

# PROJECT REPORT

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

### 1.INTRODUCTION:

#### 1.1 OVERVIEW



*Air transport network or air transportation network (ATN) is an example of transport networks and spatial networks. The nodes of the network are the airports and the links represent direct flight routes between two airports. Alternatively, cities can be considered as the nodes with links representing direct flight connection between them. Air transport networks can be defined worldwide as well as for one region or for one airline company; the scale of the network can be global or domestic.*

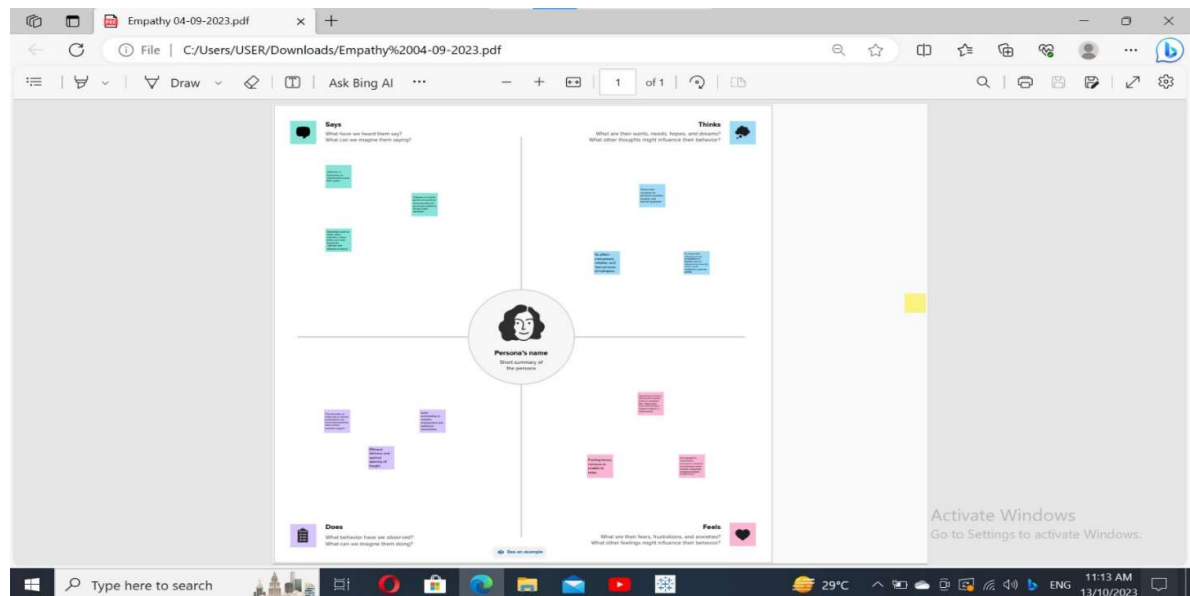
#### 1.2 PURPOSE

*Almost half of the world's population is carried by airlines each year, and understanding this mode of transport is important from economic and scientific perspectives. In recent years, the increasing availability of data has led to complex network and agent interaction models which attempt to gain better understanding of the air transport network and develop forecasts. In this case study paper, we review existing research on two key approaches, namely(1) a top-down multi-scale network science approach, and (2) a bottom-up entropy-maximization interaction network approach. Using simple socioeconomic indicators, we were able to construct a very accurate interaction model that can*

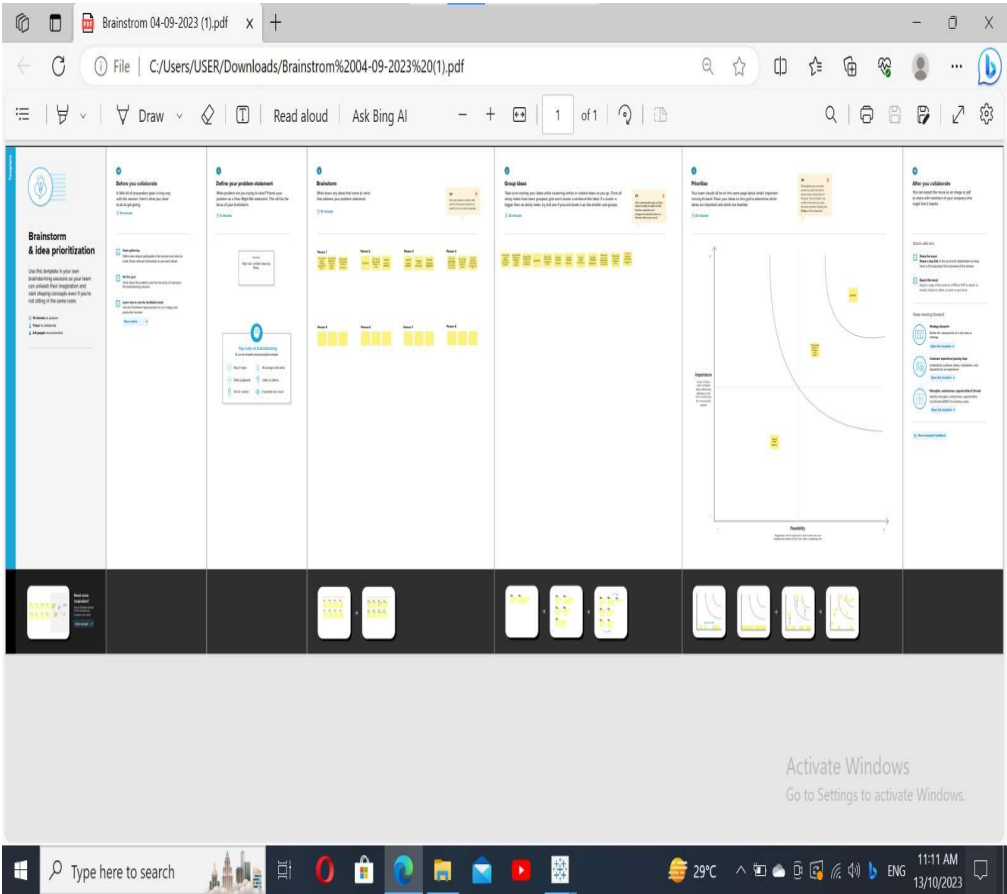
*predict traffic volume, and the model can forward estimate the impact of population growth or fuel cost. Using network science approaches, we were able to identify community structures and relate them to economic outputs. We also saw how hubs evolved over time to become more influential. Looking into the future, using random graph theory, it seems that reduced flight cost will lead to increased hub influence. The disseminated knowledge in this case study paper*

## 2. PROBLEM DEFINITION AND DESIGN THINKING:

### 2.1 EMPATHY MAP:



2.2 BRAIN STROMING MAP:



3.RESULTS:

DASHBOARD:

## DASHBOARD 1

### LONGITUDE AND LATITUDE



### IATA AND ICAO



### TIMEZONE OF AIRPORT

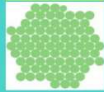


### CODESHARE AND EQUIPMENT

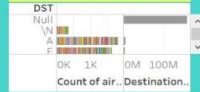


## DASHBOARD 2

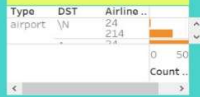
### ROUTES IN INDEX



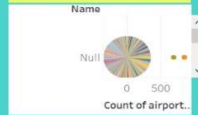
### DESTINATION AIRPORT



### DAYLIGHT SAVINGS TIME



### COUNT OF STOPS



### DASHBOARD 3

CALLSIGN IN AIRLINES



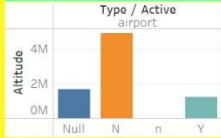
AIRPORT ID AND TIMEZONE



COUNT OF AIRPORT AND DESTINATION



ACTIVE AND ALTITUDE



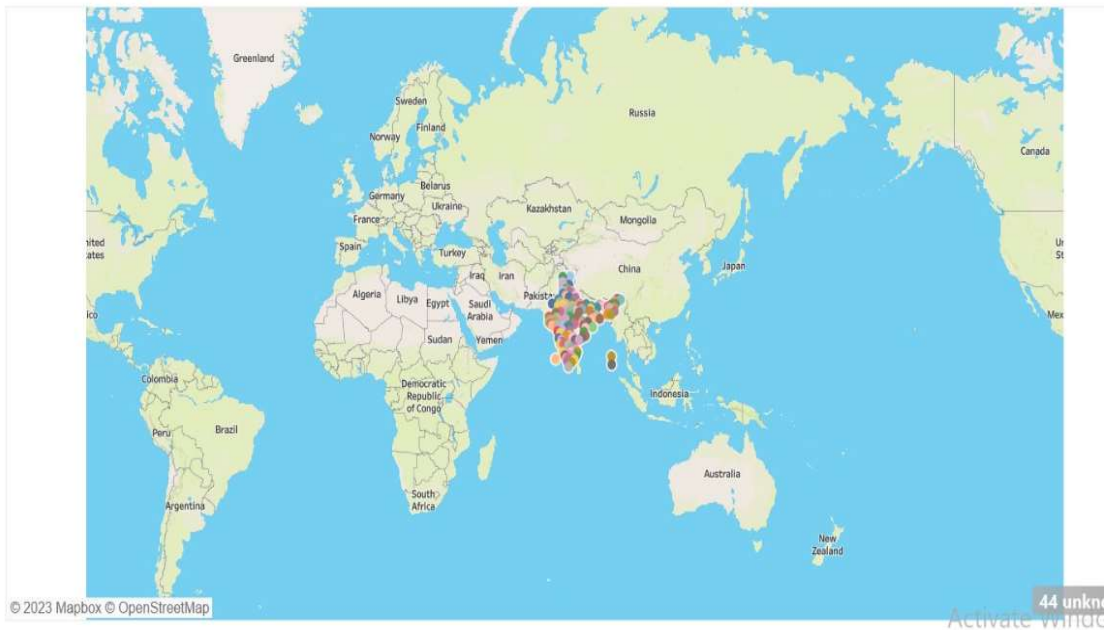
STORY:

Story 1

< THIS MAP REPRESENTATE THE AIRPORTS ID, ICAO, IATA, CITY, LONGITUDE, LATITUDE, ALTITUDE.

THIS CHART REPRESENTATE THE INTERNATIONAL AIR TRANSPORT ASSOCIATION CODE AND

THIS VISUALIZATION ABOUT THE PIECHART BETWEEN THE TIMEZONE OF THE AIRPORT IN

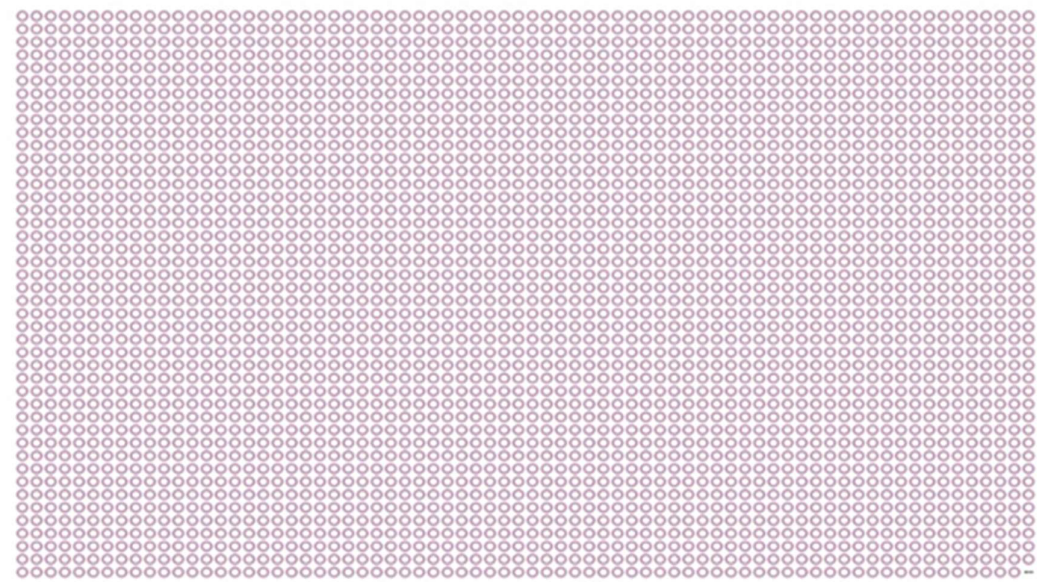


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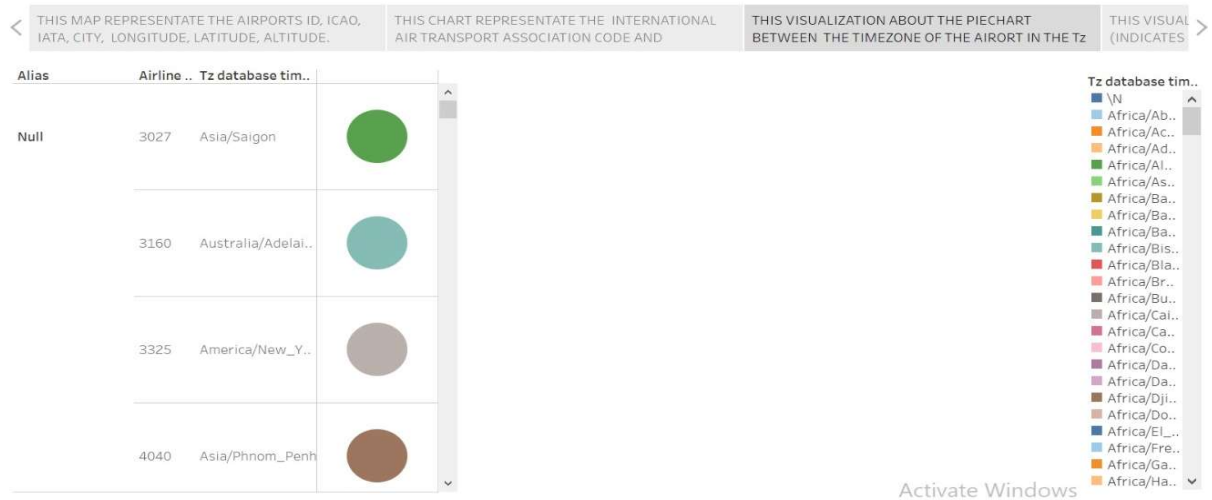
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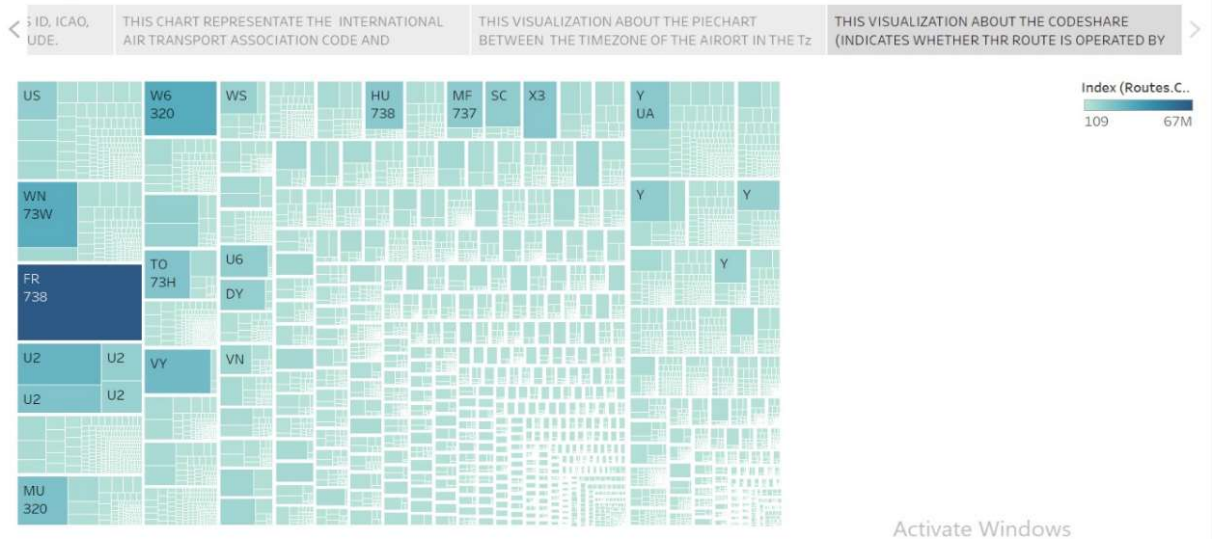




## Story 1



## Story 1

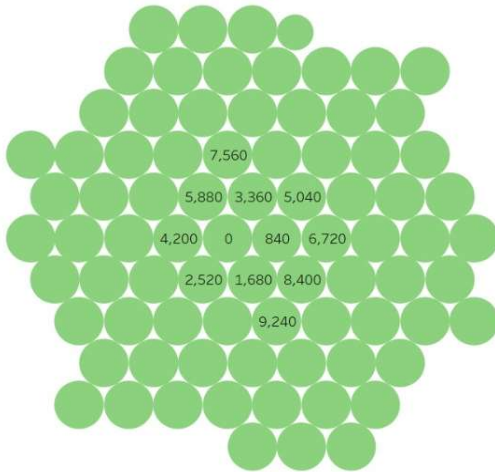


## Story 2

< THIS CHART REPRESENTATE THE VARIOUS ROUTES IN INDEX WITH AIRLINE.

THIS BAR CHART REPRESENTATE THE IATA CODE OF THE AIRPORT TO WHICH THE ROUTE IS HEADED.

THIS BAR CHART REPRESENTATE THE DAYLIGHT SA TIME OF THE AIRPORT. >



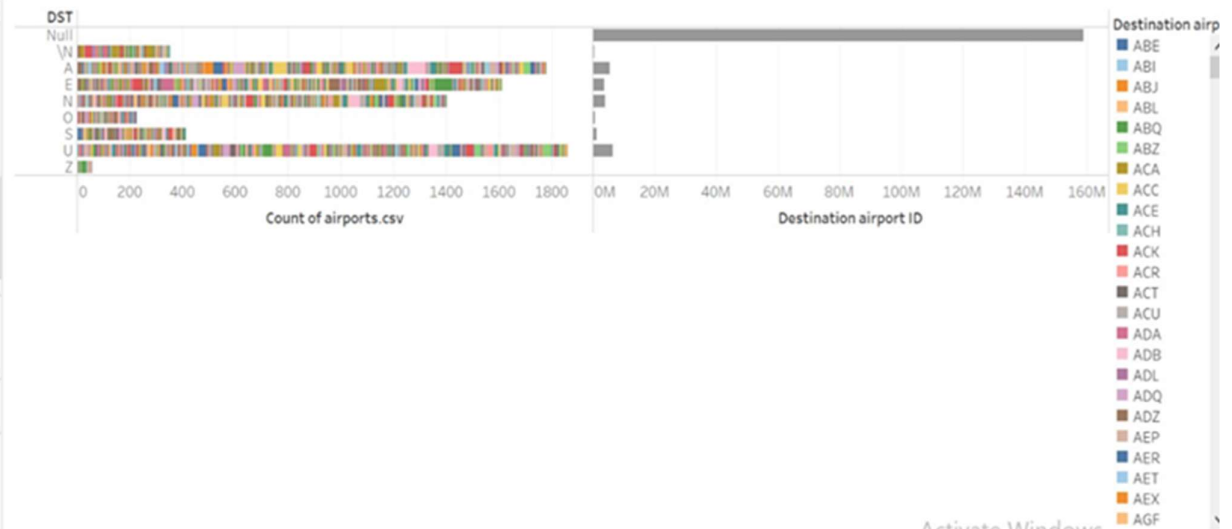
Activate Windows

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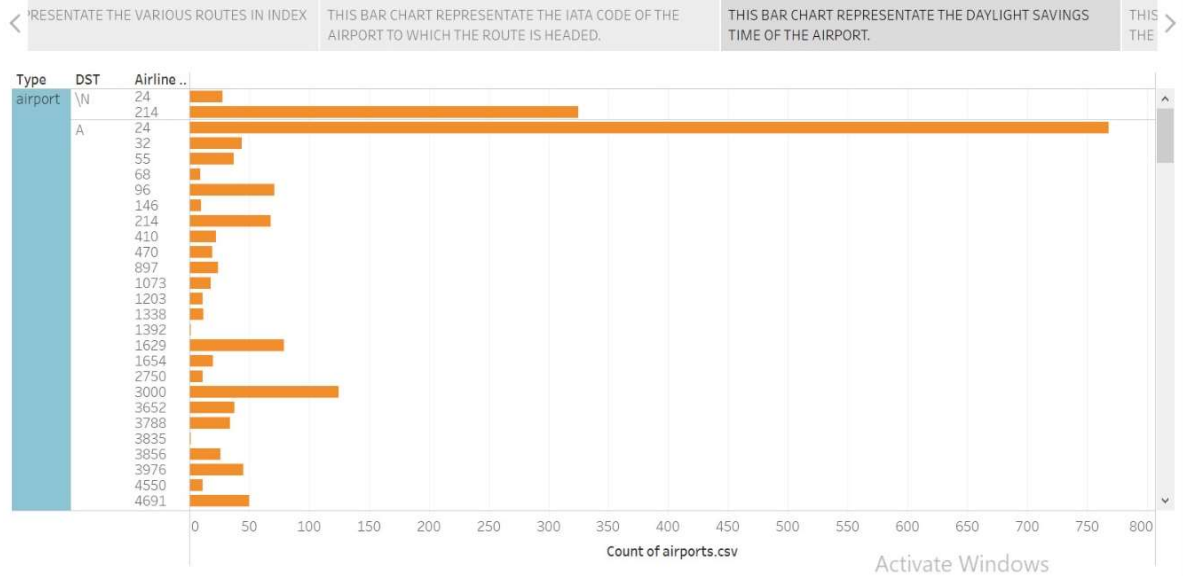
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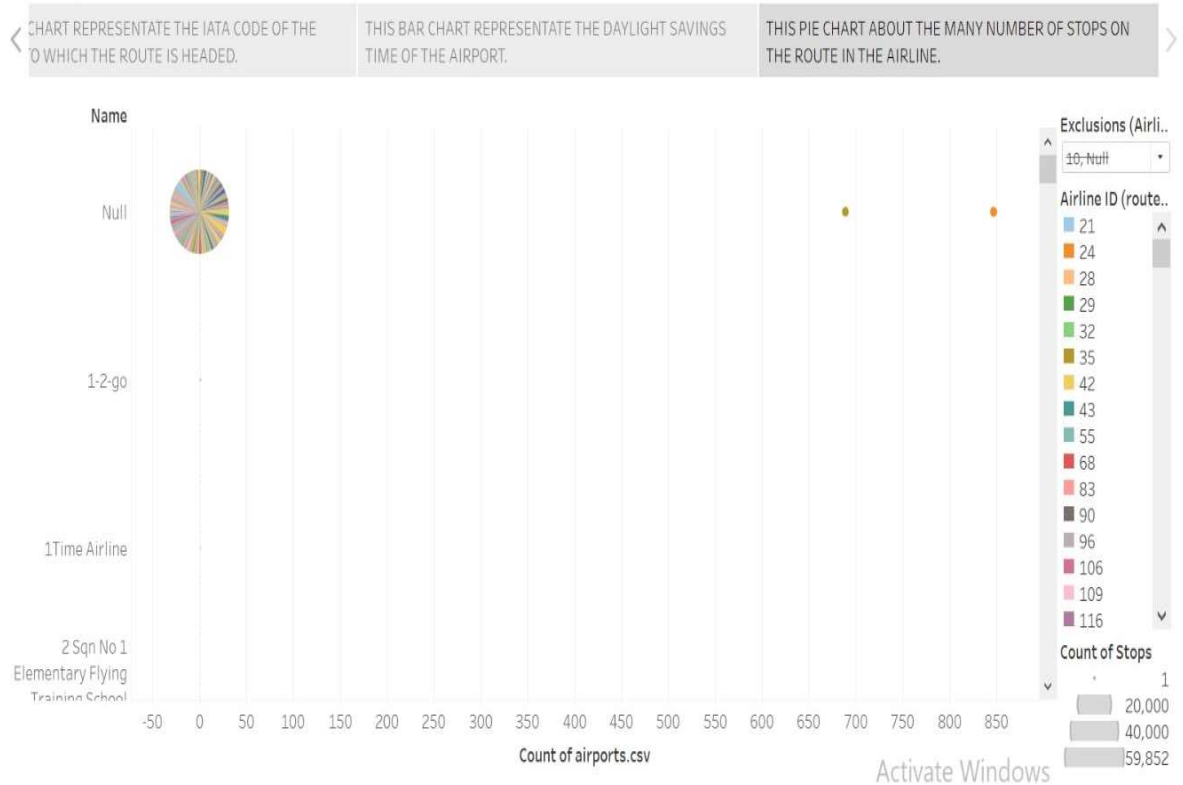
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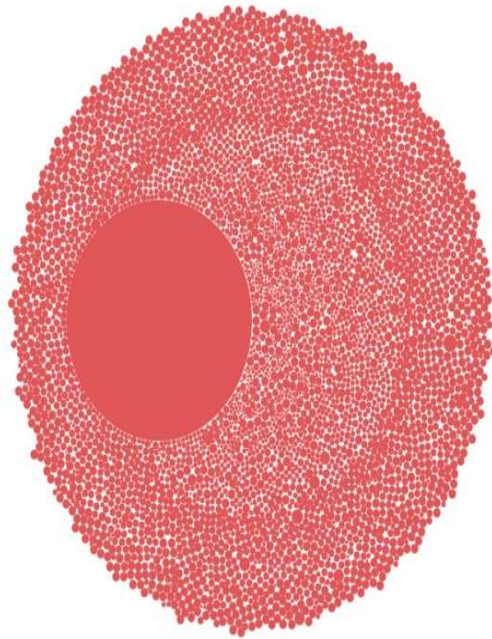


## Story 2



## Story 3

< THIS BUBBLE CHART REPRESENTS THE CALL SIGN OF THE AIRLINE OPERATING AT THE AIRPORT. THIS BAR CHART REPRESENTS THE TIMEZONE OF THE AIRPORT AND AIRPORT IDENTITY. THIS VISUALIZATION ABOUT THE SOURCE OF THE DATA, DESTINATION AIRPORT, COUNT OF ROUTES. >



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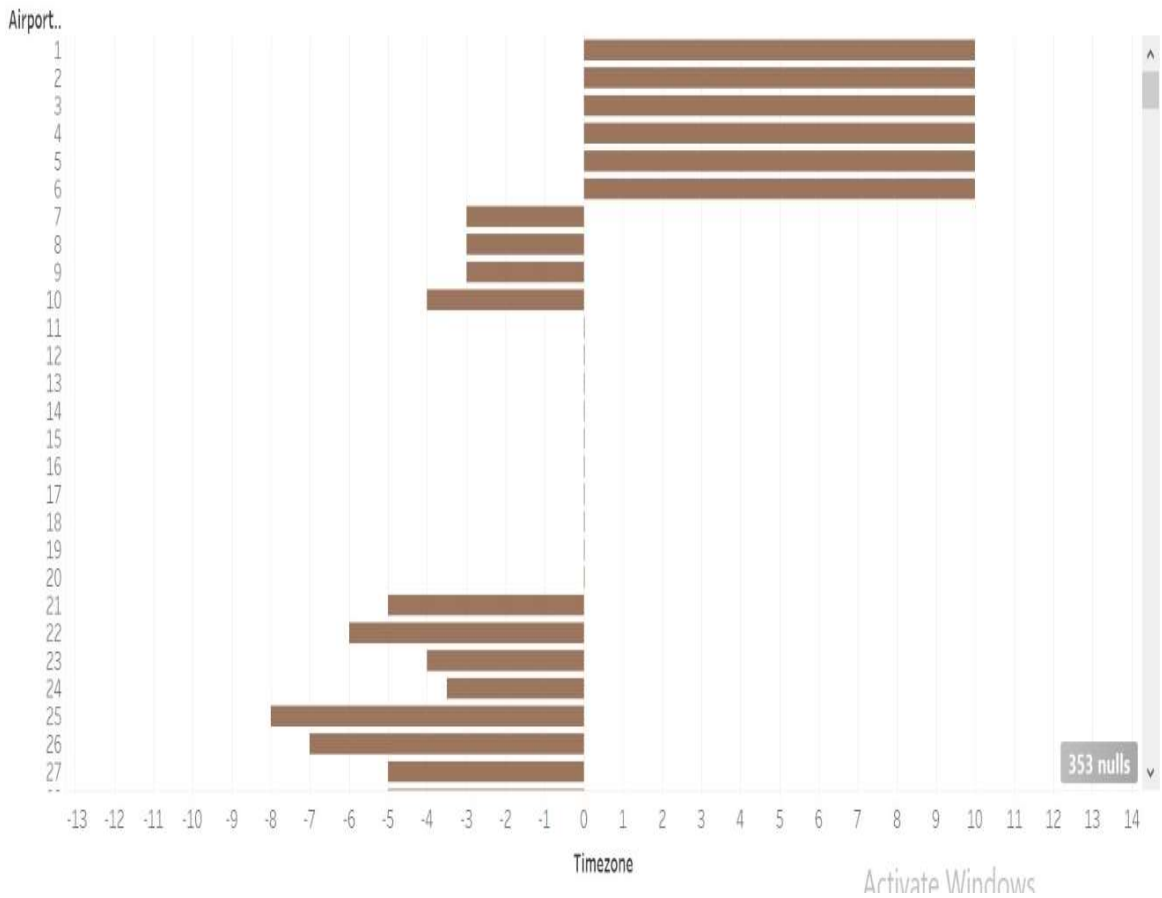
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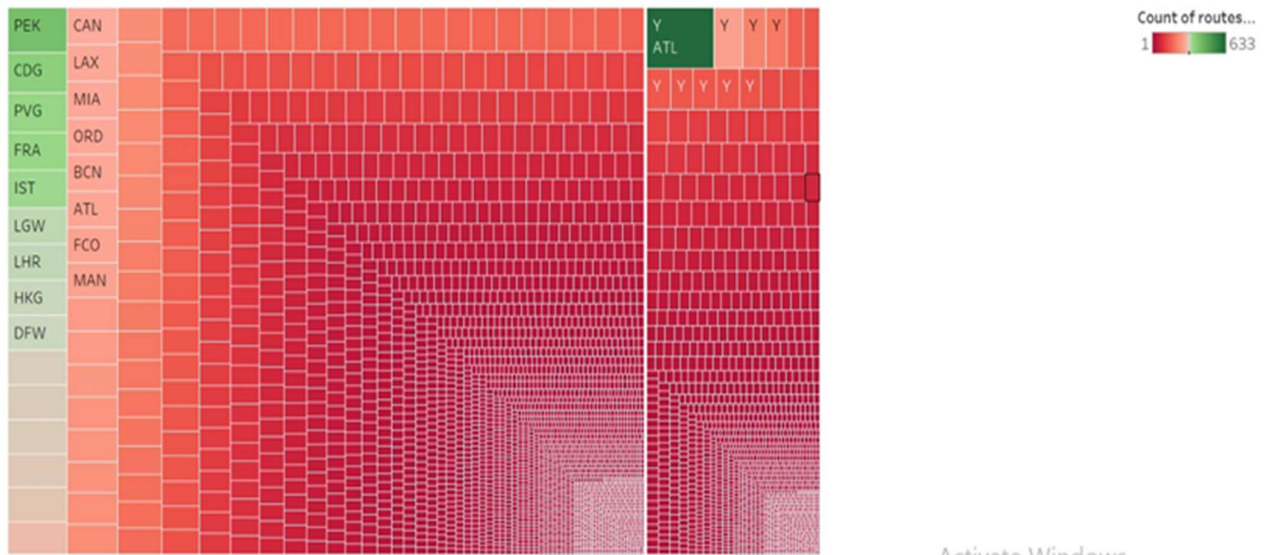
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### Story 3

< THIS CHART REPRESENTS THE TIMEZONE OF THE AIRPORT AND AIRPORT IDENTITY. THIS VISUALIZATION ABOUT THE SOURCE OF THE DATA, DESTINATION AIRPORT, COUNT OF ROUTES. THIS VISUALIZATION IS ABOUT THE ACTIVE (AN ALTERNATE NAME FOR THE AIRPORT) AND ALTITUDE >



### 4.ADVANTAGES:

Fast delivery times;

1. Undoubtedly, one of the most advantageous features offered by air transport is its speedy delivery times.
2. There is no faster transport service than air transport. In addition, the frequency of flights makes delivery times very frequent and fast.

Long Distances;

1. No other means of transport in the logistics sector can cover such long distances as air transport. This is a great advantage for international trade, being able to cover long distances, impossible for road or sea transport.

## 5.DISADVANTAGES:

Higher cost;

1. There is no doubt that air transport is the least economical means of transportation compared to other types of transport.
- 2.The cost of infrastructure, fuel... makes air transport economically superior to other alternatives.
3. It is important to know how to analyze and calculate the economic and logistical performance to know if it is the ideal option to be used.

## 6.CONCLUSION:

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.