GLOBAL AIR TRANSPORTATION NETWORK

TEAM ID : NM2023TMID06255

PROJECT REPORT

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CONTENTS

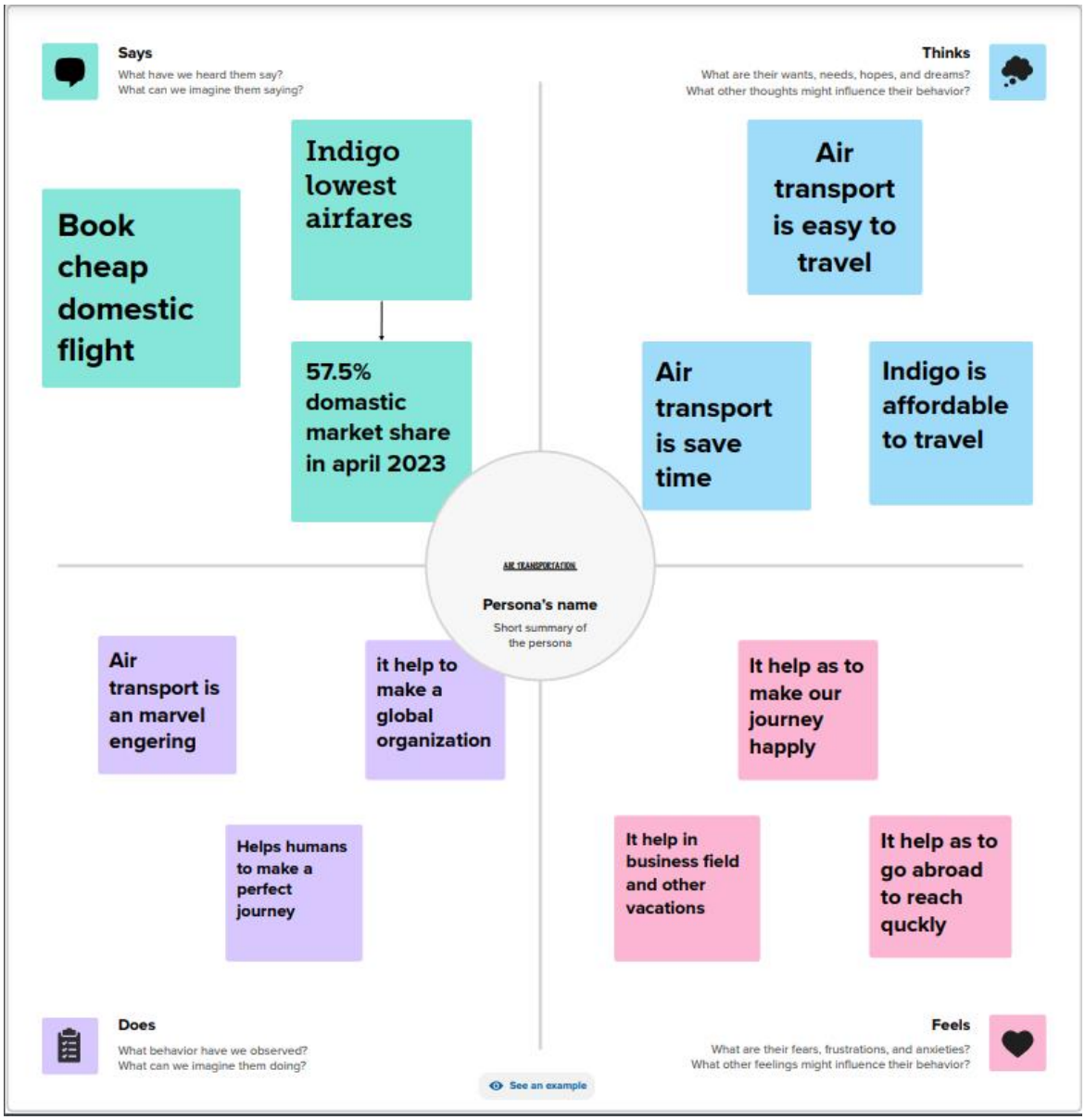
1.INTRODUCTION:

1.1 Overview Unlocking Insights Into The Global Air Transportation Network With Tableau. 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. Similarly, it also 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. Technical Architecture: 3 1.2 PurPose : • Air services create significant value for passengers and freight users. • The Global Air Transportation network is a critical infrastructure with high impact on mobility, trade and economy. • The Air transportation Network opens up new sales markets and boosts production efficient and investment. • The Global Air Transportation Network will continue to play a vital role in their future operations and growth, especially in developing countries. • The Global Air Transport Network connects thousand of destinations around the globe, either directly or via connections at "HUB" Airports. • IATA Commissioned UK-based economic consultants Oxford Economic Forecasting to undertake a survey of 625 businesses in five different countries, to analyse their use of air services and the value they place on the air network.

PROBLEM DEFINITION & DESIGN THINKING

2.1 Empathy Map:

An Empathy Map is a tool used to help understand and empathize with the perspective of a particular user of customer. It is a visual representation of the user ‘s attitude, behaviours , emotions ,and experiences that can be used to gain a deeper understanding of their needs and emotions The Empathy Map is typically divided into four quadrants "Says," "Thinks," "Does," and "Feels." In each quadrant, the user's thoughts, feelings, actions, and spoken words are recorded to help build a more complete understanding of their perspective. The Empathy Map is often used in design thinking and user experience research to help inform the design of products or services that better meet the needs of the user.

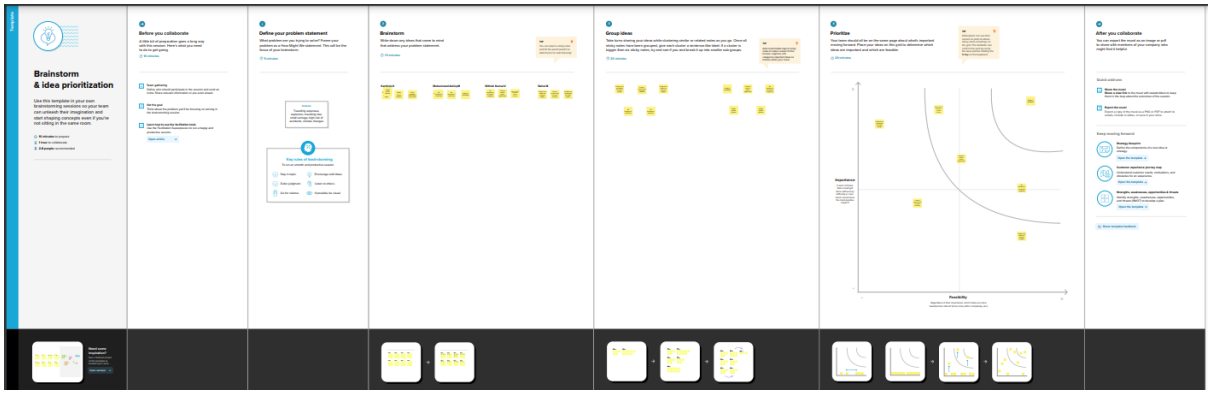


2.2. IDEATION & BRAINSTORMING MAP:

• Ideation and Brainstorming Maps are tools used to generate and organize ideas in a structured and visual way. They are commonly used in creative problem solving, innovation, and product design to generate a large number of ideas and then organize them into meaningful categories.

• Ideation and Brainstorming Maps typically start with a central theme or problem statement in the center of the map. From there, branches are drawn out to represent different categories or subtopics related to the central theme. These categories can then be further expanded with additional branches to represent specific ideas.

• The purpose of an Ideation and Brainstorming Map is to encourage free thinking and generate as many ideas as possible. It allows participants to visually see how ideas are connected and to build upon each other's ideas. The map can then be used to prioritize and refine the most promising ideas. There are many variations of Ideation and Brainstorming Maps, including Mind Maps. Spider Maps and Fishbone Diagrams.

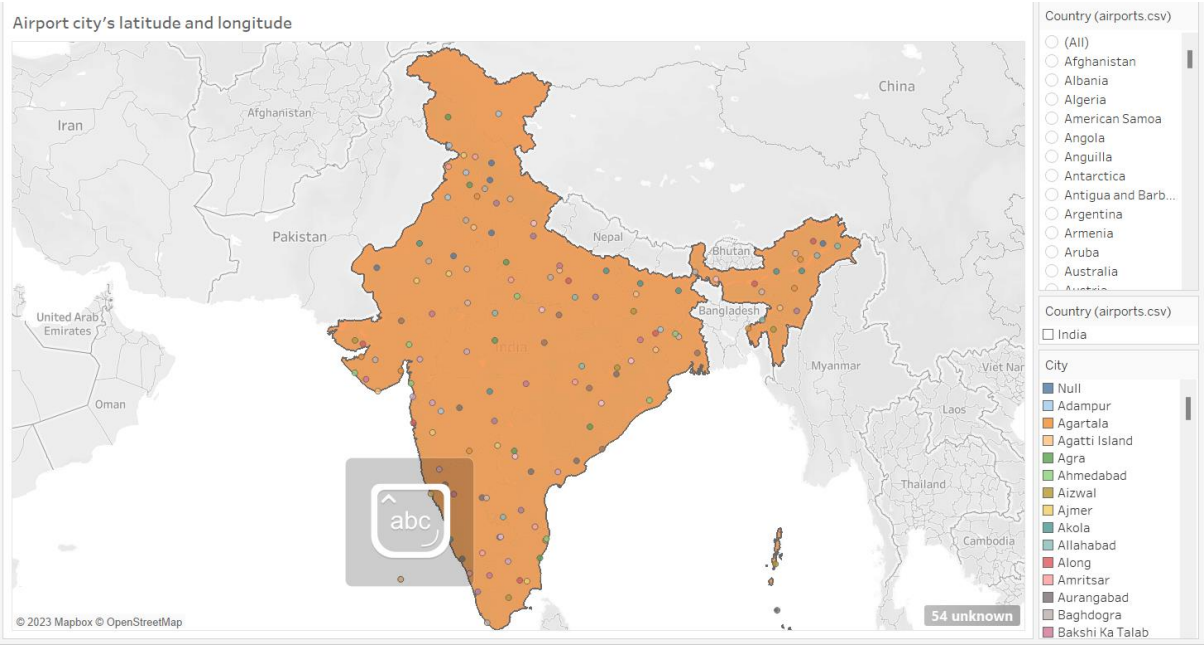


3. RESULTS:

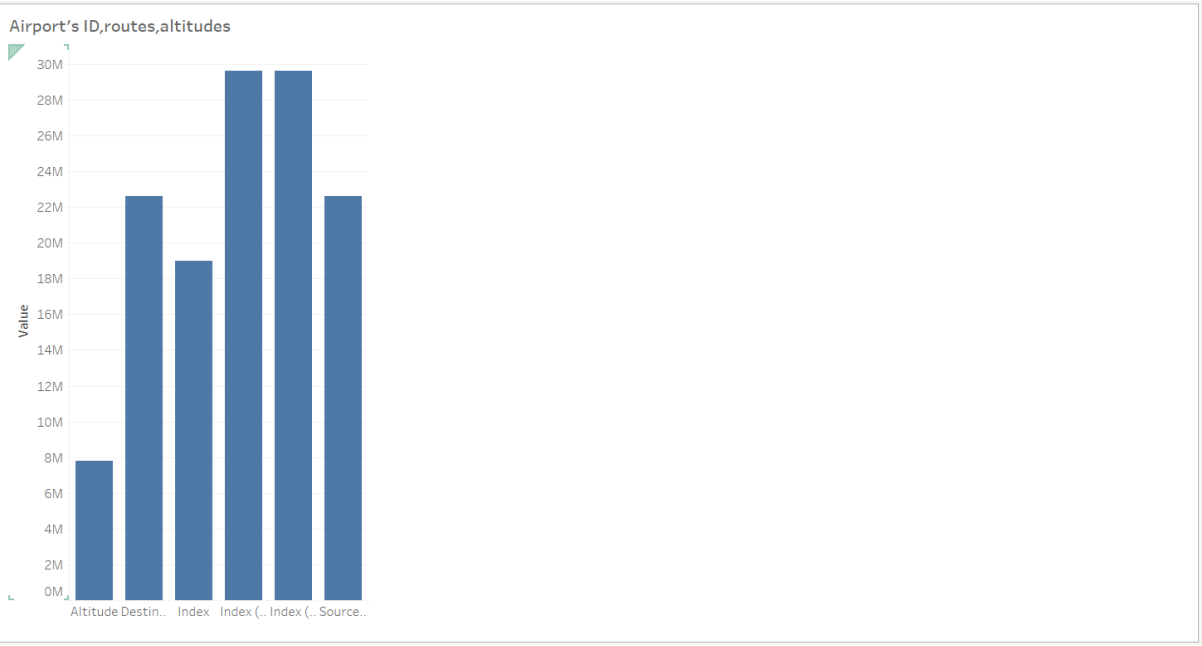
3.1. Creating Dashboard in Tableau:

A dashboard is a collection of different kinds of visualizations or views that we create on Tableau We can bring together different elements of multiple worksheets and put them on a single dashboard. The dashboard option enables us to import and add charts and graphs from worksheets to create a dashboard. On a dashboard, we can place relevant charts and graphs in one view and analyse them for better insights.

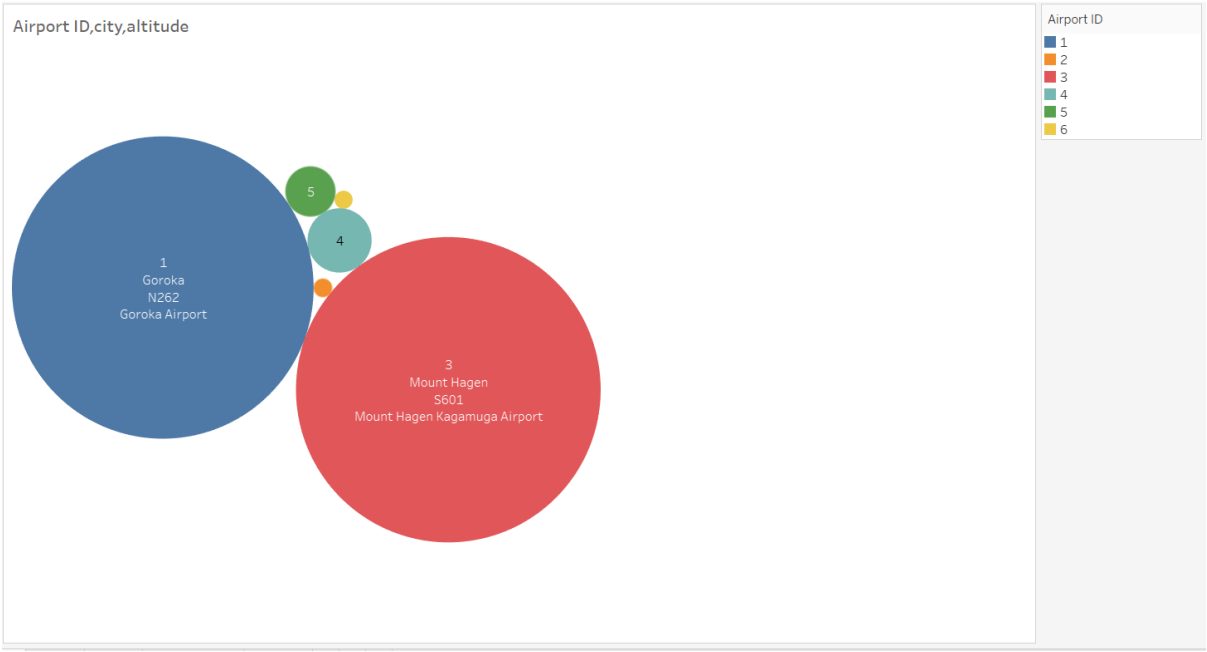
Dashboard 1



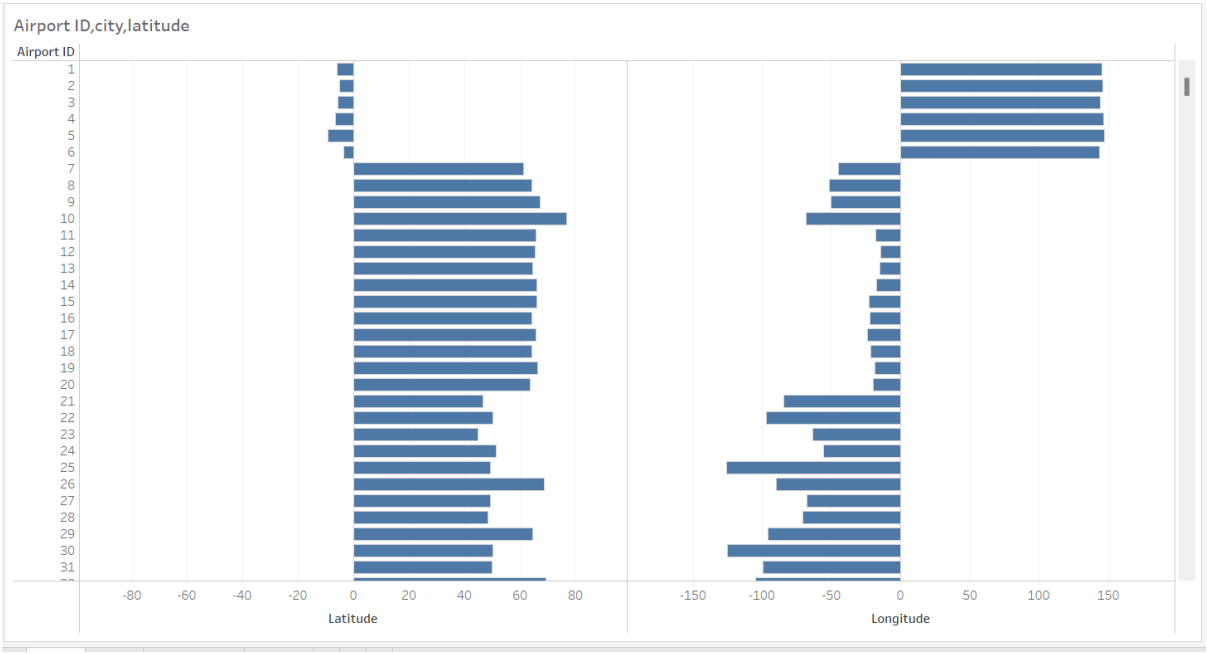
Dashboard 2



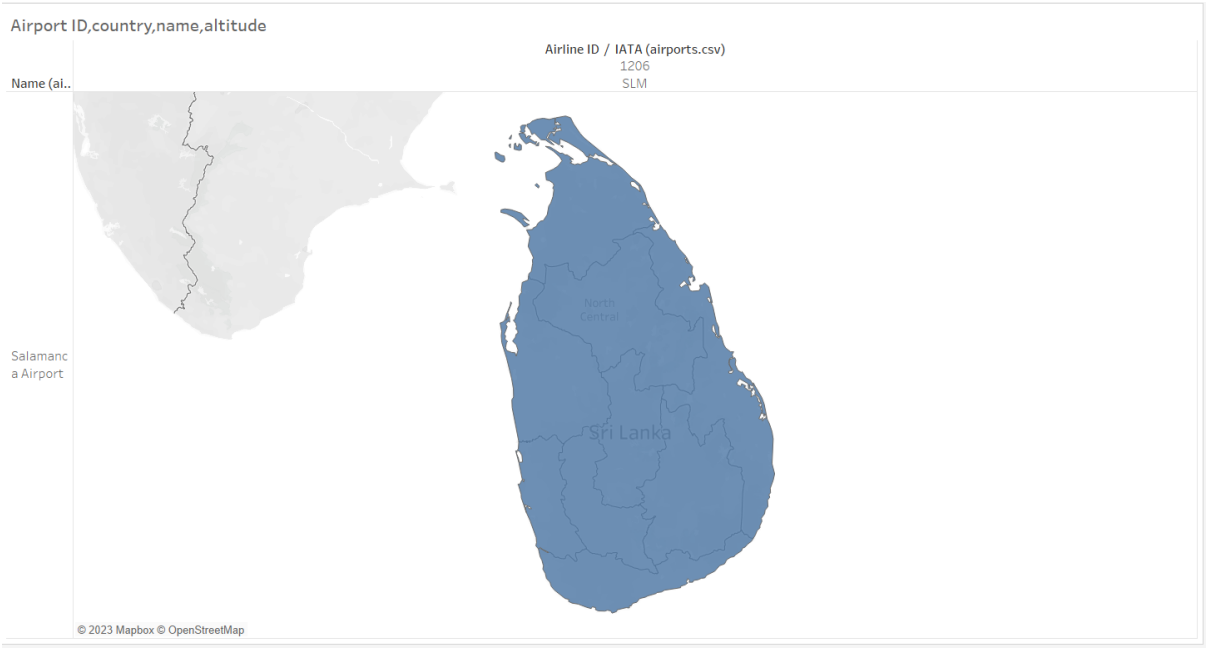
Dashboard 3



Dashboard 4



Dashboard 5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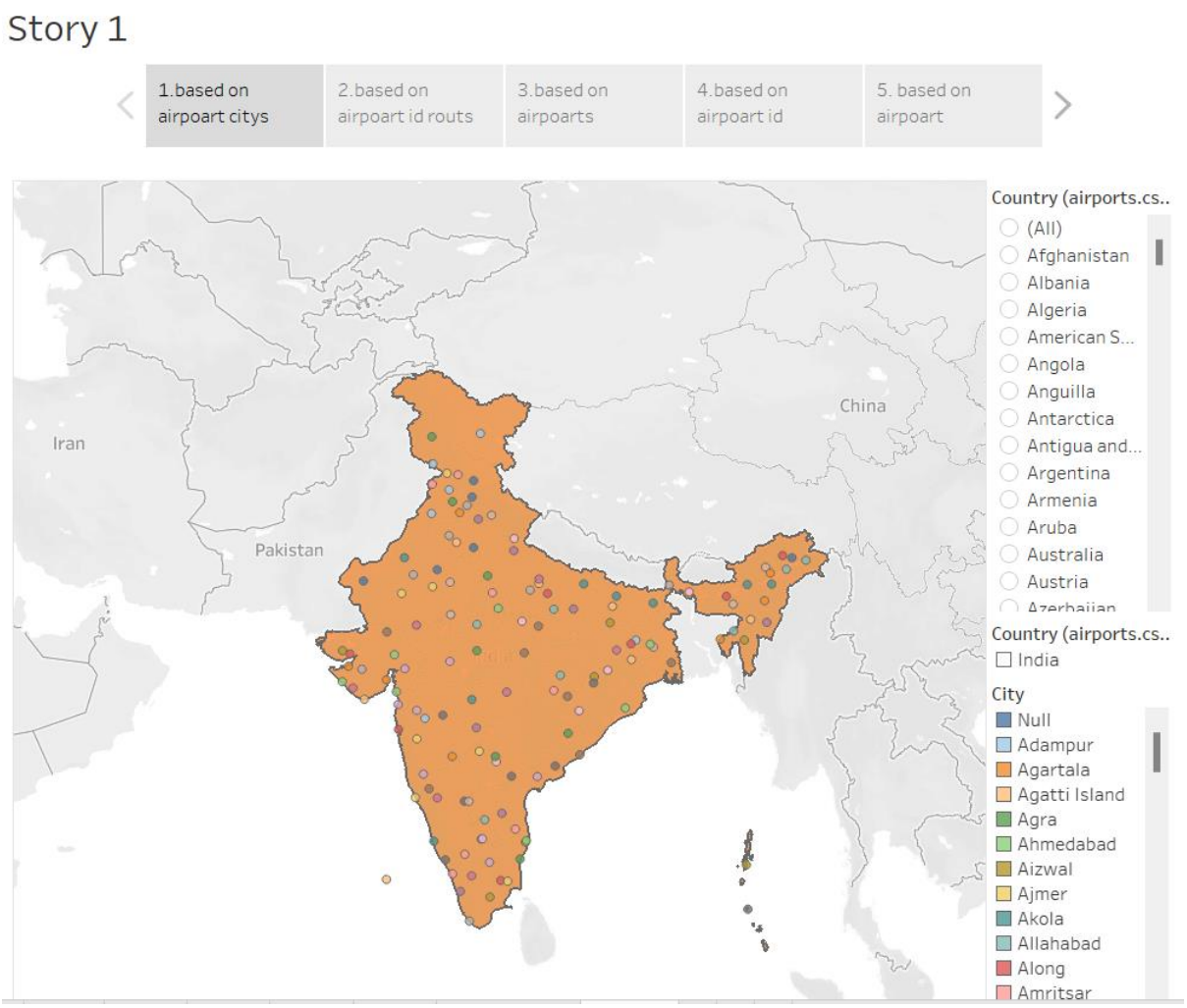
© 2023 Mapbox © OpenStreetMap

3.2. STORIES:

Story is a sequence of different charts that combine to provide a cohesive plot to its viewers. In essence, all these charts tell a day about the data which allows the viewers to form the conclusion. The story in Tableau contains story points, where each story point is either a work or a dashboard. When you share a story-for example by publishing a workbook to Tableau Public, Tableau Server, or Tableau Clad-users can interact with the story to reveal new findings or ask new questions of the data.



4. ADVANTAGES & DISADVANTAGES:

Advantages:

- **Provides a detailed understanding of the Airlines routes.**
- **The Air transportation Network opens up new sales markets and boosts production efficient and investment.**
- **The air transportation network, the dataset can help stakeholders stay ahead of the curve in a dynamic and rapidly changing industry.**
- **We find that the most connected cities are not necessarily the most central, resulting in anomalous values of the centrality.**
- **We identify the communities in the air transportation network.**

Disadvantages:

- **The analysis may not capture all relevant factors that could impact the air transportation network.**
- **The accuracy of the analysis may be limited by the availability and quality of data.**
- **Airports and airplanes are potential targets for security threats, necessitating strict security measures and regulations.**
- **Major airports often experience congestion, leading to delays.**
- **"HUB" Airports may suffer from increased congestion and provide advantages to airlines with historic rights to airport slots.**

5.APPLICATIONS:

- **Air transport facilitates international trade by providing fast delivery of products and components, reducing lead times, and supporting supply chains.**
- **Air transport network models are also the tool to investigate system robustness.**
- **Modeling air transport networks aims airline companies to organize their routes in a cost efficient way and therefore maximize their profits.**
- **IATA has developed a connectivity indicator to measure the degree of integration of a country into the global air transport network.**
- **ICAO codes are also used to identify other aviation facilities such as weather stations, international flight service stations or area control centers, whether or not they are located at airports.**

6.CONCLUSION:

- **In United States there are maximum airports (1512 airports) in the world.**
- **The Global Air Transportation Network will become even more important to firms over the future.**
- **Air Transportation boosts economic development and investment**
- **The Global Air Transportation network serves an extensive range of destinations, providing more connections between different destinations than would be possible with just direct flights.**

7.FUTURE SCOPE :

- **Airports and airlines will continue to expand and improve connectivity, offering more routes and destinations.**
- **Smaller airports and regional hubs may become more important in providing efficient travel options.**
- **Air Transportation boosts economic development and investment.**
- **The Global Air Transportation Network will become even more important to firms over the future.**
- **The Global Air transportation Network opens up new sales markets and boosts production efficient and investment.**
- **The Global Air Transportation Network will continue to play a vital role in their future operations and growth, especially in developing countries. The future of the global air transportation network is filled with innovation and challenges, and it will be shaped by technology, environmental effects.**