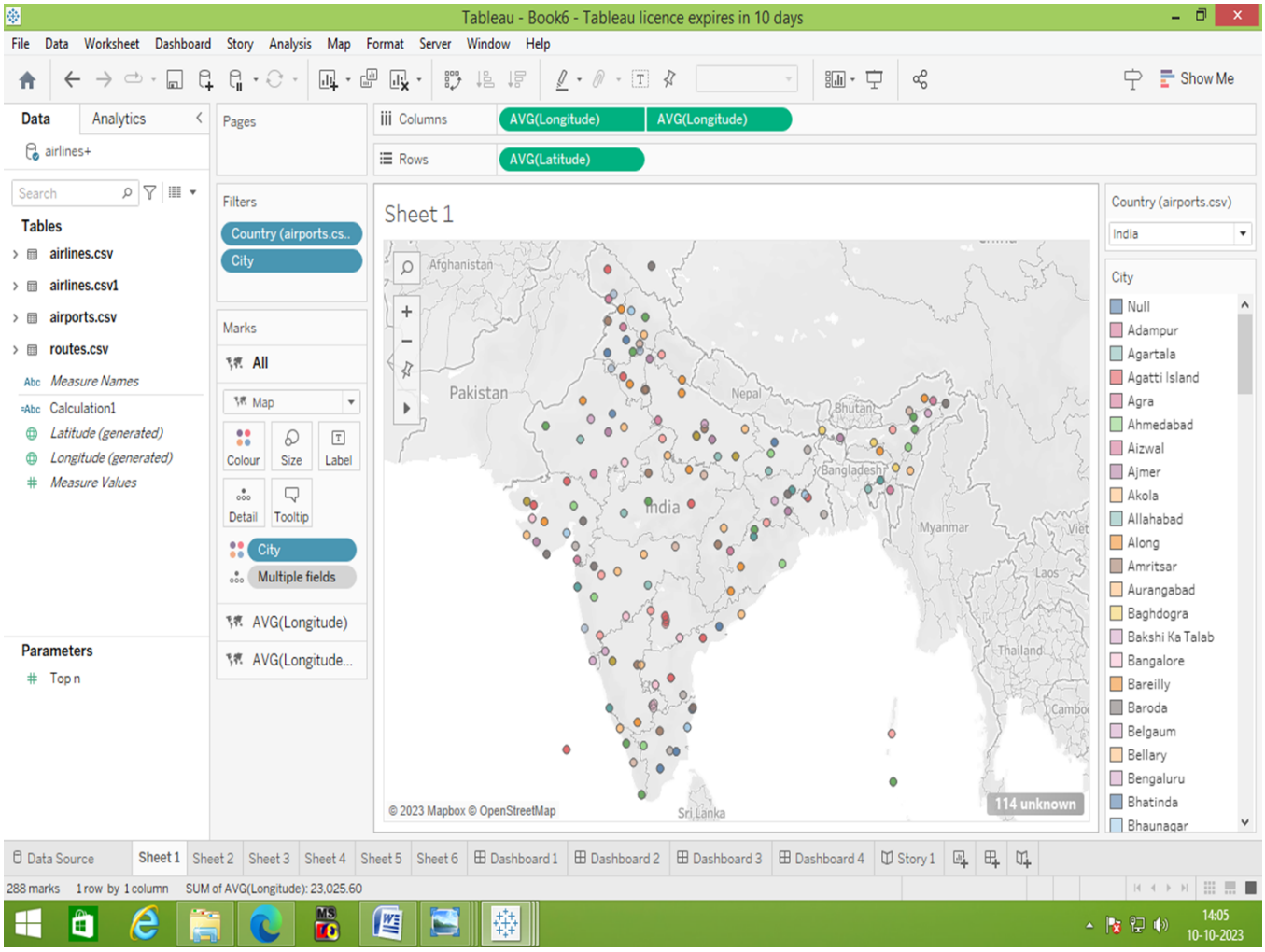
City
ICAO (airports.csv)
Sheet 4
Name (airports.csv) City ICAO (airports.csv)
Daocheng Yading Airport Daocheng ZUDC 14,472
Qamdo Bangda Airport Bangda ZUBD 14,219
Kangding Airport Kangding ZUKD 14,042
Ngari Gunsa Airport Shiquanhe ZUAL 14,022
El Alto International Airport La Paz SLLP 13,355
Capitan Nicolas 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
Data Source
Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1
10 marks
10 rows by 1 column
SUM(Altitude): 133,408
14:06
10-10-2023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Multiple fields
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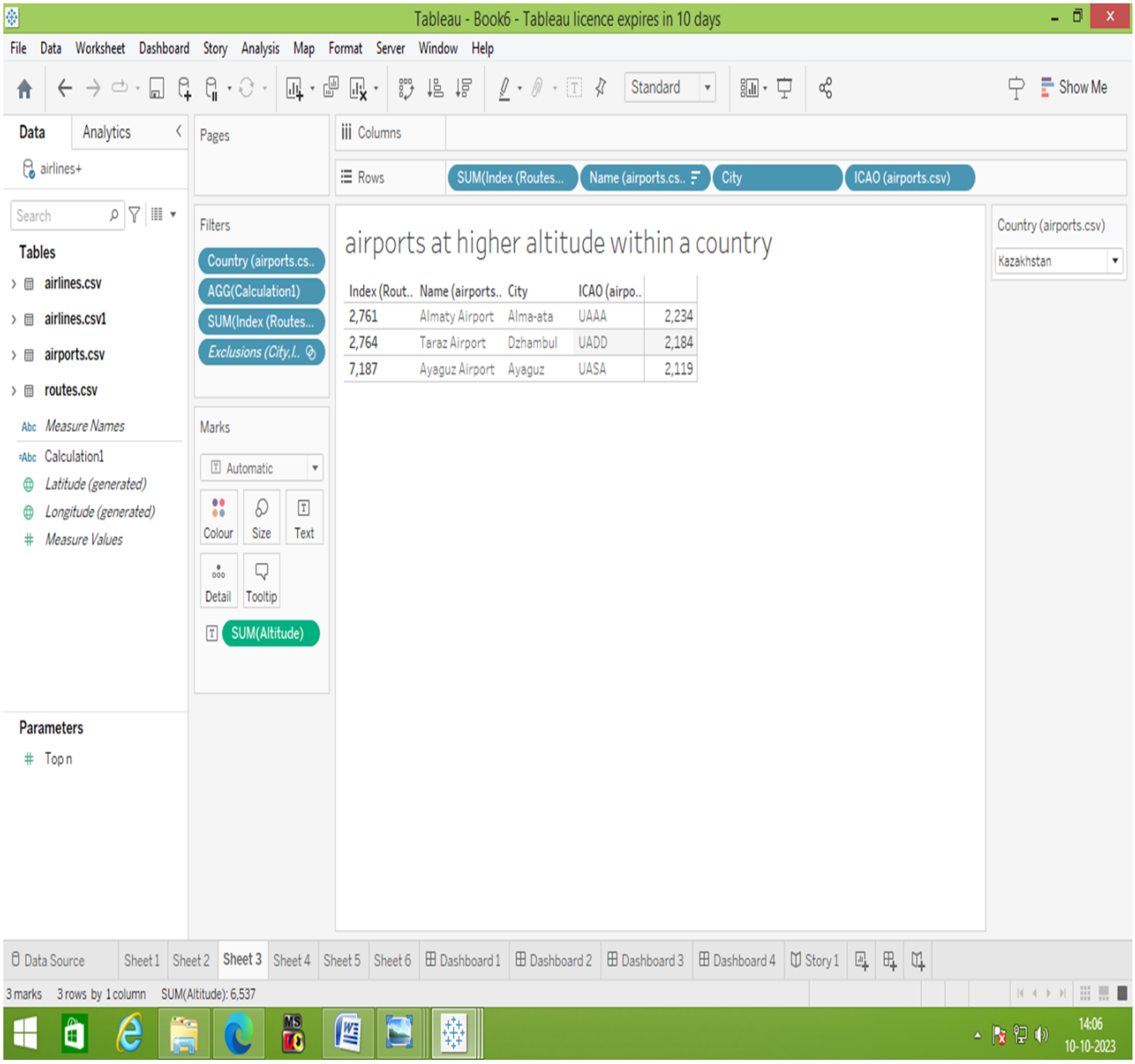
Sheet 1
Afghanistan
Pakistan
Nepal
Bhutan
Bangladesh
India
Myanmar
Laos
Thailand
Sri Lanka
© 2023 Mapbox © OpenStreetMap
114 unknown
Country (airports.csv)
India
City
Null
Adampur
Agartala
Agatti Island
Agra
Ahmedabad
Aizwal
Ajmer
Akola
Allahabad
Along
Amritsar
Aurangabad
Baghdogra
Bakshi Ka Talab
Bangalore
Bareilly
Baroda
Belgaum
Bellary
Bengaluru
Bhatinda
Data Source
Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1
288 marks
1 row by 1 column
SUM of AVG(Longitude): 23,025.60
14:05
10-10-2023



Advantages

- ❖ High speed
- ❖ Minimum cost
- ❖ Strategic importance
- ❖Easy transport of costly and light goods.
- ❖Free from physical barriers.

Disadvantages

- ❖ Risky
- ❖ Cost
- ❖ Some product limitation
- ❖ Enormous investment
- ❖ Capacity of small carriage

Application:

- ❖ Operational work through projects and technical assistance.
- ❖ Economic sector work, research, and knowledge dissemination on air transport related issues.
- ❖ External relations and collaboration with partner organizations.
- ❖ Internal services (e.g., the airline advisory service for WBG

Future Scope:

A blended wing design combines the wing and the fuselage into a single unit, so the entire aircraft provides the lift for the flight. Delta wings – like those used on the Concorde and high-speed

military jets – may also be incorporated in some way into commercial planes.KLM is also working with Delft University of Technology on a ‘Flying V’ plane that has passenger cabins down each side of a v-shaped aircraft. The company claims this type of plane could offer 20% more fuel efficiency than the A350.

CONCLUSION:

Industry-wide revenue passenger-kilometres (RPKs) are likely to be at **87.8%** of the 2019 level for 2023 as a whole. This strong performance greatly benefits from pent-up demand which remains buoyant in spite of the economic headwinds. Looking forward, the demand for air travel is expected to double by 2040, growing at an annual average rate of 3.4%.