

# **Report**

## **Exploring Insights from Synthetic Airline Dataset with Qlik**

### **Table of Contents**

1. Abstract

2. Introduction

2.1 Technical Architecture:

3. App Creation and Data Upload

3.1. Creating a New App

3.2. Upload the Data File

4. Data Preparation

4.1. Removing Duplicates and Null Values

4.2. Sample Code

5. Visualization Creation

5.1. Key Performance Indicators

5.2. Continent-wise Flight Status

6. Dashboard and Storytelling

6.1. Dashboard Creation

6.2. Storytelling

7. Project Analysis and Scope

7.1. Analysis

7.2. Scope

8. Conclusion

## **Abstract**

This report presents a comprehensive analysis of airline flight performance using Qlik Cloud, a robust data visualization and analytics tool. The project encompasses setting up Qlik Cloud, creating a new application, uploading and preparing data, and generating insightful visualizations. Our primary objective is to measure key performance indicators (KPIs) and analyse flight data across different continents to derive actionable insights. These insights aim to enhance operational efficiency, improve customer satisfaction, and inform strategic decision-making within the airline industry.

## **Introduction**

Qlik Cloud is a powerful tool designed for data analytics and visualization, enabling users to create interactive and informative dashboards. In this project, we leverage Qlik Cloud to analyse a comprehensive airline dataset. This analysis focuses on key performance metrics such as the total number of passengers, the number of on-time flights, delayed flights, and cancelled flights. By visualizing this data, we aim to uncover patterns and insights that can support strategic decisions and operational improvements in the airline industry. This project demonstrates how Qlik Cloud can transform raw data into meaningful visual representations that facilitate deeper understanding and actionable insights.

### **Technical Architecture:**

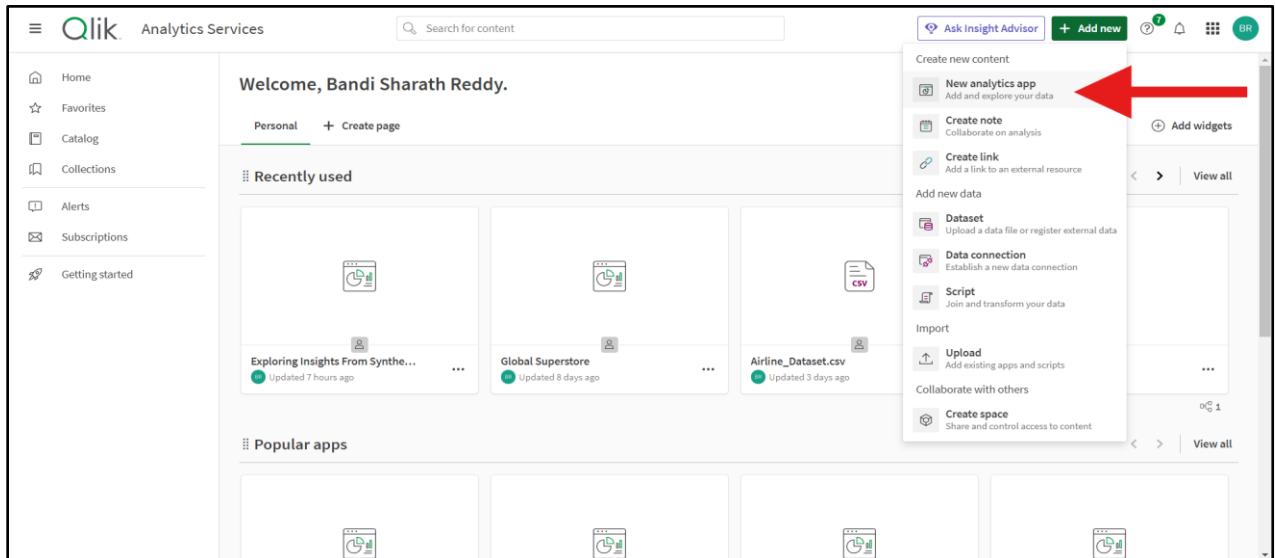
#### **Technical Architecture:**



## Create a New App and Upload Data:

### Create a New App:

1. Click on the "Create App" button to start a new project.

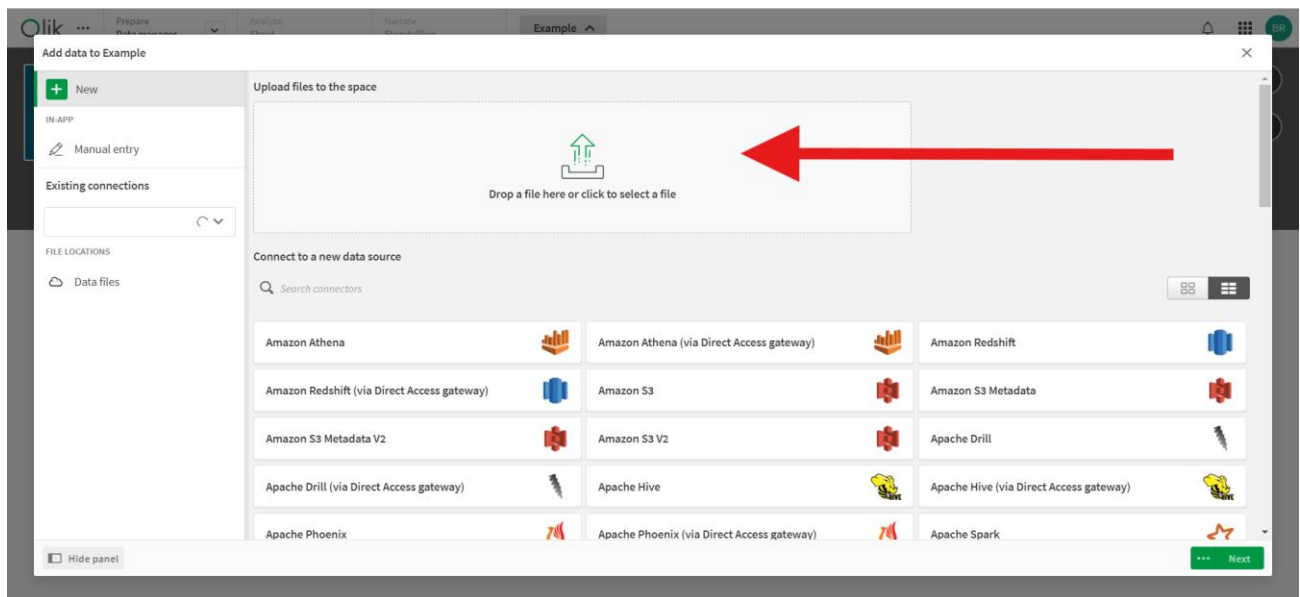
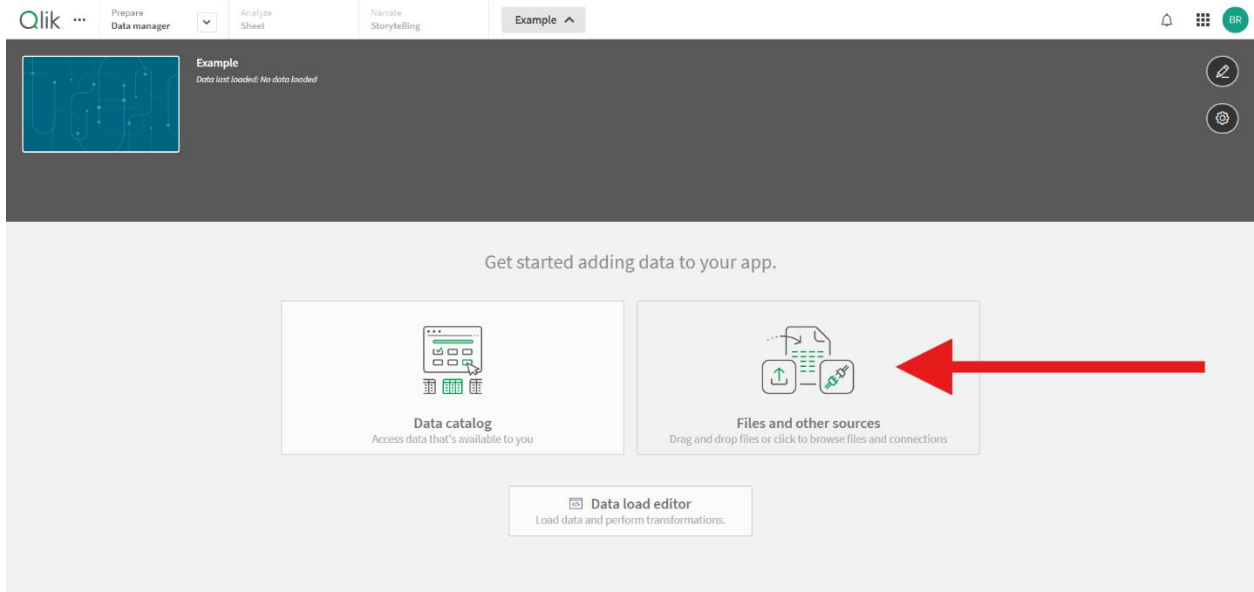


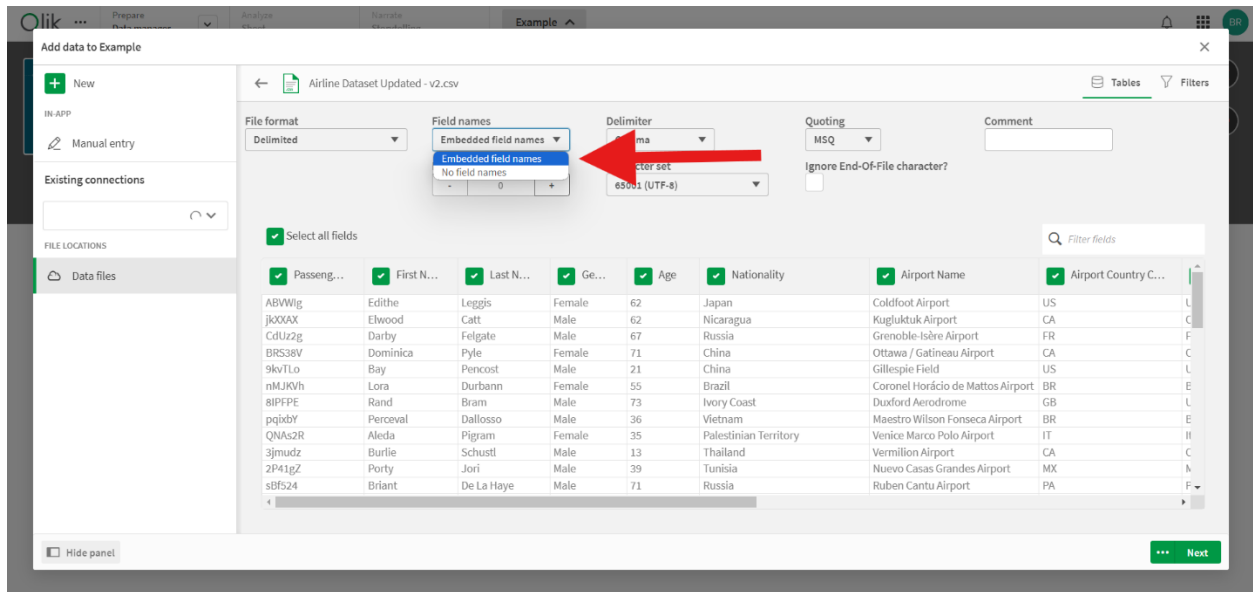
### Upload the Data File:

1. Go to Skill Wallet and download the project flow data set.

Dataset Link : <https://www.kaggle.com/datasets/iamsouravbanerjee/airline-dataset/data?select=Airline+Dataset+Updated+-+v2.csv>

2. In Qlik Sense, upload this data set into the new app. Ensure the dataset is embedded correctly to use the first row as headers if it is not done automatically.





## Data Preparation

### Removing Duplicates and Null Values

#### Data Load Editor:

1. Go to the 'Prepare' tab and open the Data Load Editor.
2. Modify the default Qlik script to handle duplicates and null values as per the requirements.

#### Sample Code:

Use the following Qlik Script to pre-process the airline dataset:

```
...
```

```
// Load data from the source
```

```
LOAD
```

```
[Passenger ID],
[First Name],
[Last Name],
Gender,
Age,
Nationality,
[Airport Name],
[Airport Country Code],
[Country Name],
[Airport Continent],
```

```

Continents,
[Departure_Date],
[Arrival Airport],
[Pilot Name],
[Flight Status]
FROM [lib://YourDataFolder/Airline_dataset.csv]
(txt, codepage is 1252, embedded labels, delimiter is ',', msq);

// Remove duplicates
NoConcatenate
LOAD Distinct *
Resident Airline_dataset;

// Handle null values by replacing them with appropriate values
LOAD
[Passenger ID],
If(Len(Trim([First Name]))=0, 'Unknown', [First Name]) as [First Name],
If(Len(Trim([Last Name]))=0, 'Unknown', [Last Name]) as [Last Name],
If(IsNull(Gender), 'Unknown', Gender) as Gender,
If(IsNull(Age), 0, Age) as Age,
If(Len(Trim(Nationality))=0, 'Unknown', Nationality) as Nationality,
If(Len(Trim([Airport Name]))=0, 'Unknown', [Airport Name]) as [Airport Name],
If(Len(Trim([Airport Country Code]))=0, 'Unknown', [Airport Country Code]) as [Airport Country
Code],
If(Len(Trim([Country Name]))=0, 'Unknown', [Country Name]) as [Country Name],
If(Len(Trim([Airport Continent]))=0, 'Unknown', [Airport Continent]) as [Airport Continent],
If(Len(Trim(Continents))=0, 'Unknown', Continents) as Continents,
If(IsNull([Departure_Date]), '1900-01-01', [Departure_Date]) as [Departure_Date],
If(Len(Trim([Arrival Airport]))=0, 'Unknown', [Arrival Airport]) as [Arrival Airport],
If(Len(Trim([Pilot Name]))=0, 'Unknown', [Pilot Name]) as [Pilot Name],
If(Len(Trim([Flight Status]))=0, 'Unknown', [Flight Status]) as [Flight Status],
MonthName([Departure_Date]) AS MonthYear
Resident Airline_dataset;

// Drop the temporary table
Drop Table Airline_dataset;

```

**The dataset is already clean [no need to use above script], so you can start preprocessing it directly without the need for additional data cleaning.**

Qlik

Prepare  
Data manager

Analyze  
Sheet

Narrate  
Storytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

🔔

👤

BR

+ Add data

Concatenate or join

Unpivot

Add field

Select data from source

Load data

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Continents	Departure Date	Arrival Airport	Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female
Europe	-	BRE	Federico Crebo	Delayed	-	-	-	Delayed	-	Female
North America	-	YQH	Wilone Falkous	On Time	-	-	-	-	-	Female
North America	-	KKL	Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-
North America	-	HCR	Glennie Evitt	On Time	-	-	-	-	Male	-
Oceania	9/2/2022	RTS	Zulema Bodechon	On Time	2022	Sep	-	-	Male	-
South America	-	VLR	Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-
Asia	-	YON	Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-
North America	-	ZMH	Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-
Oceania	4/6/2022	KGI	Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female
South America	-	PPY	Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-
South America	-	0	Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-
Europe	12/8/2022	DUB	Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female
North America	-	HAR	Robenia Willford	On Time	-	-	-	-	Male	-
South America	-	VGZ	Shae Hercock	On Time	-	-	-	-	Male	-
Asia	11/4/2022	BPE	Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female
North America	9/9/2022	WYB	Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female
North America	-	VDZ	Norma Jellico	Delayed	-	-	-	Delayed	-	Female
Africa	10/2/2022	HBE	Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-
Africa	-	MRE	Samaria Woolway	On Time	-	-	-	-	Male	-
Asia	-	PKX	Terrel Carillo	On Time	-	-	-	-	-	Female
Africa	-	WTA	Zollie Keynd	On Time	-	-	-	-	Male	-

Update calculated field

Name  
Month

Expression  
Month([Departure Date])

Preview  
Jan  
Feb  
Mar  
Apr

Update

Show data preview

Qlik

Prepare  
Data manager

Analyze  
Sheet

Narrate  
Storytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

🔔

👤

BR

+ Add data

Concatenate or join

Unpivot

Add field

Select data from source

Load data

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Continents	Departure Date	Arrival Airport	Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female
Europe	-	BRE	Federico Crebo	Delayed	-	-	-	Delayed	-	Female
North America	-	YQH	Wilone Falkous	On Time	-	-	-	-	-	Female
North America	-	KKL	Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-
North America	-	HCR	Glennie Evitt	On Time	-	-	-	-	Male	-
Oceania	9/2/2022	RTS	Zulema Bodechon	On Time	2022	Sep	-	-	Male	-
South America	-	VLR	Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-
Asia	-	YON	Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-
North America	-	ZMH	Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-
Oceania	4/6/2022	KGI	Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Male
South America	-	PPY	Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-
South America	-	0	Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-
Europe	12/8/2022	DUB	Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female
North America	-	HAR	Robenia Willford	On Time	-	-	-	-	Male	-
South America	-	VGZ	Shae Hercock	On Time	-	-	-	-	Male	-
Asia	11/4/2022	BPE	Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female
North America	9/9/2022	WYB	Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female
North America	-	VDZ	Norma Jellico	Delayed	-	-	-	Delayed	-	Female
Africa	10/2/2022	HBE	Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-
Africa	-	MRE	Samaria Woolway	On Time	-	-	-	-	Male	-
Asia	-	PKX	Terrel Carillo	On Time	-	-	-	-	-	Female
Africa	-	WTA	Zollie Keynd	On Time	-	-	-	-	Male	-

Update calculated field

Name  
Year

Expression  
Year([Departure Date])

Preview  
2022

Update

Show data preview

Qlik

PrepareData manager

AnalyzeSheet

NarrateStorytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

Load data

+

Add data

Concatenate or join

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Unpivot

Add field

Select data from source

Continents	Departure Date	Arrival Airport	Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female
Europe	-	BRE	Federico Crebo	Delayed	-	-	-	Delayed	-	Female
North America	-	YQH	Wilone Falkous	On Time	-	-	-	-	-	Female
North America	-	KKL	Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-
North America	-	HCR	Glennie Evitt	On Time	-	-	-	-	Male	-
Oceania	9/2/2022	RTS	Zulema Bodechon	On Time	2022	Sep	-	-	Male	-
South America	-	VLR	Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-
Asia	-	YON	Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-
North America	-	ZMH	Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-
Oceania	4/6/2022	KGI	Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female
South America	-	PPY	Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-
South America	-	0	Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-
Europe	12/8/2022	DUB	Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female
North America	-	HAR	Robenia Willford	On Time	-	-	-	-	Male	-
South America	-	VGZ	Shae Hercock	On Time	-	-	-	-	Male	-
Asia	11/4/2022	BPE	Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female
North America	9/9/2022	WYB	Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female
North America	-	VDZ	Norma Jellico	Delayed	-	-	-	Delayed	-	Female
Africa	10/2/2022	HBE	Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-
Africa	-	MRE	Samarina Woolway	On Time	-	-	-	-	Male	-
Asia	-	PKX	Terrel Carillo	On Time	-	-	-	-	-	Female
Africa	-	WTA	Zollie Keynd	On Time	-	-	-	-	Male	-

Update calculated field

NameCancelled

ExpressionIf([FlightStatus]='Cancelled','Cancelled')

PreviewCancelled

Update

Qlik

PrepareData manager

AnalyzeSheet

NarrateStorytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

Load data

+

Add data

Concatenate or join

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Unpivot

Add field

Select data from source

Continents	Departure Date	Arrival Airport	Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female
Europe	-	BRE	Federico Crebo	Delayed	-	-	-	Delayed	-	Female
North America	-	YQH	Wilone Falkous	On Time	-	-	-	-	-	Female
North America	-	KKL	Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-
North America	-	HCR	Glennie Evitt	On Time	-	-	-	-	Male	-
Oceania	9/2/2022	RTS	Zulema Bodechon	On Time	2022	Sep	-	-	Male	-
South America	-	VLR	Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-
Asia	-	YON	Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-
North America	-	ZMH	Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-
Oceania	4/6/2022	KGI	Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female
South America	-	PPY	Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-
South America	-	0	Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-
Europe	12/8/2022	DUB	Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female
North America	-	HAR	Robenia Willford	On Time	-	-	-	-	Male	-
South America	-	VGZ	Shae Hercock	On Time	-	-	-	-	Male	-
Asia	11/4/2022	BPE	Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female
North America	9/9/2022	WYB	Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female
North America	-	VDZ	Norma Jellico	Delayed	-	-	-	Delayed	-	Female
Africa	10/2/2022	HBE	Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-
Africa	-	MRE	Samarina Woolway	On Time	-	-	-	-	Male	-
Asia	-	PKX	Terrel Carillo	On Time	-	-	-	-	-	Female
Africa	-	WTA	Zollie Keynd	On Time	-	-	-	-	Male	-

Update calculated field

NameDelayed

ExpressionIf([FlightStatus]='Delayed','Delayed')

PreviewDelayed

Update



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+ Add data Concatenate or join

Airline\_Dataset Columns: 23 Rows: 98619

Unpivot Add field Select data from source

Continents	Departure Date	Arrival Airport	Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female
Europe	-	BRE	Federico Crebo	Delayed	-	-	-	Delayed	-	Female
North America	-	YQH	Wilone Falkous	On Time	-	-	-	-	-	Female
North America	-	KKL	Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-
North America	-	HCR	Glennie Evitt	On Time	-	-	-	Cancelled	Male	-
Oceania	9/2/2022	RTS	Zulema Bodechon	On Time	2022	Sep	-	-	Male	-
South America	-	VLR	Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-
Asia	-	YON	Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-
North America	-	ZMH	Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-
Oceania	4/6/2022	KGI	Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female
South America	-	PPY	Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-
South America	-	0	Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-
Europe	12/8/2022	DUB	Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female
North America	-	HAR	Robenia Willford	On Time	-	-	-	-	Male	-
South America	-	VGZ	Shae Hercock	On Time	-	-	-	-	Male	-
Asia	11/4/2022	BPE	Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female
North America	9/9/2022	WYB	Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female
North America	-	VDZ	Norma Jellico	Delayed	-	-	-	Delayed	-	Female
Africa	10/2/2022	HBE	Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-
Africa	-	MRE	Samaria Woolway	On Time	-	-	-	-	Male	-
Asia	-	PKX	Terrel Carillo	On Time	-	-	-	-	-	Female
Africa	-	WTA	Zollie Keynd	On Time	-	-	-	-	Male	-

Update calculated field

Name: Male

Expression: If( gender='Male', 'Male' )

Preview: Male

Update

Qlik ... Prepare Data manager Analyze Sheet Narrate Storytelling Exploring Insights From Synthetic Airline Data Analysis With Qlik

+ Add data Concatenate or join

Airline\_Dataset Columns: 23 Rows: 98619

Unpivot Add field Select data from source

Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female	On Time	Age Group
Federico Crebo	Delayed	-	-	-	Delayed	-	Female	-	Child
Wilone Falkous	On Time	-	-	-	-	-	Female	On Time	Teenager
Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-	-	Senior
Glennie Evitt	On Time	-	-	-	-	Male	-	On Time	Elderly
Zulema Bodechon	On Time	2022	Sep	-	-	Male	-	On Time	Elderly
Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-	-	Senior
Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female	-	Middle-aged
Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-	-	Young Adult
Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female	-	Young Adult
Robenia Willford	On Time	-	-	-	-	Male	-	On Time	Teenager
Shae Hercock	On Time	-	-	-	-	Male	-	On Time	Middle-aged
Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female	-	Senior
Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female	-	Young Adult
Norma Jellico	Delayed	-	-	-	Delayed	-	Female	-	Young Adult
Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-	-	Elderly
Samaria Woolway	On Time	-	-	-	-	Male	-	On Time	Young Adult
Terrel Carillo	On Time	-	-	-	-	-	Female	On Time	Elderly
Zollie Keynd	On Time	-	-	-	-	Male	-	On Time	Senior

Update calculated field

Name: Female

Expression: If( gender='Female', 'Female' )

Preview: Female

Update

Qlik

Prepare  
Data manager

Analyze  
Sheet

Narrate  
Storytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

BR

+ Add data

Concatenate or join

Unpivot

Add field

Select data from source

Load data

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female	On Time	Age Group
Federico Crebo	Delayed	-	-	-	Delayed	-	Female	-	Child
Wilone Falkous	On Time	-	-	-	-	-	Female	On Time	Teenager
Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-	-	Senior
Glennie Evitt	On Time	-	-	-	-	Male	-	On Time	Elderly
Zulema Bodechon	On Time	2022	Sep	-	-	Male	-	On Time	Elderly
Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-	-	Senior
Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female	-	Middle-aged
Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-	-	Young Adult
Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female	-	Young Adult
Robenia Willford	On Time	-	-	-	-	Male	-	On Time	Teenager
Shae Hercock	On Time	-	-	-	-	Male	-	On Time	Middle-aged
Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female	-	Senior
Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female	-	Young Adult
Norma Jellico	Delayed	-	-	-	Delayed	-	Female	-	Young Adult
Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-	-	Elderly
Samaria Woolway	On Time	-	-	-	-	Male	-	On Time	Young Adult
Terrel Carillo	On Time	-	-	-	-	-	Female	On Time	Elderly
Zotlie Keynd	On Time	-	-	-	-	Male	-	On Time	Senior

Update calculated field

Name

On Time

Expression

If([Flight Status]='On Time','On Time')

Preview

On Time

Update

Qlik

Prepare  
Data manager

Analyze  
Sheet

Narrate  
Storytelling

Exploring Insights From Synthetic Airline Data Analysis With Qlik

BR

+ Add data

Concatenate or join

Unpivot

Add field

Select data from source

Load data

Airline\_Dataset

Airline\_Dataset.csv

Columns: 23

Rows: 98619

Pilot Name	Flight Status	Year	Month	Cancelled	Delayed	Male	Female	On Time	Age Group
Federico Crebo	Delayed	-	-	-	Delayed	-	Female	-	Child
Wilone Falkous	On Time	-	-	-	-	-	Female	On Time	Teenager
Shelba Freund	Cancelled	-	-	Cancelled	-	Male	-	-	Senior
Glennie Evitt	On Time	-	-	-	-	Male	-	On Time	Elderly
Zulema Bodechon	On Time	2022	Sep	-	-	Male	-	On Time	Elderly
Phillipp Helstrip	Delayed	-	-	-	Delayed	Male	-	-	Senior
Madlin Bulmer	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Robbin Dunnion	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Helen-elizabeth Sayce	Cancelled	2022	Apr	Cancelled	-	-	Female	-	Middle-aged
Ernesta Croisdall	Cancelled	-	-	Cancelled	-	Male	-	-	Young Adult
Bert Insworth	Cancelled	-	-	Cancelled	-	Male	-	-	Middle-aged
Griswold Hugli	Cancelled	2022	Dec	Cancelled	-	-	Female	-	Young Adult
Robenia Willford	On Time	-	-	-	-	Male	-	On Time	Teenager
Shae Hercock	On Time	-	-	-	-	Male	-	On Time	Middle-aged
Nessi Clandillon	Cancelled	2022	Nov	Cancelled	-	-	Female	-	Senior
Odelia Dunbabin	Delayed	2022	Sep	-	Delayed	-	Female	-	Young Adult
Norma Jellico	Delayed	-	-	-	Delayed	-	Female	-	Young Adult
Joy Brose	Cancelled	2022	Oct	Cancelled	-	Male	-	-	Elderly
Samaria Woolway	On Time	-	-	-	-	Male	-	On Time	Young Adult
Terrel Carillo	On Time	-	-	-	-	-	Female	On Time	Elderly
Zotlie Keynd	On Time	-	-	-	-	Male	-	On Time	Senior

Update calculated field

Name

Age Group

Expression

if(Age <= 1, 'Baby',  
if(Age <= 3, 'Toddler',  
if(Age <= 9, 'Child',  
if(Age <= 19, 'Teenager',  
if(Age <= 39, 'Young Adult',  
if(Age <= 54, 'Middle-aged',  
if(Age <= 79, 'Senior'))

Preview

Baby

Child

Elderly

Middle-aged

Update

## **Visualization Creation**

### **Key Performance Indicators**

#### **Total Passengers:**

Measure: `Count (distinct [Passenger ID])`

#### **On-time Flights:**

Measure: `Count ({< [Flight Status] = {'On Time'} >} DISTINCT [Passenger ID])`

#### **Delayed Flights:**

Measure: `Count ({< [Flight Status] = {'Delayed'} >} DISTINCT [Passenger ID])`

#### **Cancelled Flights:**

Measure: `Count ({< [Flight Status] = {'Cancelled'} >} DISTINCT [Passenger ID])`

#### **Continent-wise Flight Status Visualization:**

Tree Map

Dimension: `Continent`

Rectangle Size: `Flight Status`

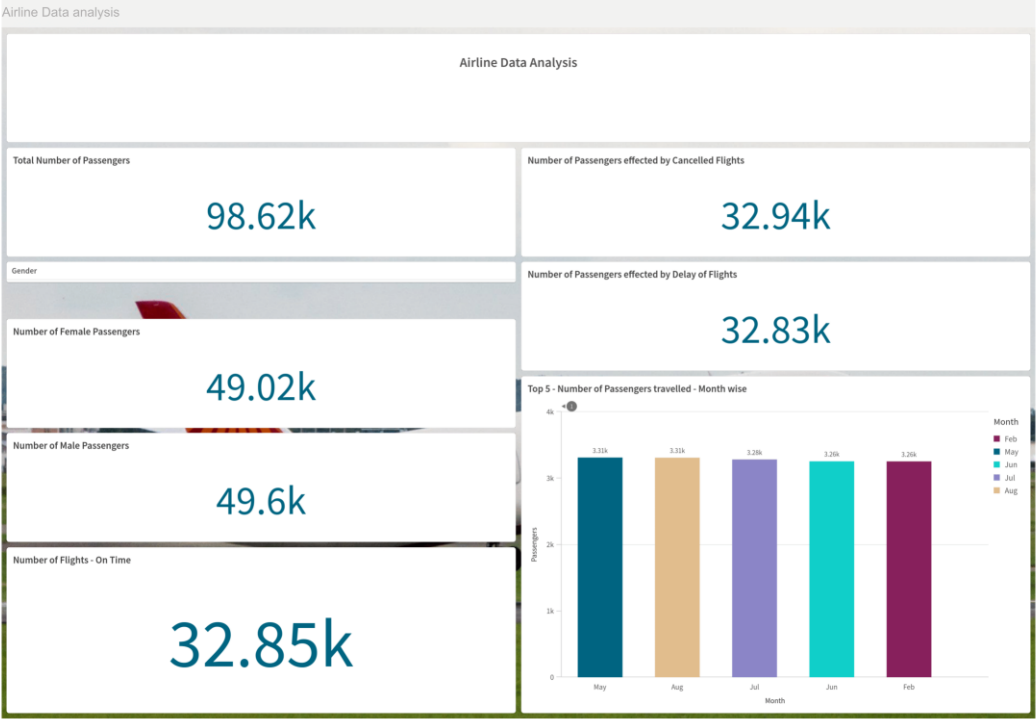
Measure: `Count (Flight Status)`

## **Dashboard and Storytelling**

### **Dashboard Creation**

#### **Design Dashboards:**

1. Design and create two dashboards, strategically aligning the visualizations and key performance indicators to provide a comprehensive overview of the airline's performance.
2. Ensure the dashboards are interactive and user-friendly, enabling stakeholders to easily derive insights.



## Storytelling

### Create a Story:

1. Use the storytelling feature in Qlik Cloud to create a compelling presentation (PPT).
2. Include visualizations and narrative explanations to communicate the insights derived from the data effectively. The storytelling approach helps in engaging the audience and making the data more accessible and understandable.

#### Exploring Insights From Synthetic Airline Data Analysis With Qlik

Total Number of Passengers

98.62k

Number of Passengers effected by Cancelled Flights

32.94k

Number of Passengers effected by Delay of Flights

32.83k

Number of Flights - On Time

32.85k

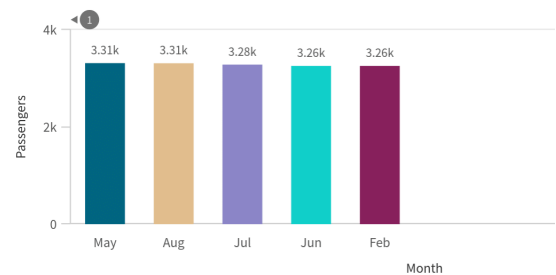
The Number of Male & Female Passengers Traveled :

Male - [Click here](#)

Female - [Click here](#)

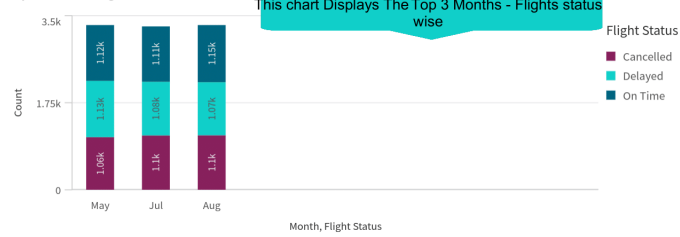
This Chart Displays the Top - 5 - Month wise - Number of Passengers travelled

Top 5 - Number of Passengers travelled - Month wise



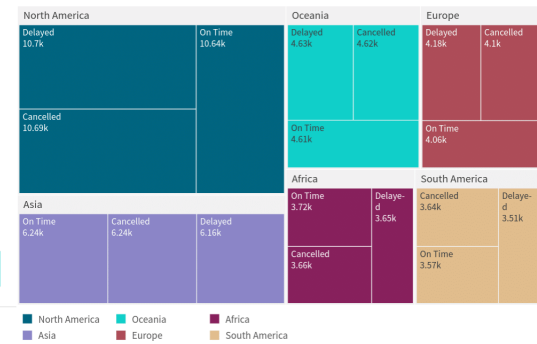
## Exploring Insights From Synthetic Airline Data Analysis With Qlik

Top 3 Months - Flights status wise

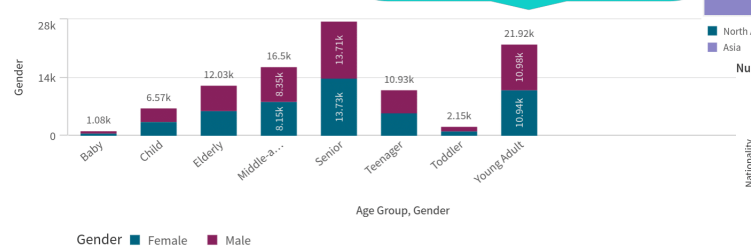


This chart Displays The Top 3 Months - Flights status wise

Continents wise - Flight Status

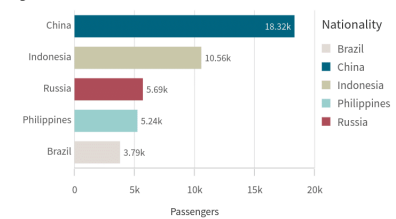


Age group - Gender wise



This chart Displays Age group - Gender wise

Number of Passengers - Nation wise



## Project Analysis and Scope

### Analysis:

The analysis of the project data involves several steps to ensure data quality and derive meaningful insights. Initially, the raw data is pre-processed to handle duplicates and null values. However, since the provided dataset is already clean, we can proceed directly to structuring the data for analysis. This involves organizing and transforming the data to create key performance indicators (KPIs) such as the total number of passengers, on-time flights, delayed flights, and cancelled flights. We start by structuring passenger data to calculate the total number of passengers and categorizing flight statuses to distinguish between on-time, delayed, and cancelled flights. We then develop KPIs to measure these metrics, using visualizations like bar charts and line graphs to represent them. For continent-wise analysis, we create tree maps and geographic maps to examine the distribution of flight statuses across different continents, helping identify regional performance patterns and potential issues. Further analysis focuses on operational performance, examining factors contributing to on-time performance, identifying common causes of flight delays, and assessing their impact on overall performance. These visualizations and analyses facilitate an in-depth understanding of operational efficiency and customer satisfaction, providing actionable insights for strategic decision-making.

## Scope:

The scope of this project encompasses the following areas:

1. **Data Quality Improvement:** The raw data is pre-processed to handle duplicates and null values, ensuring the accuracy and completeness of the dataset.
2. **Performance Measurement:** Key performance indicators (KPIs) such as the total number of passengers, on-time flights, delayed flights, and cancelled flights are developed to monitor flight performance.
3. **Geographical Analysis:** Visualizations, such as tree maps, are used to analyze flight status distribution across different continents, providing insights into regional performance variations.
4. **Business Insights:** Deriving actionable insights to improve operational efficiency, customer satisfaction, and strategic decision-making.
5. **Dashboard Creation:** Creating interactive dashboards that provide a comprehensive view of the airline's performance.
6. **Storytelling and Presentation:** Using Qlik Cloud's storytelling feature to create presentations that effectively communicate the insights derived from the data.

## Conclusion

This report outlines the comprehensive process of setting up Qlik Cloud, preparing data, creating visualizations, and compiling them into a cohesive story. The provided script and steps ensure a systematic approach to analyzing and presenting data effectively using Qlik Cloud. The project analysis emphasizes the importance of data quality, performance measurement, and geographical analysis in deriving business insights and making informed decisions. The scope of the project demonstrates the potential of Qlik Cloud in transforming raw data into valuable insights that can drive operational improvements and strategic planning.

**GitHub link:** <https://github.com/Bandi-Sharath-Reddy-SRB/Exploring-Insights-From-Synthetic-Airline-Data-Analysis-With-Qlik>