

Visualizing Airline Delays with Tableau

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Udacity's Data Analyst Nano Degree Term 2 Project 4

Links to the visualizations on Tableau Public:

Version 1: [Travel Smart v1](#)

Version 2: [Travel Smart v2](#)

Summary

This visualization serves as a guide to help travelers determine which airports, airlines, months, and days of the week to avoid if they want to arrive at their destination on time. It is an interactive experience that allows the user to pick their origin and destination, and in return they get insight on what to avoid. For example, if you were flying out of Denver in 2001 then July has the longest average arrival delay. The visualization is powered by RITA flight delay data from 2001.

Design

Readers normally look at the top left area of a page first and then scan to the bottom right. With this in mind I designed the workbook so that “big-picture” data is on the left and granular data is on the right. This allows the reader to instantly get a general sense of what’s happening and then urges them to dig deeper into the details. Also, to help guide the reader through the workbook I added prompts like “start here”. These prompts are colored blue to quickly catch the reader’s eye. Also in blue are the origin and destination airports that have been selected because it is important that the reader know what the data is currently filtered on. Throughout the workbook I chose to highlight things to avoid with the color orange, which really stands out since the rest of the workbook is light grey and white. In terms of chart types, the “Where to avoid?” section made sense to be a map since the insights are spatial. The rest of the charts compare numerical data across different categories, so I chose to use bar charts. You’ll notice that I removed all legends and instead placed text to describe the colors and symbols used throughout the charts. This, along with the removal of gridlines and axes help declutter the visualization and maintain a high data-to-ink ratio. Overall, I tried to keep the visualization clean, easy to follow, and most of all insightful.

Feedback

- Make the 'start here' more noticeable. I just happen to read left to right and noticed it said 'start here'. At first glance, i couldn't tell.
- Need labels on the left-most table. Had to hover over the numbers, in order to figure out what they meant.
- For the destinations to avoid map -- is it all year, or a specific time period.
- Confused about what 'longest arrival delay time' means.
- Improve flow of where the user should look. What should the user do after the “start here” section?
- make the titles stand out more by unbolding the other text
- Add a summary section that shows the user the important takeaways without having to look all over the page.

Design v2

After receiving feedback, it was obvious that I needed to improve the flow of the workbook. I added more obvious prompts to help guide the user through the workbook. Also, I added a section called “Bottomline” that summarizes all the key insights into one area at the top of the page. I decided to add it to the top of the page because this is the first thing the user will see after selected an origin airport. Once the user reads this key insight, they are free to look into the details below if they have further questions.

Resources

<https://github.com/jasonong/List-of-US-States/blob/master/states.csv>

<https://community.tableau.com/ideas/1891>

<http://stat-computing.org/dataexpo/2009/supplemental-data.html>