ANALYSIS OF INSIGHTS OF GLOBAL AIR TRANSPORTATION

BACHELOR OF SCIENCE IN PHYSICS

SUBMITTED BY

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THIRUVALLUVAR ARTS AND SCIENCE COLLEGE

Kurinjipadi-607302

CATEGORY : Data analytics with Tableau

PROJECT TITLE:

ANALYSIS OF INSIGHTS OF GLOBAL AIR TRANSPORTATION

INTRODUCTION:

Overview: A brief description about your project.

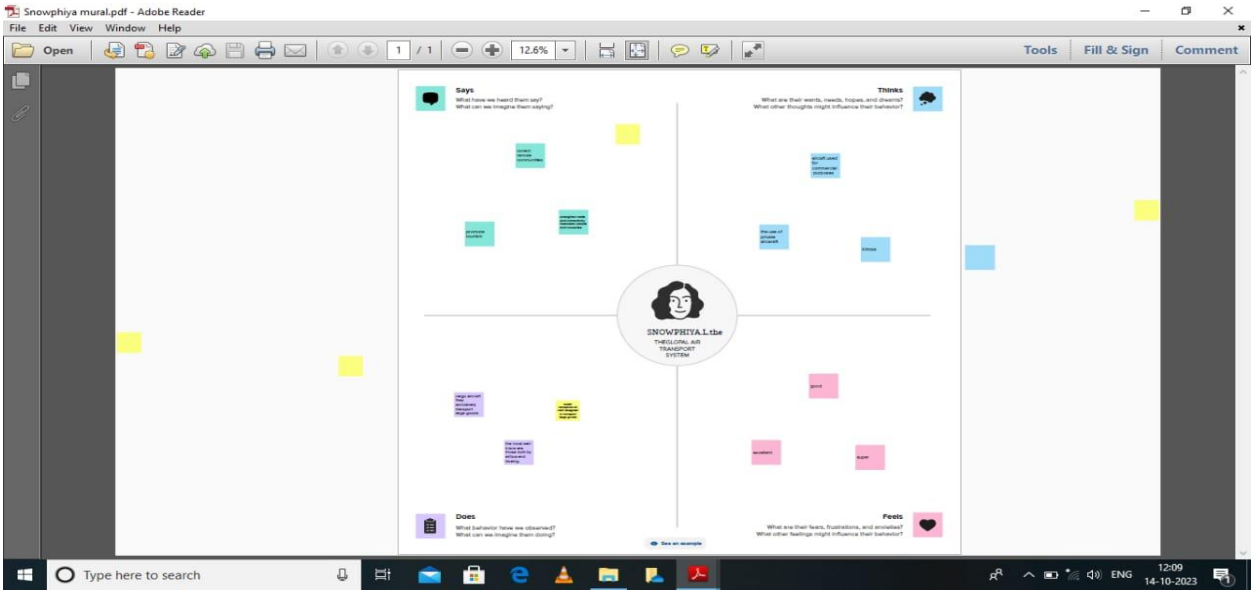
Purpose: The use of this project. What can be achieved using this.

Problem Definition & Design Thinking.

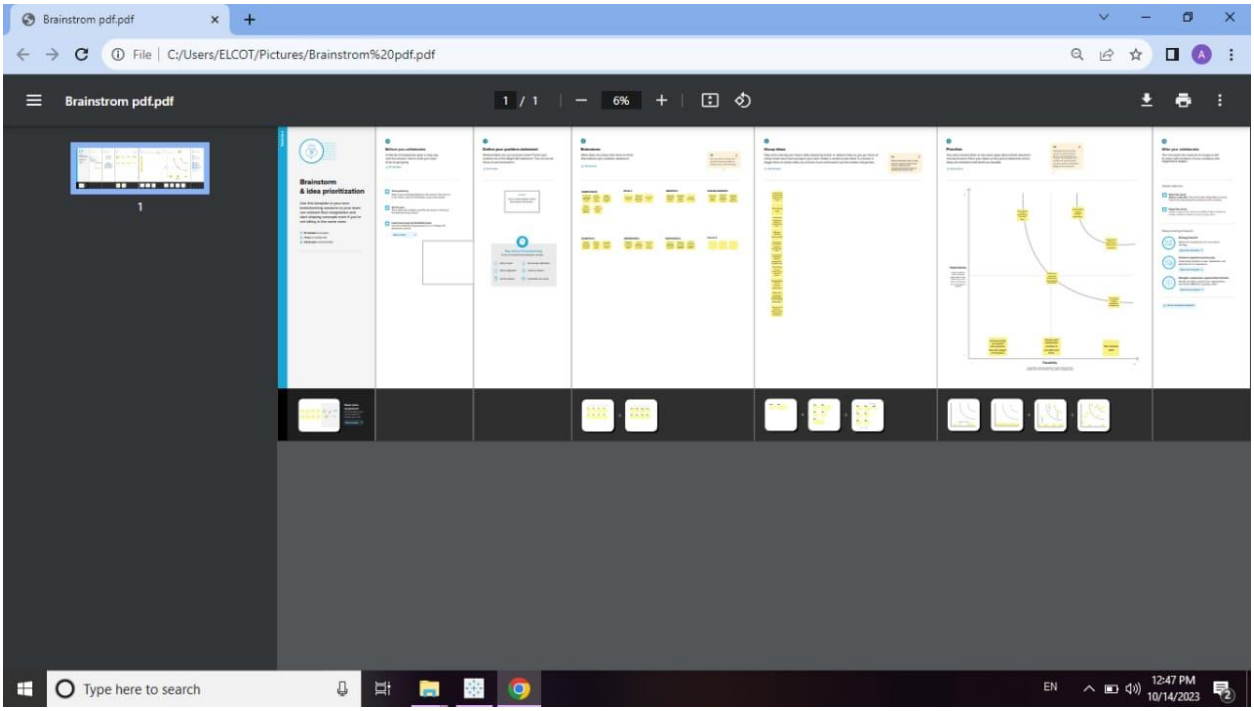
The air transport system generally includes airports, ATC (air traffic control) system, and airlines. The airports represent the ground part of the system's infrastructure handling the aircraft operated by different airlines transporting passengers and freight/cargo shipments. The organized and controlled airspace between airports represents the air part of the system's infrastructure. The ATC system provides guidance to aircraft while flying through the controlled airspace between airports and during their ground movements at the airports themselves. These aircraft are operated by airlines generally categorized into two classes: those, which primary transport passengers and to the limited extent cargo shipments; and those, which exclusively transport cargo shipments.

PROBLEM DEFINITION & DESIGN THINKING

EMPATHY MAP



IDEATION AND BRAINSTORMING MAP



RESULT

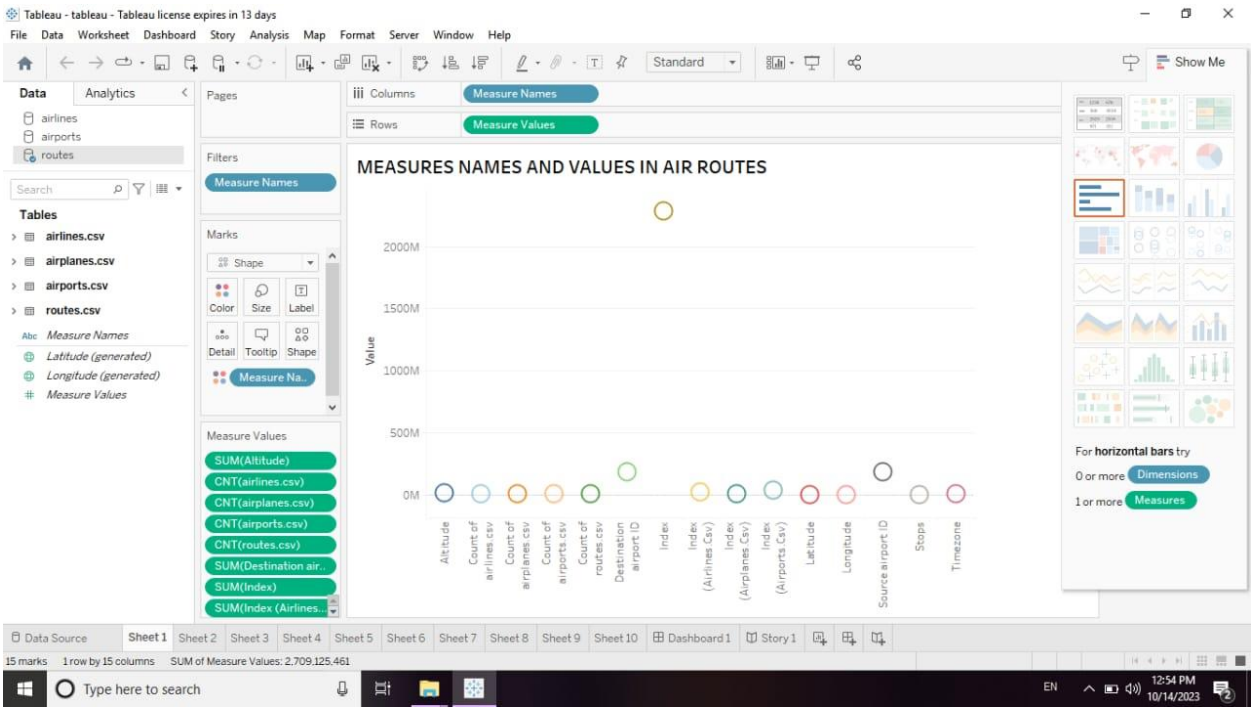
Final finding output of the project along with screen shot

EXPLAINATION OF MEASURE VALUE IN AIRROUTES

The Data pane always contains a number of fields that do not come from your original data, two of which are Measure Values and Measure Names. Tableau automatically creates these fields so that you can build certain types of views that involve multiple measures.

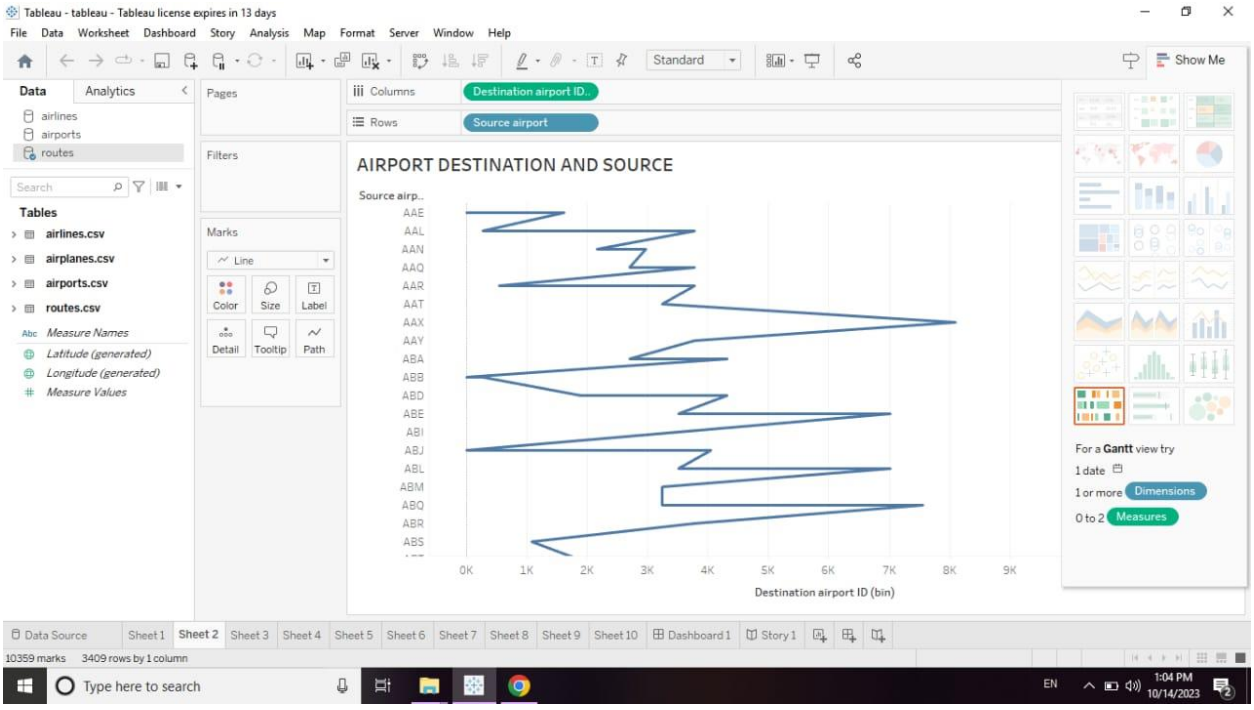
Measure Values: field contains all the measures in your data, collected into a single field with continuous values. Drag individual measure fields out of the Measure Values card to remove them from the view.

Measure Names: field contains the names of all measures in your data, collected into a single field with discrete values.



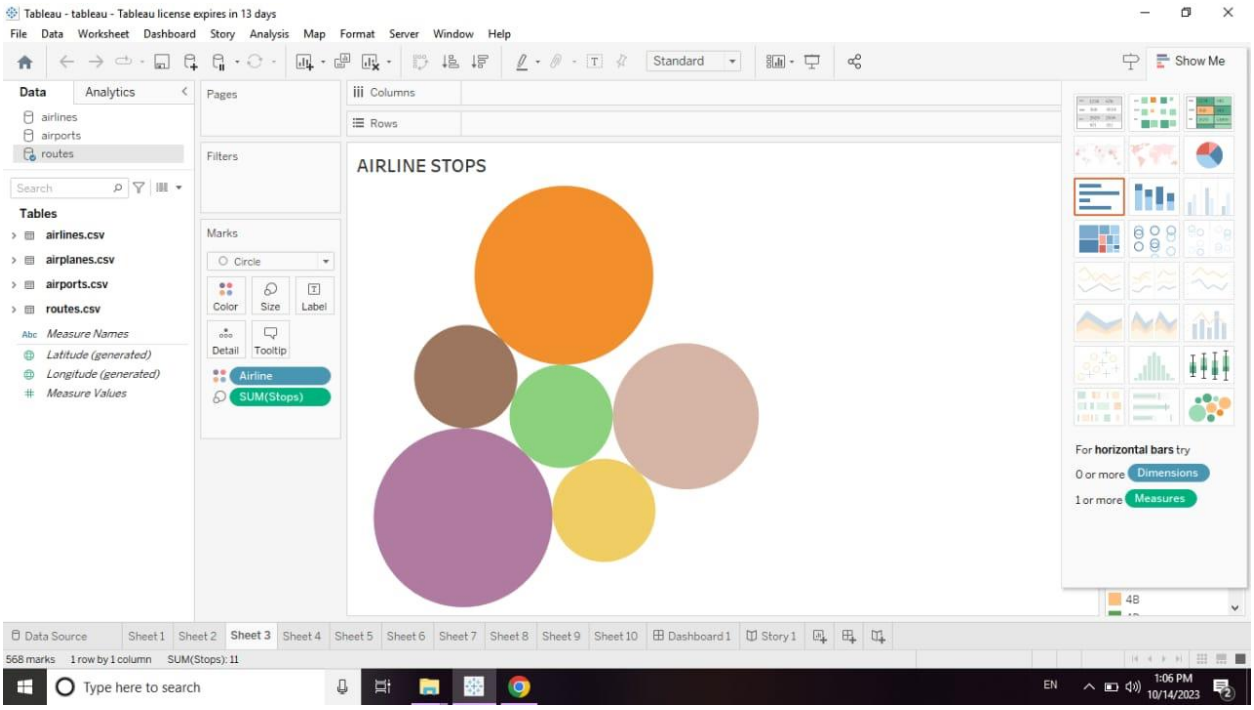
AIRPORT DESTINATION AND SOURCE

The source address is the address of the device sending the packet. The destination address is the address of the device to receive the packet. When it comes to tunnels, the end hosts would have source and destination IPs as they normally would.



AIRLINE AND ITS STOPS

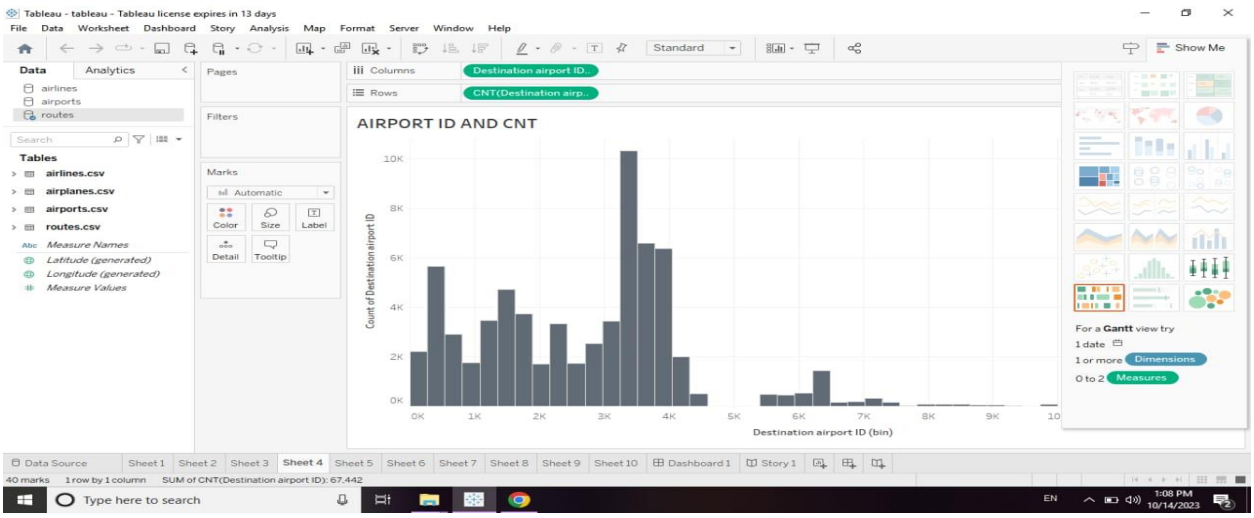
One stop flight means there is a layover (intermediate stop) between departing location and destination. For example: if you are flying from Toronto (Canada) to Delhi (India), with one stop flight, you will fly from Toronto to London and then take another flight from London to reach your destination Delhi.



AIRPORT ID AND CNT

The AirPort® ID or MAC address is a unique 12-digit code assigned to every piece of networking hardware for identification (like a social security number) which you can find printed on a label on the AirPort Card, or through your Mac® computer.

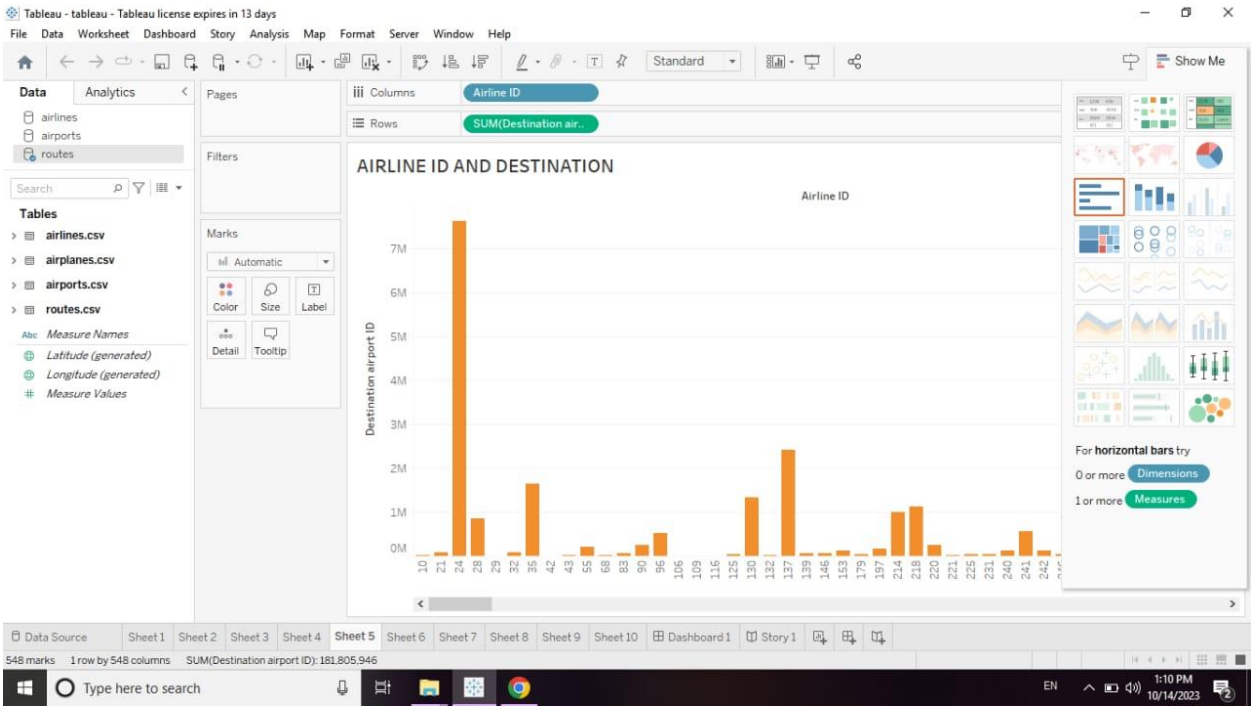
Charata Airport (IATA: CNT) is an airport serving the town of Charata in the Chaco Province of Argentina.



AIRLINE ID AND DESTINATION

The airline accounting code, or prefix code, is a 3-digit number, referenced by IATA and unique among all the airlines, used to identify the airline in various accounting activities such as ticketing.

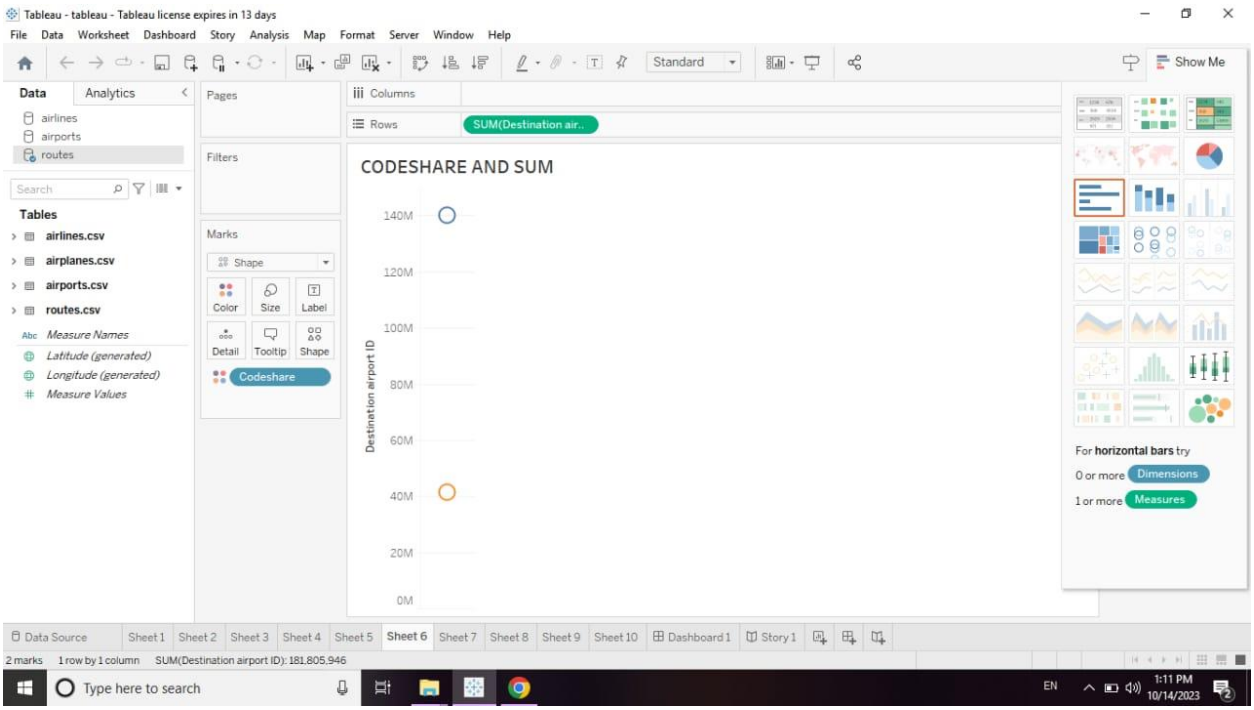
Delta spokesperson tells Travel + Leisure that five main factors go into the selection process for new routes: demand, competitive positioning, operational feasibility, strategic value, and financial performance. And they're all very much interconnected, with the thresholds for each varying per route.



CODESHARE AND SUM

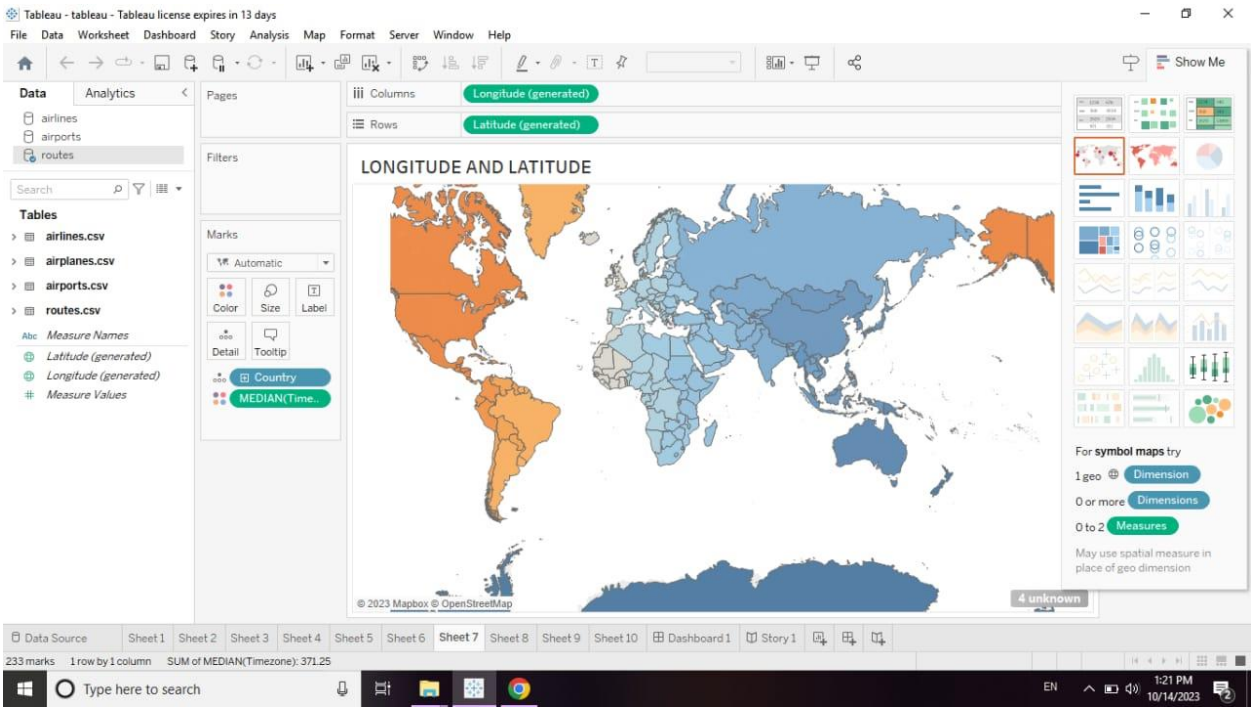
Code sharing works as follows, using Air Canada and United Airlines as examples: Say Air Canada offers a flight with its own flight number and sells tickets for it. However, the actual trip is operated by United Airlines. The two airlines must have a commercial agreement to do this.

The SUM Aviation Group brings together a suite of global aircraft operational and maintenance management solutions that can be adapted to the requirements of aircraft operators and leasing companies. Our focus is to consistently deliver, effective on-time professional services and in-depth industry know-how, allowing our customers to optimise their operation and realise their objectives.



LONGITUDE AND LATITDUE AIRROUTES

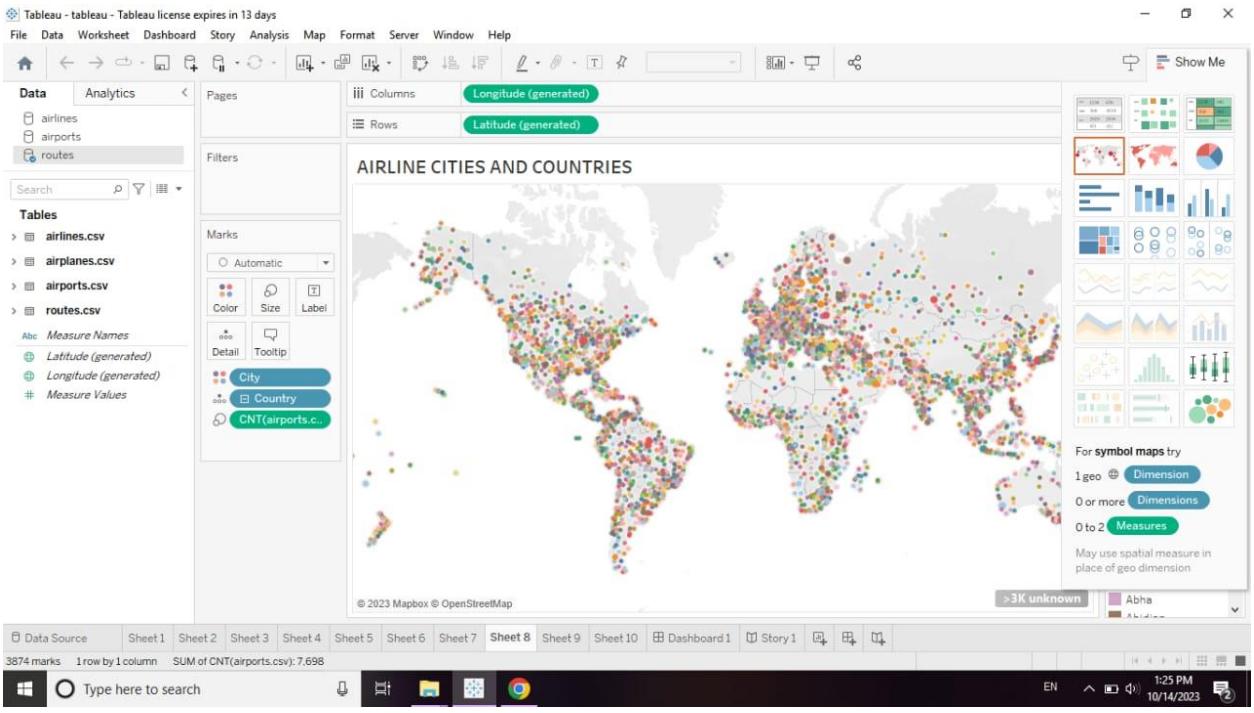
Flight routes with corresponding longitude (x axis) and latitude (y axis) for the CO 2 and profile flights during (a)-(c) 2012, (d) 2013, and (e),(f) 2014. Mesoscale spatial patterns that correspond to the land cover, topography, and atmospheric layers are noticeable. One flight conducted in April 2013, which was also used for the transport error assessment, covered a much smaller area within the Willamette valley only and is not shown here. The black point markers indicate the CO 2 observation tower locations where profile flights were conducted.



AIRLINE CITIES AND COUNTRIES

Airport links (official website) open the official website of an airport. The airport websites typically offer information about the airport's facilities, passenger amenities, current weather conditions, real-time flight status information of arrivals and departures, and the destinations you can fly to from this airport, as well as a list of Airline Companies which serve the airport.

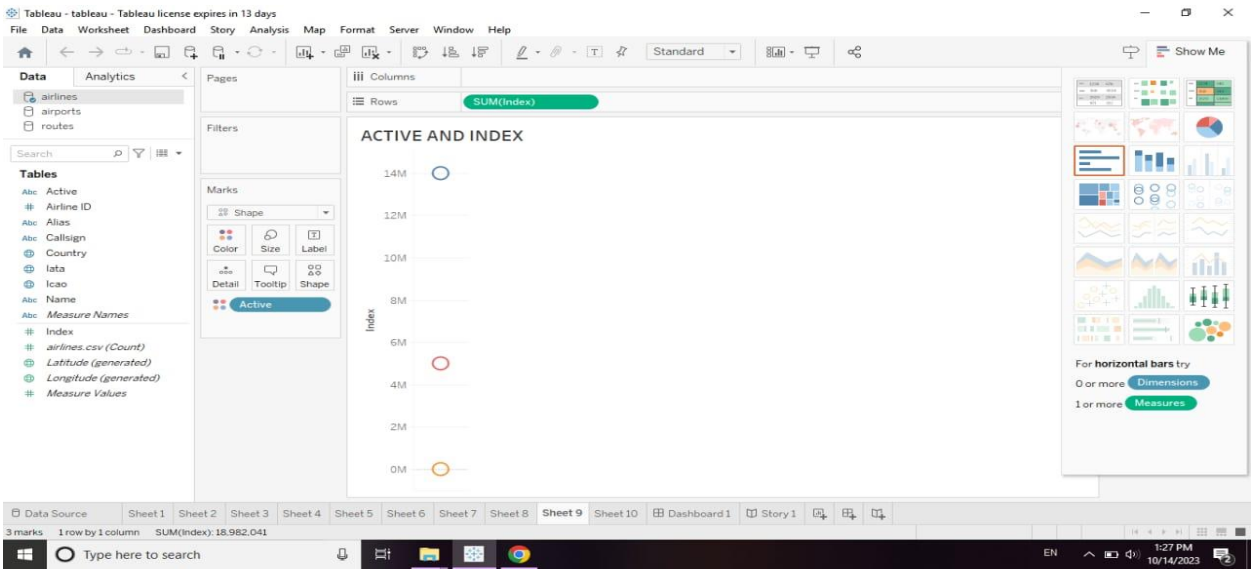
City links open a map of the city or region with the location and a short description of the airport(s) as well as some information about the city/region. Listed are cities with an international, regional, or municipal airport and some cities with an airport for only General Aviation (GA), which are usually not served by commercial airlines.



AIRLINE ACTIVE AND INDEX

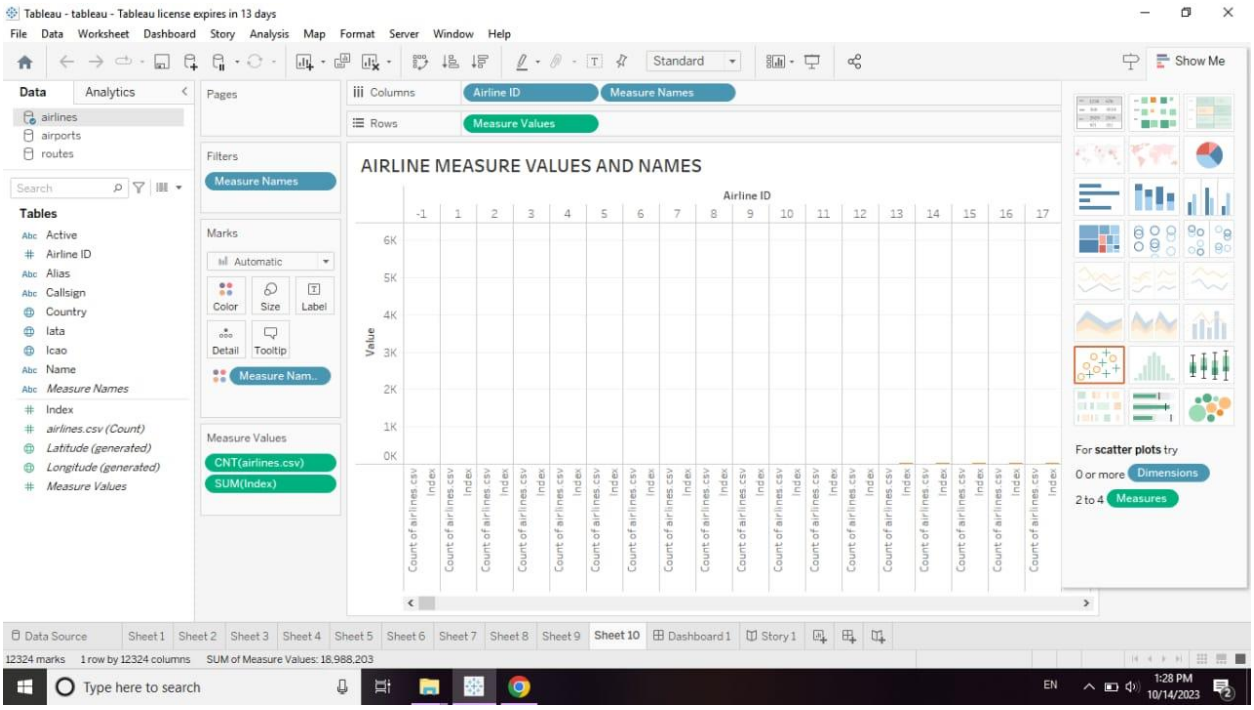
The airline's first commercial flight was on 7 August 2022, between Ahmedabad and Mumbai. Most flights are operated through their operating bases at Bengaluru and Mumbai. The airline currently flies to 17 destinations, with plans to launch operations to one more destination.

One airline generally uses a CI of around 9 in the A320 which results in a climb speed of about 290, a cruise speed of about .76 and a descent speed of about 260. However, if the aircraft is running late, the crew may use a CI of 50 or more which would give speeds of 320, .79 and 330 for the same phases.



AIRLINE MEASURE VALUES AND NAMES

Available seat miles is a measure of airline capacity and is calculated by taking the number of seats available and multiplying by the distance flown. Revenue passenger miles is a measure of volume and is calculated by taking the number of passengers and multiplying by miles of flight.



ADVANTAGE AND DISADVANTAGE

The list of advantage of the purpose solution:

High Speed:

- The supreme advantage of air transport is its high speed.
- It is the fastest mode of transport and thus it important factor.

Comfortable and Quick Services:

It provides a regular, comfortable, efficient and quick service.

1. No Investment in Construction of Track

It does not require huge capital investment in the construction and maintenance of surface track.

2. No Physical Barriers

It follows the shortest and direct route as seas, mountains or forests do not come in the way of air transport.

3. Easy Access:

Air transport can be used to carry goods and people to the areas which are not accessible by other means of transport.

4. Quick Clearance:

In air transport, custom formalities can be very quickly complied with and thus it avoids delay in obtaining clearance.

The list of disadvantage of the purpose solution:

High Cost

This is significantly more costly for its services than land, rail, and water transportation. If passengers' financial situation could be better, they cannot travel frequently. Even while air travel offers affordable economy class tickets and expensive business class seats, it still costs more than other forms of transportation. Cargo is subject to the same rules. Although it offers a faster level of service than other options, which is fantastic for trading air services, the costs are high and specific permission is required.

2. Risky

Because air travel follows a natural route and is thus entirely reliant on the weather, it can be perilous to fly in inclement weather such as fog, rain, snow, and other similar situations that result in cancelled flights or service changes.

3. Limited capacity

While air transport is a quick method of transportation, it has the problem of having a small cargo hold, which is better served by other routes. There are restrictions on the number of passengers who may travel, which could be better for handling big goods. Some products include batteries, gases, heated solids, liquids, etc.

4. Uncertain and Unreliable

Air travel is uncertain and unreliable since weather conditions heavily influence it. Planned flight cancellations and suspensions of air service may result from unfavourable weather conditions like fog, snow, or severe rain, among others.

5. Accident-prone

Air travel has a consistently high risk of mishaps compared to other modes. There are more mishaps overall while using air transportation. Bad weather, signal problems, or machine part failure resulting in a loss of personnel, crew, or cargo can all contribute.

6. Requires Skill

An aircraft can only be controlled by skilled people, making air travel more costly due to crew problems.

7. Large Investment

To build and maintain aeroplanes, a significant amoun t of money is required. In addition, running an air service requires highly skilled and experienced people.

APPLICATIONS

The area of where solution can be applied
This paper presents an overview of several important areas of operations research applications in the air transport industry. Specific areas covered are: the various stages of aircraft and crew schedule planning; revenue management, including overbooking and leg-based and network-based seat inventory management; and the planning and operations of aviation infrastructure (airports and air traffic management). For each of these areas, the paper provides a historical perspective on OR contributions, as well as a brief summary of the state.

CONCLUSION

Work the conclusion summary the entire and findings

The air transport industry is not only a vital engine of global socio-economic growth but is also of vital importance as a catalyst for economic development in most countries and for many regions within each country. Its importance arises not only from its ability to facilitate the movement of people but also its ability to expedite the movement of goods. Currently, rising operating costs, stoked by the high price of aviation fuel combined with slowing or even negative demand growth, will lead to dramatic restructuring of the airline industry and the collapse of many airlines especially smaller ones. Reduced access to air services for both passengers and freight may put many communities at a disadvantage.

FUTURE SCOPE

The enhancement that can be made in the future

With growing middle class, which is expected to drive demand for air travel. As more people in the country have disposable income, they are likely to take more trips, both within India and abroad. This trend is likely to continue in the coming years, providing a boost to the industry.