# Tableau Project Report

## Dashboard 1:

## link:

## Summary:

This dashboard shows us a good interactive visualization of airline delay performance.

In this dashboard:

1. **Airlines with Worst Delays**: This bar chart compares airlines based on their average arrival delay. This bar chart orders the airlines from the worst performance (NK airline) to the best (AS airline). This bar chart provides a valuable insight for passengers who want to choose the best airline to arrive in time and also provides a good insight for the stakeholders who want to choose which promising airline to invest in.

2. **Airports with the Worst Delays**: This bar chart compares airports based on their average arrival delay. This bar chart orders the airports from the worst performance (MQT airport) to the best (UST airport). This bar chart identifies airports where delays are most problematic providing a valuable insight for passengers who want to choose the best airline to arrive in time and also provides a good insight for the stakeholders who want to choose which promising airline to invest in.

3. **Delay Reasons**: This grouped bar chart analyzes delay reasons across various airlines showing us how each delay category affects overall performance. This grouped bar chart offering valuable insights for the airports management to address specific problem areas and improve operational efficiency.

4. **Time Trends**: this line chart shows the difference in average arrival delay over a year. Each point represents the average delay for one month. This line chart shows the importance of considering seasonal factors when planning flights.

## Design:

This dashboard shows us a good interactive visualization of airline delay performance.

In this dashboard:

1. **Airlines with Worst Delays**: This bar chart was designed with clarity and ease of comparison and color-blind people in mind. A gradient of red shades is used, with darker shades highlighting worse-performing airlines and lighter shades indicating relatively better performers and this color scheme helps viewers quickly identify which air lines is the worst and which is best. The Y axis uses the airlines code to clutter while providing sufficient detail.

2. **Airports with the Worst Delays**: his bar chart was designed with clarity and ease of comparison and color-blind people in mind. A gradient of red shades is used, with darker shades highlighting worse-performing airports and lighter shades indicating relatively better performers and this color scheme helps viewers quickly identify which airports are the worst and which is best. The Y axis uses the airports code to clutter while providing sufficient detail.

3. **Delay Reasons**: This grouped bar chart was designed to show delay reasons by the airline and visually compare their effect to overall delay. Each delay reason is showed in separate groups, making it easy to analyze each category and her effect. Grouping helps stakeholders and passengers pinpoint problem areas.

4. **Time Trends**: This line chart was designed to highlight monthly trends in average arrival delays over a year. A line chart is the best choice for the time analysis.

# Dashboard 2:

## link:

## Summary:

This dashboard shows us a visualization exploring the causes and trends of flight delays across airlines.

In this dashboard:

1. **Trends Over Months**: This line chart shows us the monthly difference in flight delays to four main causes (Air System Delay, Late Aircraft Delay, Security Delay, Weather Delay). Each cause represented as a separate line showing the number of flights that were delayed for that cause.

2. **Trends over weeks**: This line chart shows us the weekly difference in flight delays to four main causes (Air System Delay, Late Aircraft Delay, Security Delay, Weather Delay). Each cause represented as a separate line showing the number of flights that were delayed for that cause.

3. **Origin Airport**: This bubble chart shows the distribution of flight delays across various originating airports. Each bubble represents an airport with the size of the bubble representing the number of delays originating from that airport. This bubble chart identify the airports with the most delay issues, emphasizing the need for focused strategies at major hubs to mitigate delays.

## Design:

This dashboard shows us a visualization exploring the causes and trends of flight delays across airlines.

In this dashboard:

1. **Trends Over Months**: This line chart uses a well-contrasted color palette and considers applying a colorblind-friendly scheme to ensure all users can easily differentiate the lines. This line chart uses an integrated hover-over tooltips to display the exact number of delays for each category per month.

2. **Trends over weeks**: This line chart uses a well-contrasted color palette and considers applying a colorblind-friendly scheme to ensure all users can easily differentiate the lines. This line chart

uses an integrated hover-over tooltips to display the exact number of delays for each category per week.

3. **Origin Airport**: This bubble chart shows flight delay volumes across various airports. This bubble chart ensures bubble sizes are scaled consistently and proportionally to the data to avoid visual distortion. Smaller differences in delay volumes should still be discernible in bubble size. This bubble chart has annotations explaining factors contributing to higher delays at airports.

# Dashboard 3:

## Link:

[Mapping Flight Delays_ Identifying the Most Impacted Routes | Tableau Public](#)

## Summary:

This dashboard shows us an interactive visualization that explores flight delay patterns across different routes in the U.S.A It aims to identify which flight routes has the most delays. In this dashboard:

1. **Worst Routes by Average Delay**: This horizontal bar chart shows the average delay (in minutes) for each flight route. Each bar represents one route, with the length of the bar is the average delay time. The horizontal bar chart orders routes from the highest (ATL → COS) to the lowest (ALB → MDW) average delay.

2. **Percentage of Delayed Flights**: This horizontal bar chart shows the percentage of flights delayed for each flight route. Each bar represents one route, with the length of the bar is proportion of flights delayed on that route. The horizontal bar chart orders routes from the highest (YAK → JNU) to the lowest (ABE → ATL) average delay.

3. **Trend Over Time**: This line chart shows the monthly difference in the average delay per route over a year. The line trend shows the changes in delay patterns over the year. This chart provides valuable insights into delay trends over time helping airlines and stakeholders plan for peak periods and implement measures to mitigate delays during months.

## Design:

This dashboard shows us an interactive visualization that explores flight delay patterns across different routes in the U.S.A It aims to identify which flight routes has the most delays. In this dashboard:

1. **Worst Routes by Average Delay**: The design choices were considered based on clarity, usability, and insight delivery. There is a gradient color scale where darker red shades represent higher delays. Routes are orders by average delay in descending order making it easy to identify the worst-performing routes. Bar lengths are average delay times, which is effective for comparative analysis.

2. **Percentage of Delayed Flights**: The design choices were considered based on clarity, usability, and insight delivery. There is a gradient color scale where darker red shades represent higher

percentage delays. Routes are orders by percentage delay in descending order making it easy to identify the worst-performing routes. Bar lengths are percentage delay times, which is effective for comparative analysis.

3. **Trend Over Time**: The design choices were considered based on clarity, usability, and insight delivery. This line chart adds horizontal gridlines for better reference to y-axis values. This line chart has tooltips on hover to display exact values for average delay and the month.