Project Progress Report 2

(due May 24th 11:59p.m)

You can start working on the project once your report is accepted and graded by your TA. The entire final project is worth **35%** of your final grade and this report accounts for **10%**. This project is done individually.

Submission Guideline

Download this google doc, fill the table. **Type** your answers, no handwritten answers will be accepted (except for the very last question). Submit it in **PDF** format on Gradescope.

If you need some inspirations please feel free to take a look at:
Showcase of Information is Beautiful Awards
Bloomberg Year In Graphics Review
The Pudding
The New York Times

Project Guidelines

Note: The guideline has been further clarified from Progress Report 1, so double-check whether your dataset choice still satisfies the updated guideline below.

1. You may use more than one dataset, however, regardless if you use one or multiple datasets, your visualizations must make use of at least three following data types - **link, position, and attribute.**
2. You cannot use any dataset from the class (Labs, Assignments, Lecture Exercises)
3. You can make your own dataset (Web scrape etc.) provided point 1. is satisfied.

Part 1 - Story and Narrative

Link to the dataset	https://figshare.com/articles/dataset/flights_csv/9820139/1
Example item from the dataset	On Thursday June 18th, 2015, a flight departed 4 minutes prior to its scheduled time, 10:00 a.m., from San Diego (SAN), CA, and arrived with a 22-minute delay at Honolulu (HNL), HI.

Story you want to deliver	The United States is the country that operates the most flights, but the delays are also massive! In 2015, among the approximately 5.8 million domestic flights in the US, 36 percent of them were delayed. In fact, the delays has correlation with month, origin and destination airport/state, and the airline. The fact/insight is that in June and December, the average delay time is longer, possibly due to the increasing number of tourists during the holidays. Also, the delay time of different airlines varies, from 0.96 minutes advance (Alaska Airlines) to 14.32 minutes delay (Spirit Air Lines). Moreover, some routes also have longer delay, such as from Chicago (ORD) to Denver (DEN), which delayed 17.89 minutes on average.
Describe your target audience	The airline passengers travelled in the US who would like to know how likely their flights will delay.
The goal of your project outcome. And why?	Explanatory, because my visualization is human-centered, communicative, and serves to general audience who is not necessarily familiar with flight data.
Narrative structure you plan to use	Both linear and interactive.
Elaborate your choice of narrative structure.	The line plot and bar chart are linear because it is heavy messaging and has no interactivity, while the US map containing the busiest flights is interactive.
Narrative genre you plan to use	Annotated chart.
Elaborate your choice of narrative genre.	Because this is clear and friendly to those who has no prior knowledge of the area, and it is the best way to present most of the important information in our database.

Part 2 - Outline

Story you want to deliver	The United States is the country that operates the most flights, but the delays are also massive! In 2015, among the approximately 5.8 million domestic flights in the US, 36 percent of them were delayed. In fact, the delays has correlation with month, origin and destination airport/state, and the airline. The fact/insight is that in June and December, the average delay time is longer, possibly due to the increasing number of tourists during the holidays. Also, the delay time of different airlines varies, from 0.96 minutes advance (Alaska Airlines) to 14.32 minutes delay (Spirit Air Lines). Moreover, some routes also have longer delay, such as from Chicago (ORD) to Denver (DEN), which delayed 17.89 minutes on average.
Specifications on each plot **in the order of how you lay out on your project**	1. Line chart 1) Task: This chart analyzes trend between month and average delay of flights 2) Attributes: month, average departure delay, average arrival delay 3) Marks: points and lines 4) Channels: - aligned vertical position channel for average delay time - aligned horizontal position channel for month - colors for different types of delay time 5) How this plot adds to the story: My visualizations aim to deliver the time factor that may affect the likelihood of delay. This plot will provide more specific insights on the relationship between the flight delay and the time of the year.

	2. Bar chart 1) Task: This chart This chart analyzes the average delay times of different airline carriers in the US. 2) Attributes: airline, average delay time 3) Marks: lines 4) Channels: - aligned vertical position channel for average delay time - aligned horizontal position channel for month 5) How this plot adds to the story: My visualizations aim to deliver the average delay time across different airline carriers. This plot will provide more specific insights on the relationship between the flight delay and the airline.
	3. Map 1) Task: This chart presents a) the routes connecting the six busiest airports in the US in 2015 on a map, using lines to show the the connection flight between airports, b) the average delay for each of these routes, and c) the number of flights and average delay of each state. 2) Attributes: route, state, average delay time, total annual number of passengers 3) Marks: lines (links), points 4) Channels: - position for the geographical locations of the origin airport and the destination airport - ~~size (thickness) for the total number of passengers~~ - color for the average time of delay 5) How this plot adds to the story: My visualizations aim to deliver the useful information of the busiest routes. This plot will provide more specific insights on the average time of delay and the number of passengers.

Elaborate the choice of their marks and channels for each vis	For the map, lines and points with position channel because it is the most natural way to represent airports and routes on a map. In addition, the color (from red to green) is an intuitive choice to visualize the delay. For the line chart, the points with vertical and horizontal position channels because it clearly shows the correlation. Also, the line/ curve connecting each point emphasizes that time is a continuum, and depicts the two crests of the curve. For the bar chart, the lines of each bar with vertical and horizontal position channels simply show the difference delay times among the airlines.

Part 3 - Prototype

Provide a photo or screenshot of your prototype. A prototype should depict how you place different components of your visualization. You may use pen-paper, or using tools like excalidraw, figma etc.

A basic, barebones sample prototype for this project