Exploring Insights From Synthetic Airline Data Analysis With Qlik

1 Introduction:

"Exploring Insights from Synthetic Airline Data Analysis with Qlik" involves utilizing synthetic airline data to derive valuable insights and patterns using Qlik. A Qlik is a business intelligence and data visualization tool.

In this project,

the synthetic airline data simulates various aspects of airline operations, including flight schedules, passenger information, ticket sales, country detail and performance metrics. The objective is to leverage Qlik's analytical capabilities to uncover patterns, trends, and correlations within this data, aiding in decision-making processes for airlines, airports, and related stakeholders.

Scenario 1: Revenue Optimization
An airline wants to optimize its revenue by analyzing historical ticket sales data, identifying peak travel times, popular destinations, and pricing strategies. Using Qlik, they can visualize revenue trends over time, segment customers based on purchasing behavior, and adjust pricing strategies accordingly to maximize profitability.

Scenario 2: Operational Efficiency
An airport authority aims to enhance operational efficiency by analysis flight schedules, passenger flows, and luggage handling processes. By integrating Qlik with synthetic airline data, they can identify bottlenecks in airport operations, predict peak traffic periods, and allocate resources effectively to streamline processes and improve overall

efficiency.

Scenario 3: Safety

It making sure that flights are safe for passengers and that airlines follows the rules and regulations.

By analysing data about past incidents, they can learn from mistakes and make improvements to keep everyone safe.

Scenario 4: Customer Experience Enhancement

Airlines are keen to enhance the passenger experience by understanding customer preferences, satisfaction levels, and pain points. Through sentiment analysis on customer feedback data integrated with Qlik, airlines can identify areas for improvement, personalize services, and tailor marketing campaigns to better meet customer needs, ultimately fostering loyalty and satisfaction.

Technical Architecture:

We extract the data file from data source and upload it on the qlik where we create are app.

Then analyse this data and remove unwanted data and create the dashboard or a visualization of data for better understanding and enhancing the user experience.

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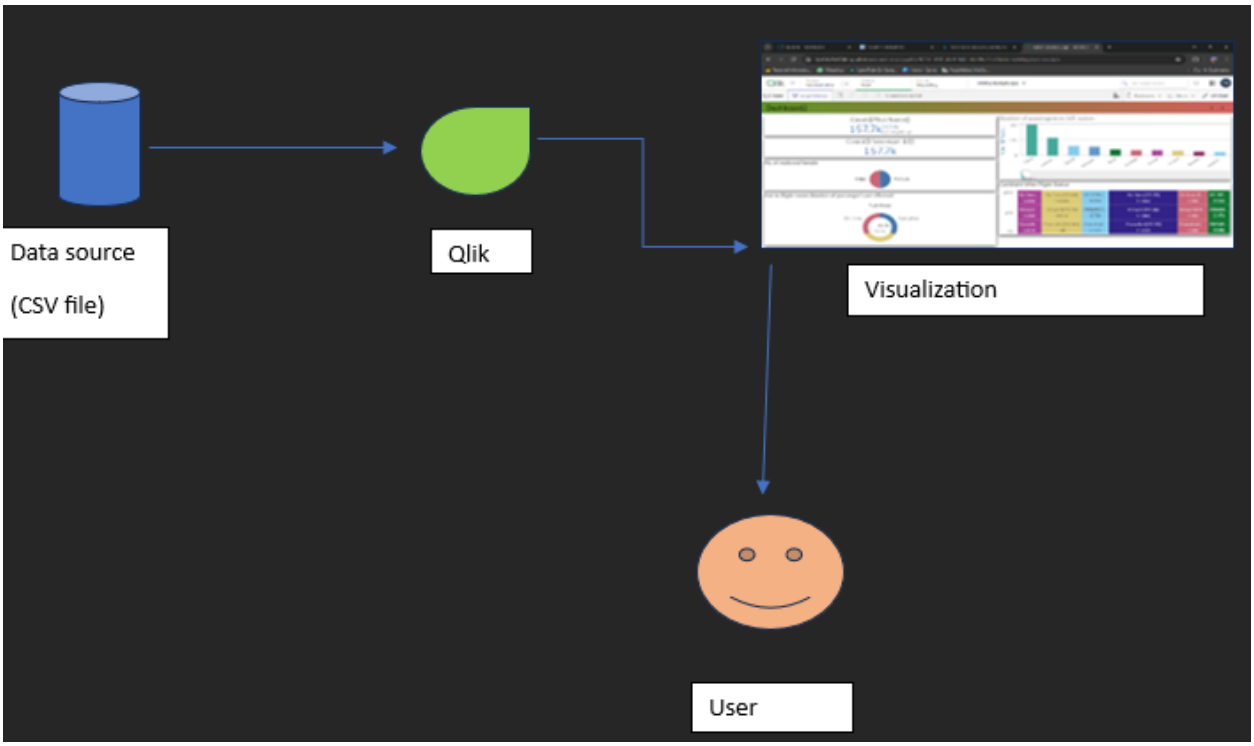

2 Define problem /problem Understanding:

Specify the business problem:

The business problem in airline data analysis is airline can optimize flight routes, schedules and resources based on data insights, reducing costs and mitigate the risk and improving the overall efficiency and making batter decision for future.

Business requirements It Involve:

1. Data collection: Gathering detailed information on ticket sales, passenger preferences, operational costs, and competitor routes.

2. Data analysis: Utilizing analytical tools to identify underperforming routes, patterns in passenger behavior, and opportunities for optimization.

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3. Route optimization: Using insights from data analysis to adjust flight schedules, routes, pricing strategies, and marketing efforts to increase profitability and efficiency.

4. Customer satisfaction: Ensuring that any changes made prioritize passenger convenience, comfort, and overall satisfaction.

5. Monitoring and adaptation: Continuously monitoring key performance indicators (KPIs) and adjusting strategies as needed to maintain profitability and meet evolving market demands.

Literature Survey:

In this first we need to understating the current state of the airline industry including such as passenger behavior, regulatory change, advanced technologies etc.
And then by analysing the data we can find out the useful insights and patterns that can help airline industries to make decisions and enhance the passengers experience, improve the efficiency and more. To analyse the data we use various tools the one of the most popular tool is Qlik.

3 Data Collection:

Collect the data:

I collected the data from the Kaggle. The data set name is Airline dataset.

Connect Data with Qlik Sense:

For connecting the data with Qlik sense following these steps:

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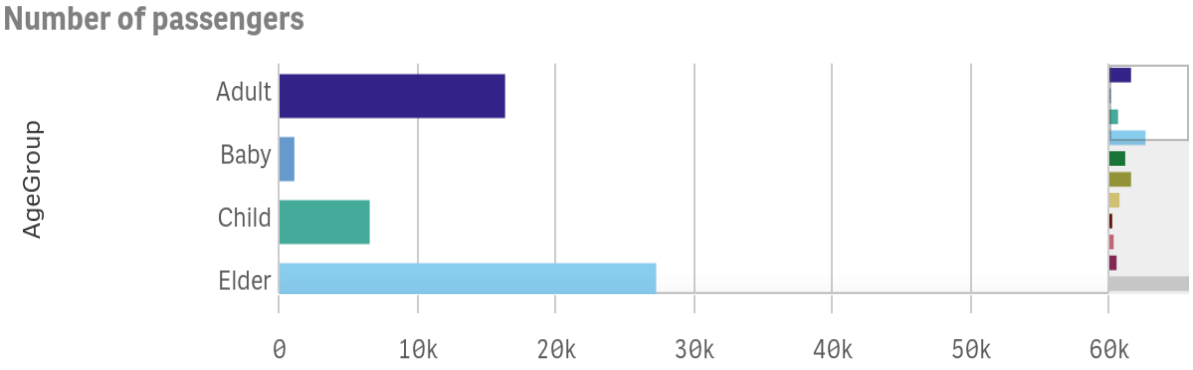
1. You should login to Qlik Cloud
2. Create an app
3. Upload the dataset on that App.

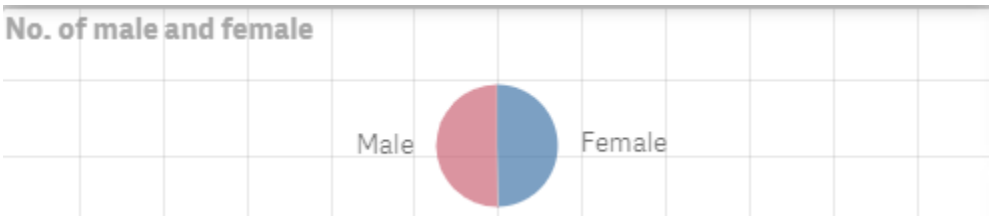
4 Data Preparation:

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into performance and efficiency. Since the data is already cleaned, we can move to visualization.

5 Data visualisation:

It is a process to create a visualisation of data so that the user can easily understand the data. and it make data set /our app is more efficient.





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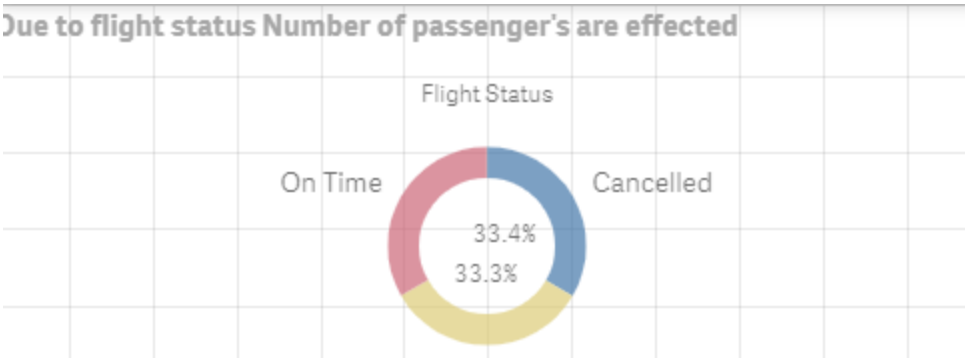

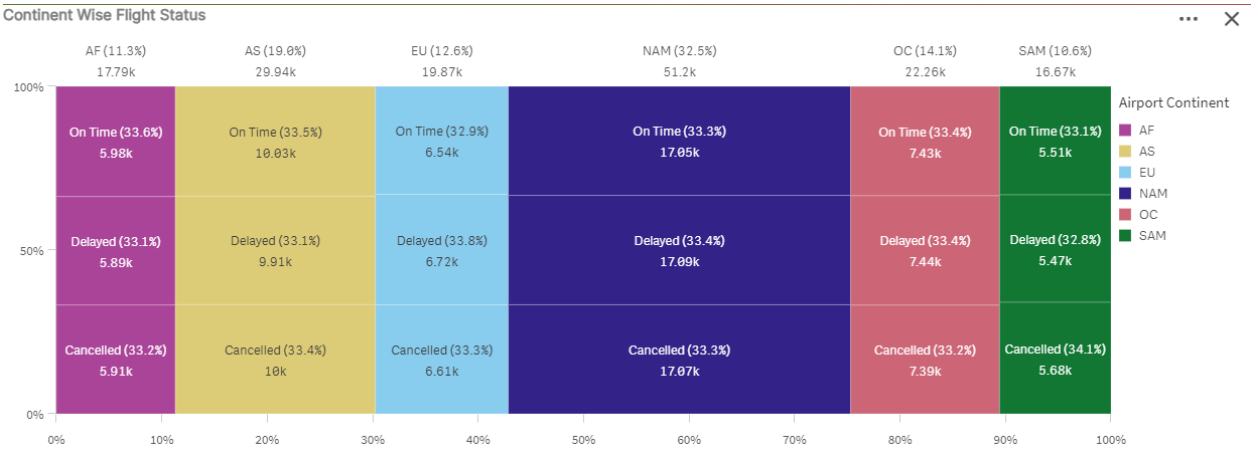

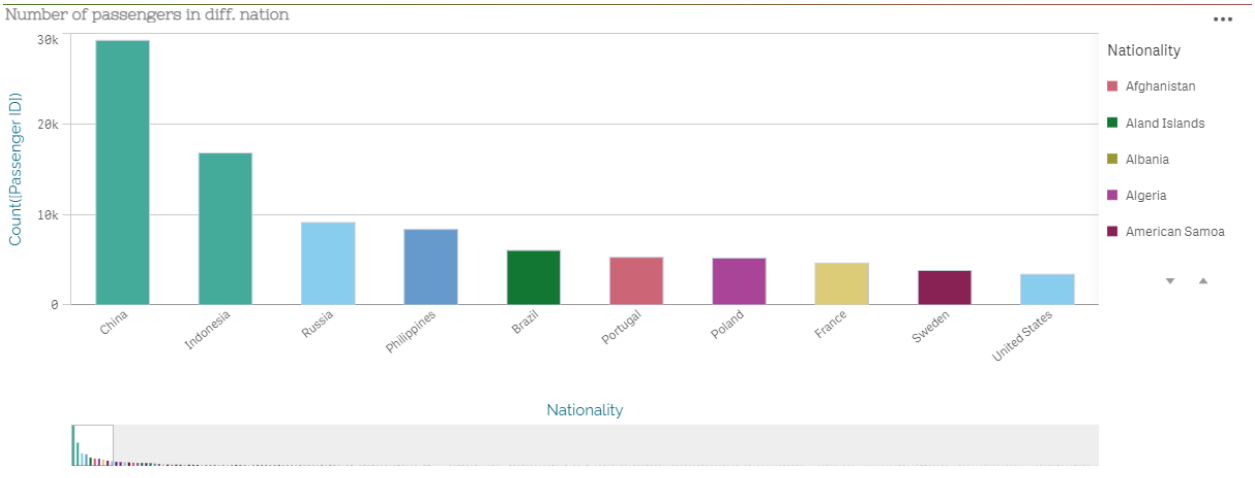

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6 Dashboard:

A dashboard is a way of displaying various types of visual data in one place. Usually, a dashboard is intended to convey different, but related information in an easy-to-digest form. And oftentimes, this includes things like key performance indicators

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(KPI)s or other important business metrics that stakeholders need to see and understand at a glance.

Dashboards are useful across different industries and verticals because they're highly customizable. They can include data of all sorts with varying date ranges to help you understand: what happened, why it happened, what may happen, and what action you should take. And since dashboards use visualizations Table, graphs, and Charts, others who aren't as close to the data can quickly and easily understand the story it tells or the insights it reveals.

Benefits of data dashboards:

- A visual representation of performance
- The ability to identify trends
- An easy way of measuring efficiency
- The means to generate detailed reports with a single click
- The capacity to make more informed decisions
- Total visibility of all systems, campaigns, and actions
- Quick identification of data outliers and correlations

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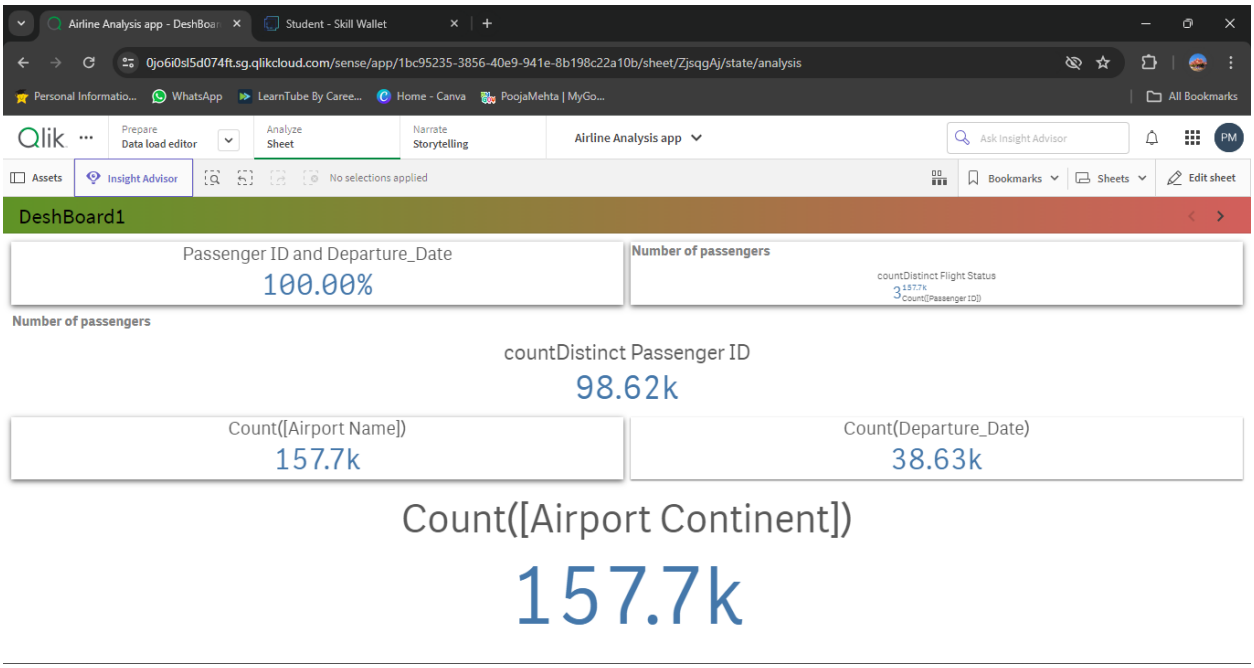

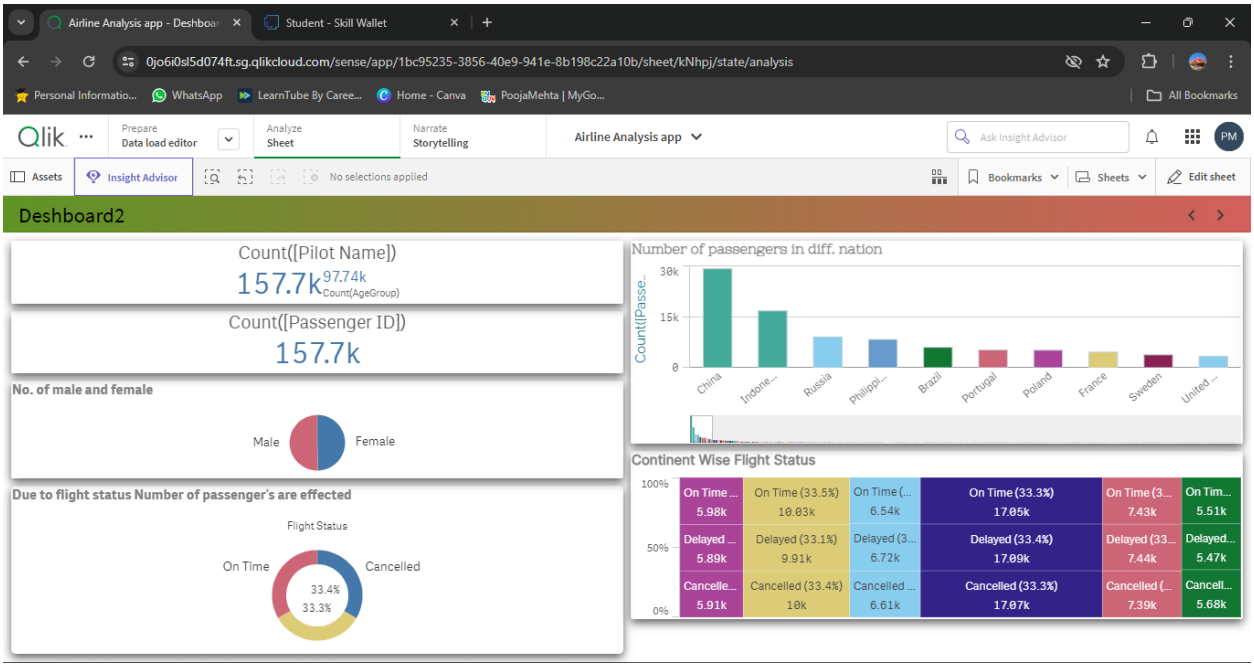

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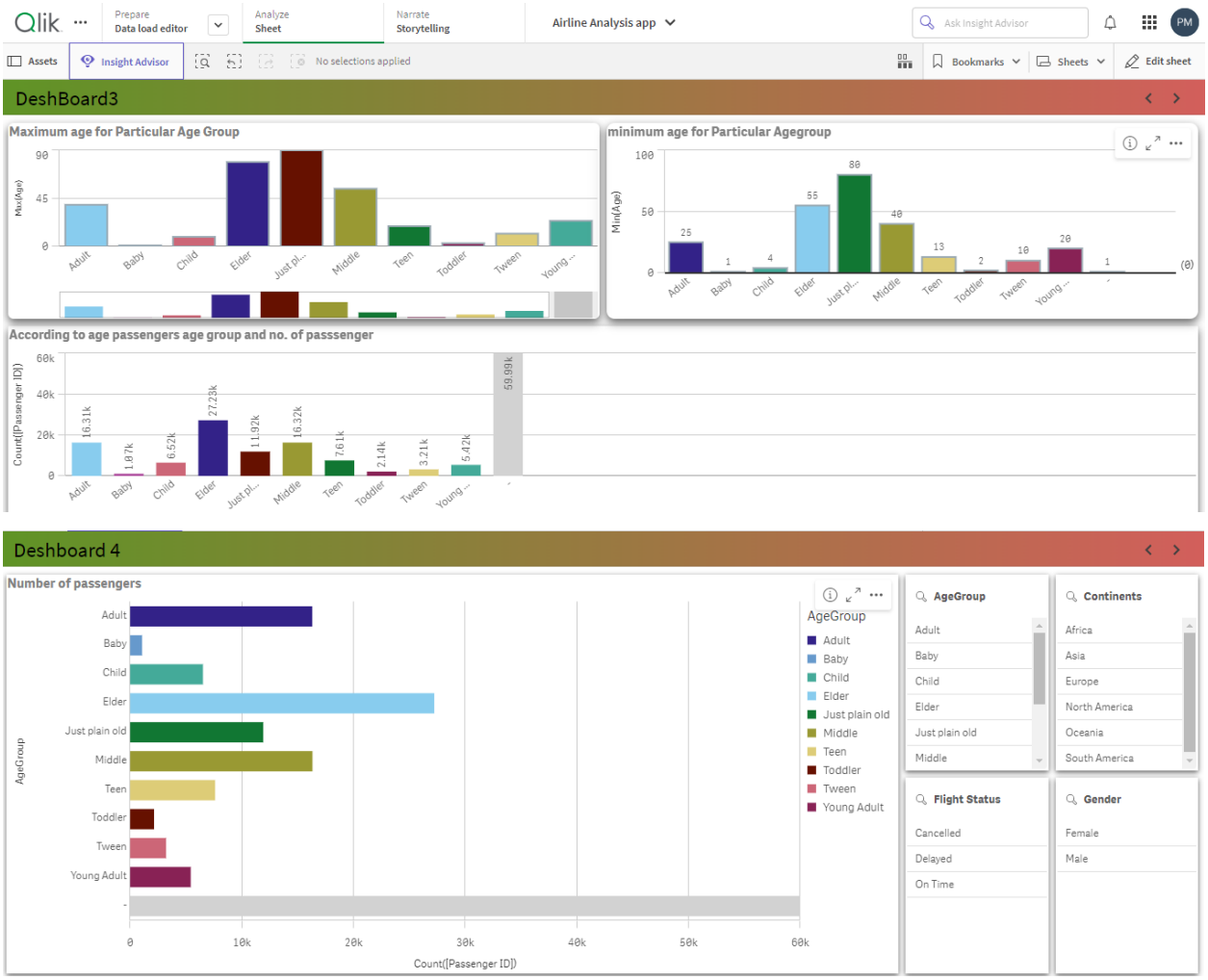

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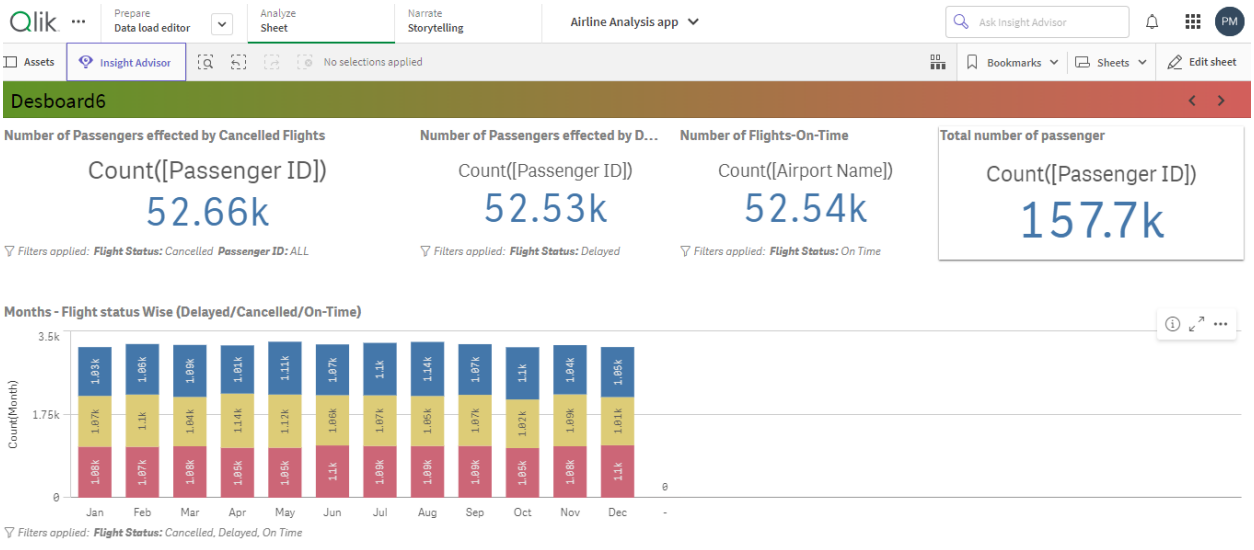
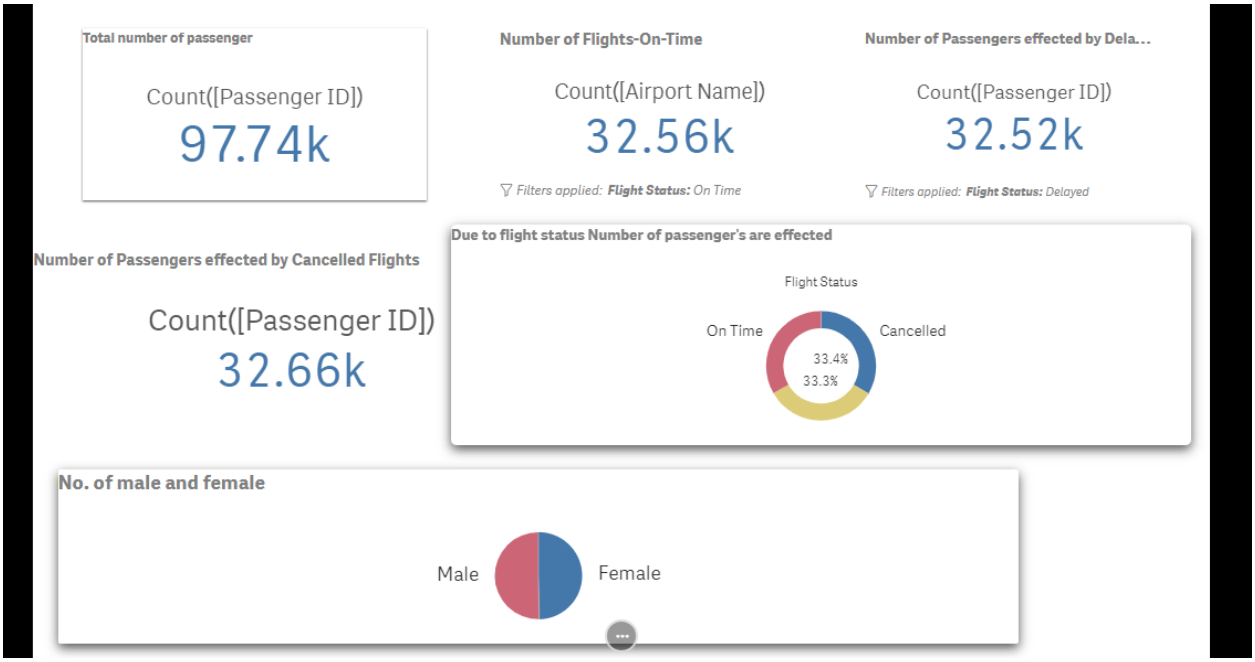
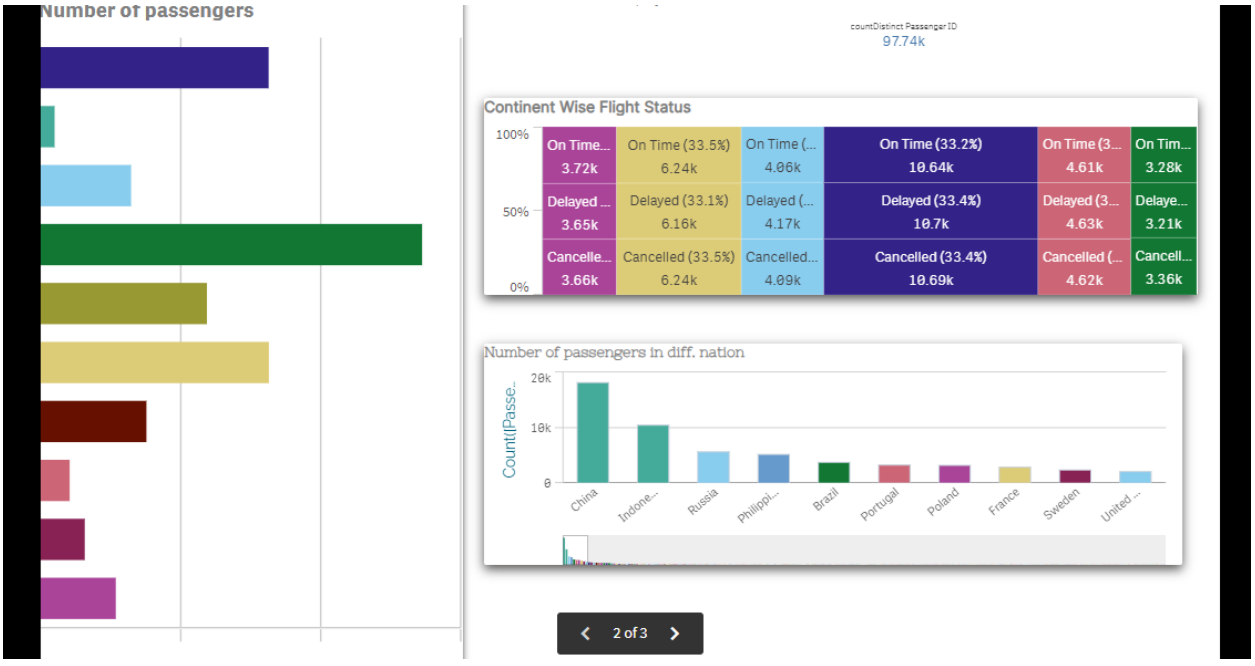


7.STORY:

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. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations,

interactive visualizations, and videos.





8.CONCLUSION:

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We extract the data and analysis then create the dashboard for better experience.