Riley Dillon

CS-257-01

11/3/25

Design Process

Initial Research

We began by analyzing the dataset to understand patterns and potential outliers. Ticket prices ranged from $48 (St. Louis Rams) to $291 (Seattle Seahawks). This wide variation made the dataset ideal for analytical visualization.

Following insights from Szafir's "The Good, the Bad, and the Biased", we paid attention to color perception ensuring our gradients communicated data differences accurately. While also using contrast to emphasize patterns such as in our persuasive version. Chapter 11 of Designing the User Interface reinforced that effective visualization requires both clear communication and collaboration.

Ideation and Sketching (Five Design-Sheet Process)

We used the Five Design-Sheet process to explore multiple visualization types before implementation. Each sheet focused on different layouts, axes, and visual hierarchies. We generated ideas such as bar charts, scatter plots, and geographic maps.

We tested our sketches with friends by asking them what they thought the main message of each visualization was. Their feedback helped us improve label placement and reduce unnecessary visual clutter. This process kept our focus on user understanding.

Visualization Design: Clear Set

For our Clear Visualization Set, we created three charts in Tableau:

Bar Chart: All NFL teams sorted by average ticket price, showing direct team-by-team comparison.

Scatter Plot: Displaying ticket prices with a variety of colors and new visualization to better grasp the differences amongst teams and average ticket prices.

Heatmap: Color-coded by team averages for a high-level overview of league-wide cost differences.

We used a light to darker blue/green color gradient and clean typography to ensure readability. These choices aligned with Szafir's research on perceptual uniformity. Reducing bias and ensuring viewers could accurately interpret differences in price without distraction.

Visualization Design: Persuasive Storytelling Set

For our Persuasive Visualization we used Vega-Lite to create a U.S. map plotting each team's location. We used darker shades to represent higher average ticket prices. The visual emphasis is intriguing and persuasive data that leaves an imprint on the individual viewing it.

This design used principles from Designing the User Interface, Chapter 11, which emphasizes effective communication and emotional engagement. Rather than showing data neutrally, this visualization aimed to tell a story. One that users could quickly grasp and remember.

Implementation

We implemented the Clear set using Tableau because of its ability to create clear analytical visualizations with interactivity and filtering options. The Persuasive visualization was created in Vega-Lite, which offered greater control over stylistic presentation. Essential for communication through map-based storytelling.

Prototype Testing

I conducted informal prototype testing with friends by presenting both visualization sets side-by-side and asking, "Which one leaves a stronger impression?"

Feedback showed that the Clear set was preferred for analytical comparison, while the Persuasive map was described as "more memorable." Testers suggested slightly lighter gradients for lower values to improve readability, which we implemented in the final version. This testing validated how visual framing changes user interpretation. Which helps confirm the balance between clarity and persuasion that both Szafir and Designing the User Interface emphasize.

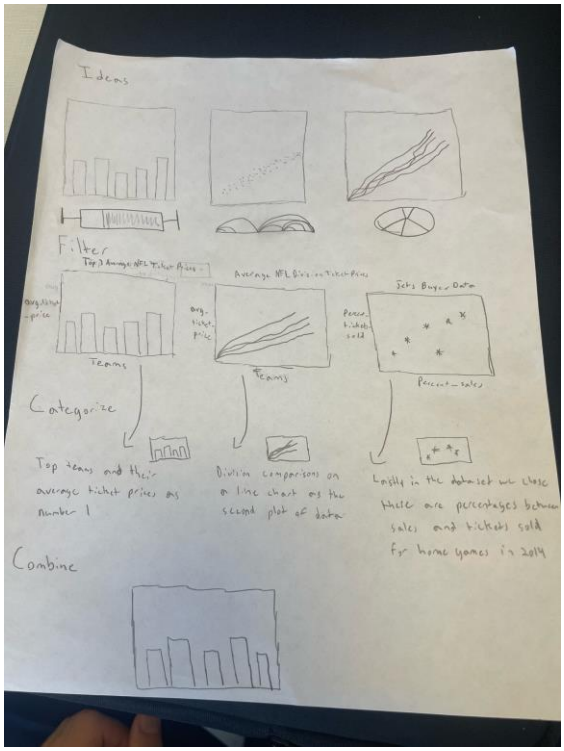
Reflection

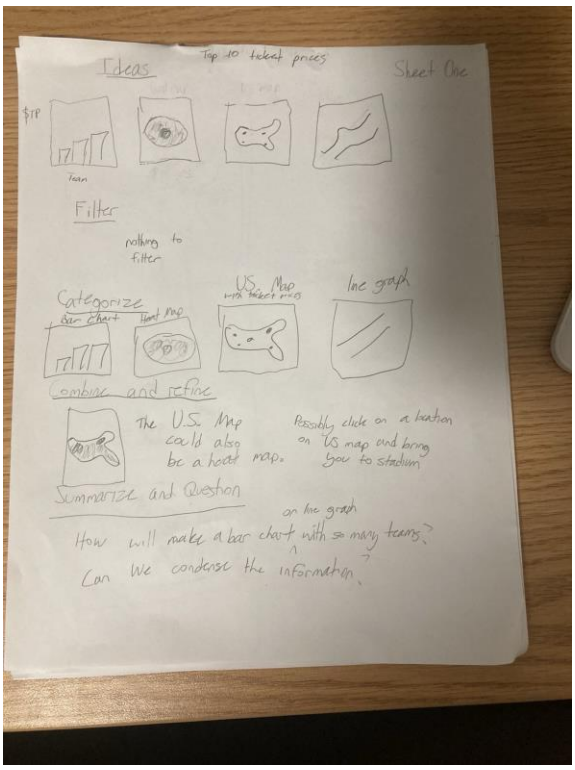
Working on this lab made the tradeoffs between clarity and persuasion especially clear. In the Clear set, we prioritized accurate communication of data, but at the cost of emotional engagement. The Persuasive map was more visually striking but risked exaggerating the data's meaning.

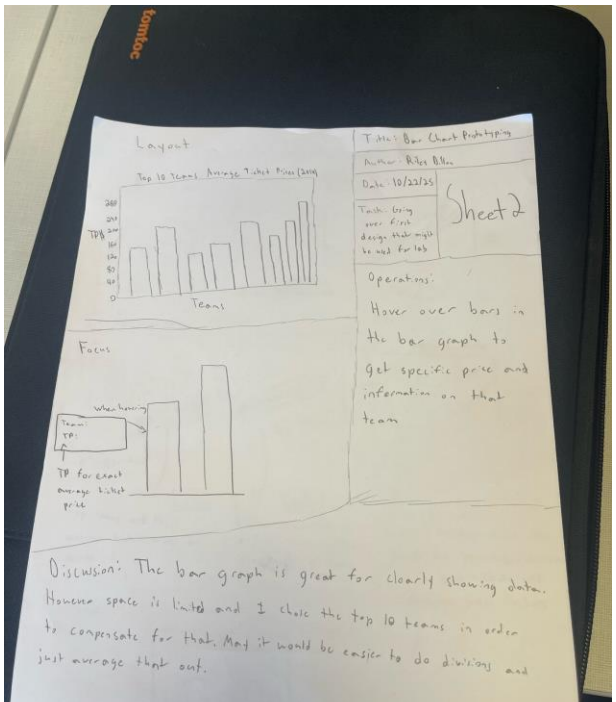
This tension between truthfulness and impact is central to visualization design. As Szafir's research shows, color and contrast can either clarify or distort perception. Chapter 11 of Designing the User Interface reminded us that communication involves choices. Every visualization makes tradeoffs between precision, accessibility, etc.

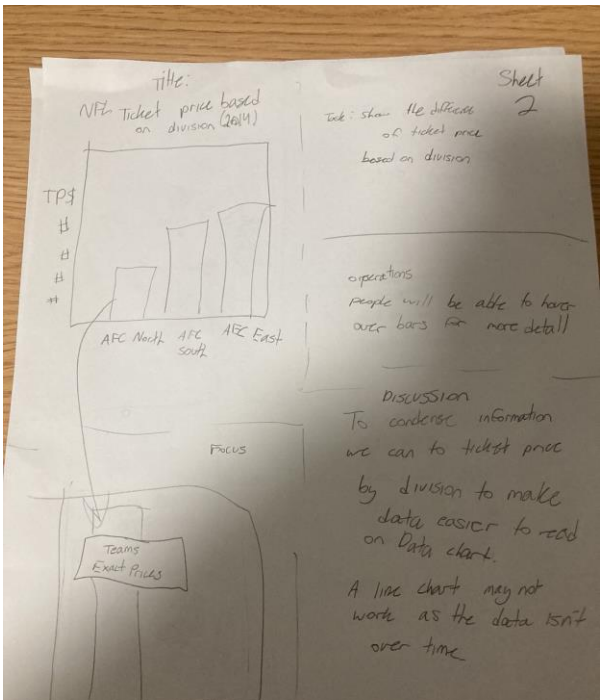
Recognizing and managing these tradeoffs allowed us to design visualizations that are both informative and engaging. Ultimately, serving different goals for different audiences.

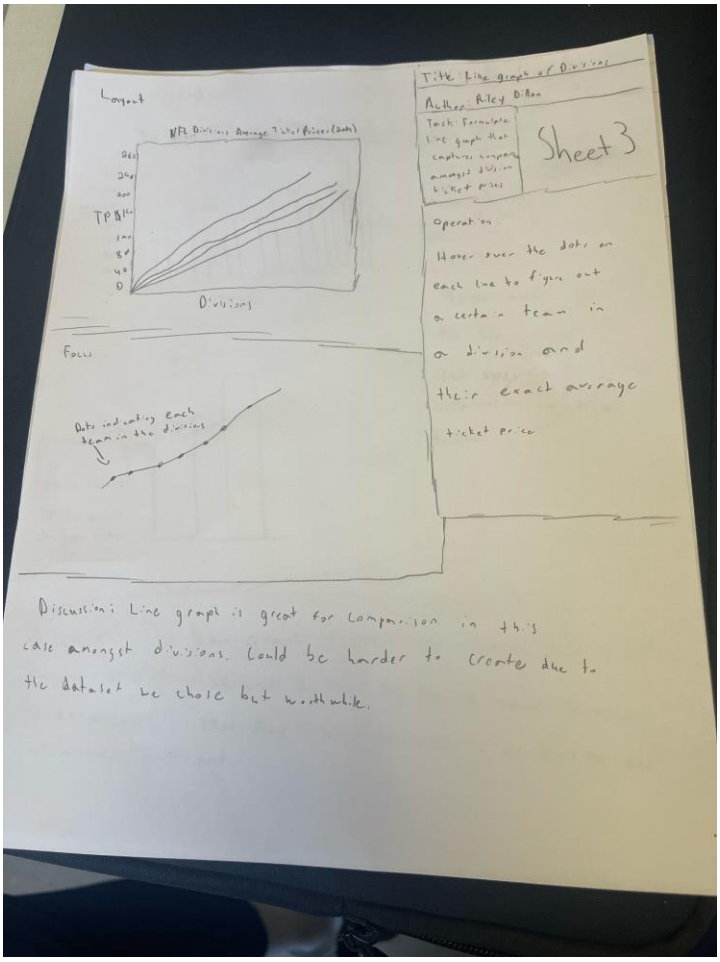
Five Design-Sheet Process Images

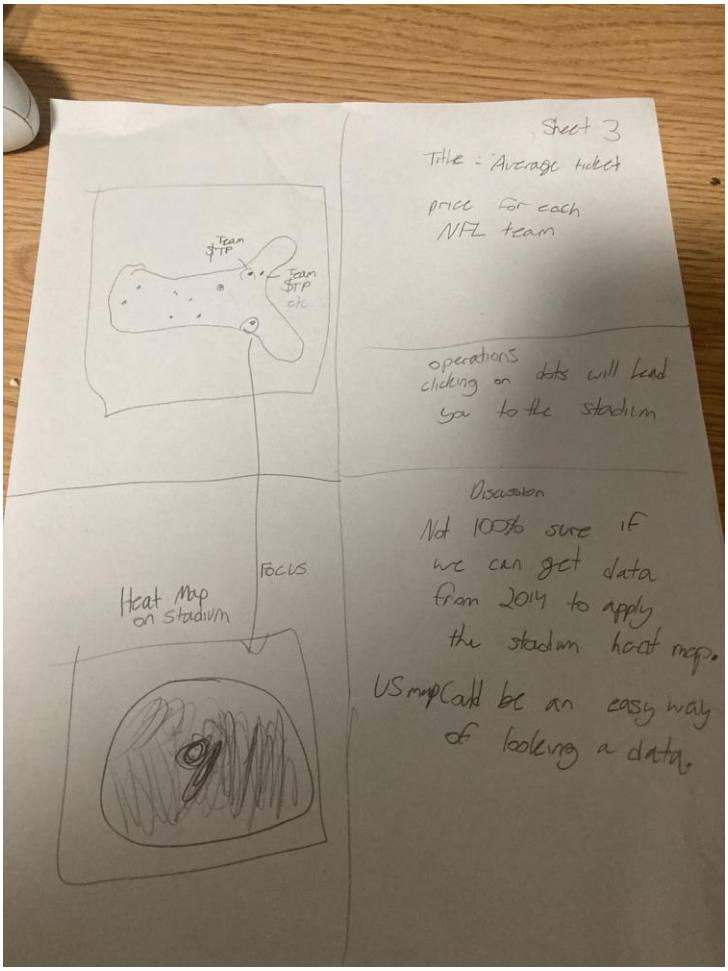


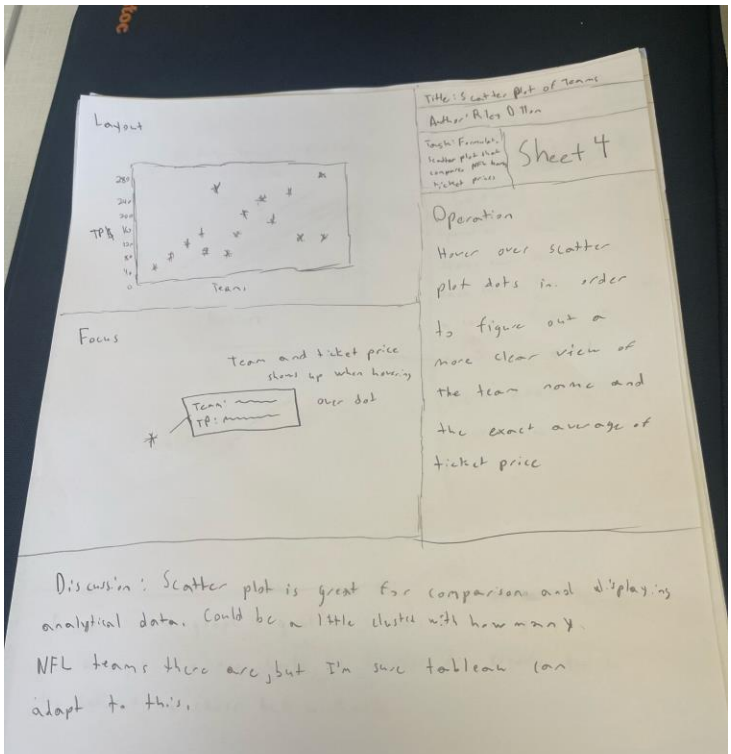


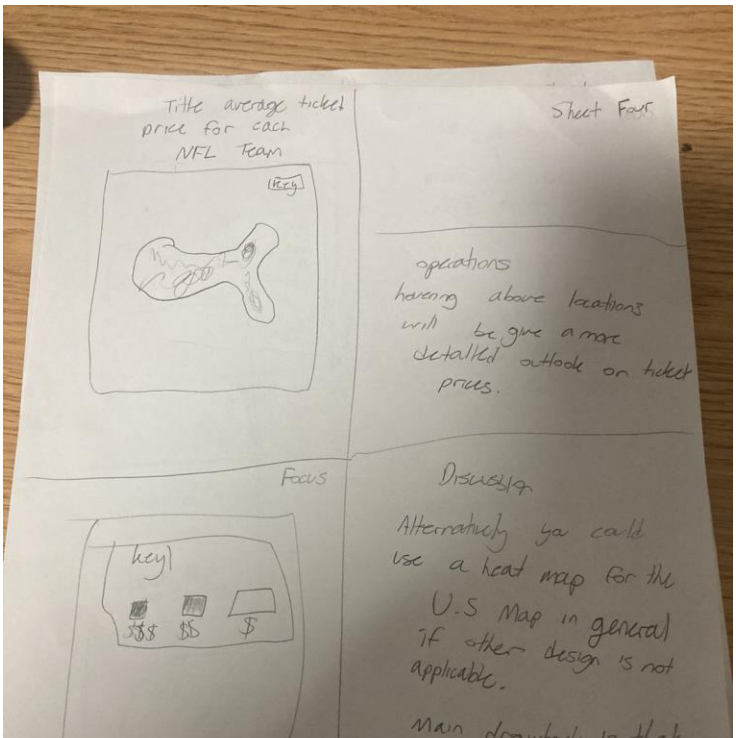




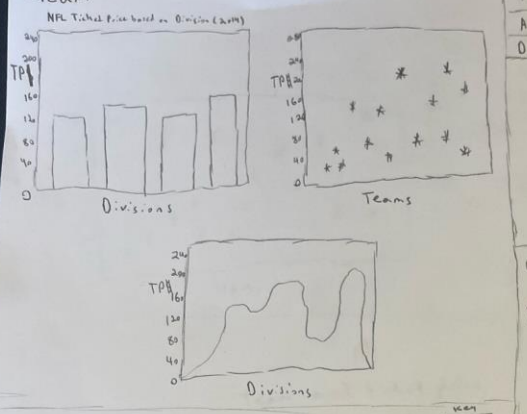

Layout
Title: Line graph of Divisions
Author: Riley Dillon
Task: Formulate line graph that captures comparis amongst division ticket prices
Sheet 3
Operation
Hover over the dots on each line to figure out a certain team in a division and their exact average ticket price
Focus
Dots indicating each team in the divisions
Discussion: Line graph is great for comparison in this case amongst divisions. Could be harder to create due to the dataset be choice but worthwhile.


Sheet 3
Title: Average ticket price for each NFL team
Team $TP
Team $TP etc
operations clicking on dots will lead you to the stadium
Discussion
Not 100% sure if we can get data from 2014 to apply the stadium heat map.
US map could be an easy way of looking a data.
Focus
Heat map on stadium


Layout
Title: Scatter Plot of Teams
Author: Riley Dillon
Task: Formulate scatter plot that compares ppl's ticket prices
Sheet 4
Operation
Hover over scatter plot dots in order to figure out a more clear view of the team name and the exact average of ticket price
Focus
Team and ticket price shows up when hovering over dot
Team:
TP:
Discussion: Scatter plot is great for comparison and displaying analytical data. Could be a little cluster with how many NFL teams there are, but I'm sure tableau can adapt to this.

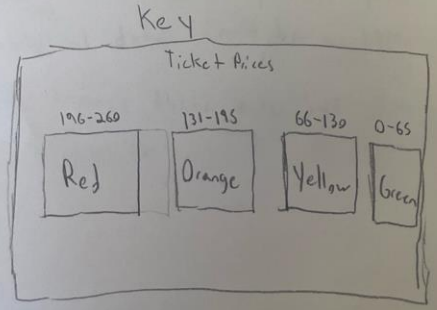

Title average ticket price for each NFL Team
Sheet Four
key
operations
hovering above locations will be give a more detailed outlook on ticket prices.
Focus
key
$$$
$$
$
Discussion
Alternatively ya could use a heat map for the U.S Map in general if other design is not applicable.

Clear:



Persuasive:

Persuasive's Key



Title: Finalizing Ideas

Authors: Riley and Hunter

Date: 10/28/25

Sheet 5

Operations:

Bar Chart: Hover over bar to get teams divisions

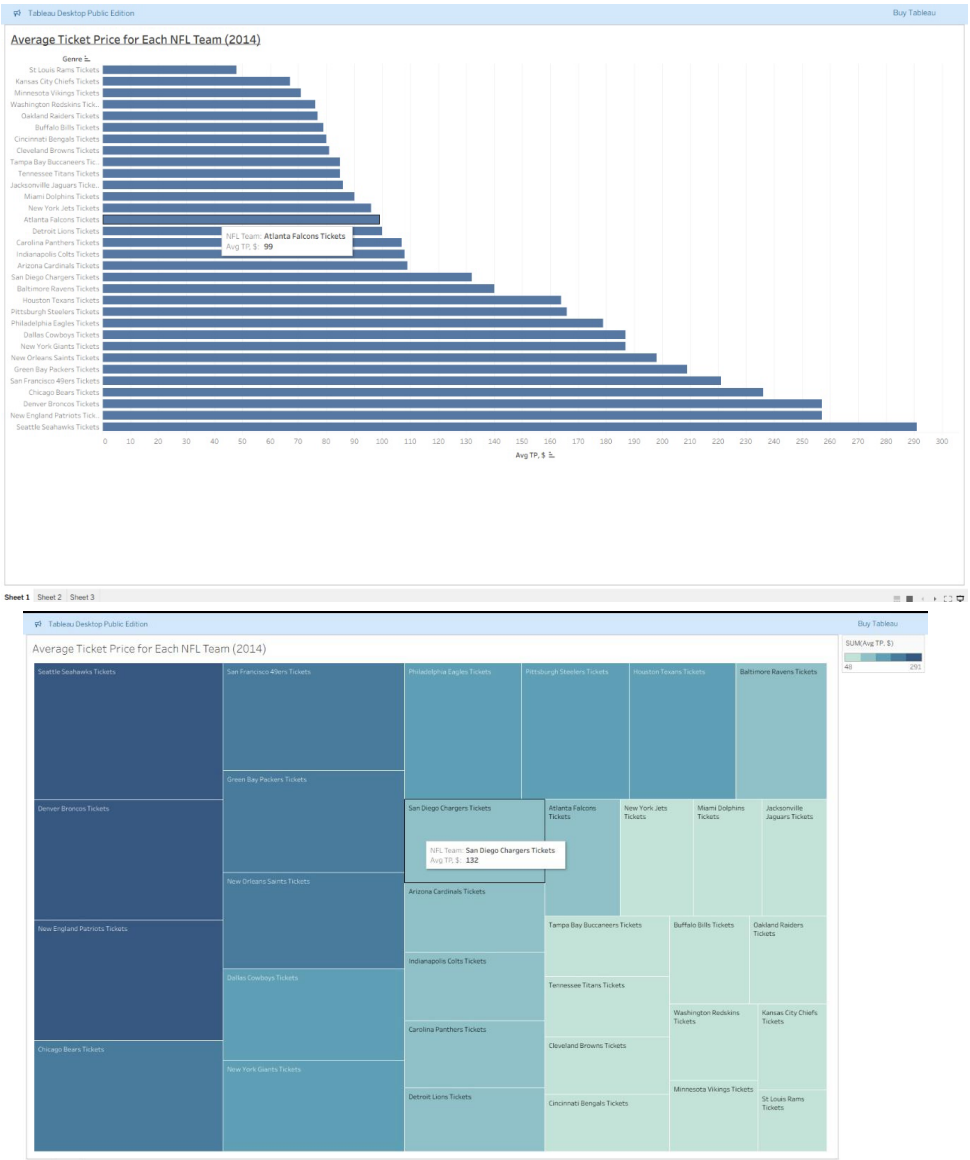
Heat Map: However over color to see the teams exact average ticket price

Scatter: Hover over plots and get similar data as others

Details:

- Using Tableau
- About a week to create all graphs with various functionality
- Laptops needed
- Connect dataset to tableau

Clear Set Images



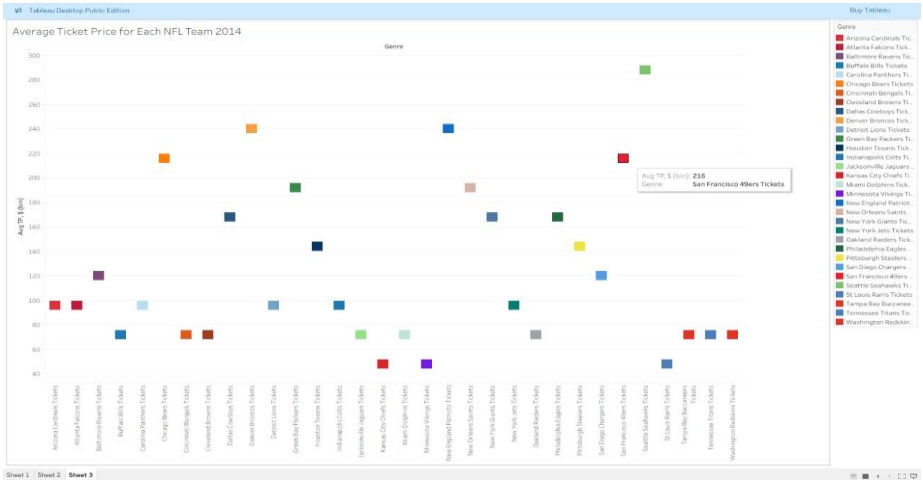
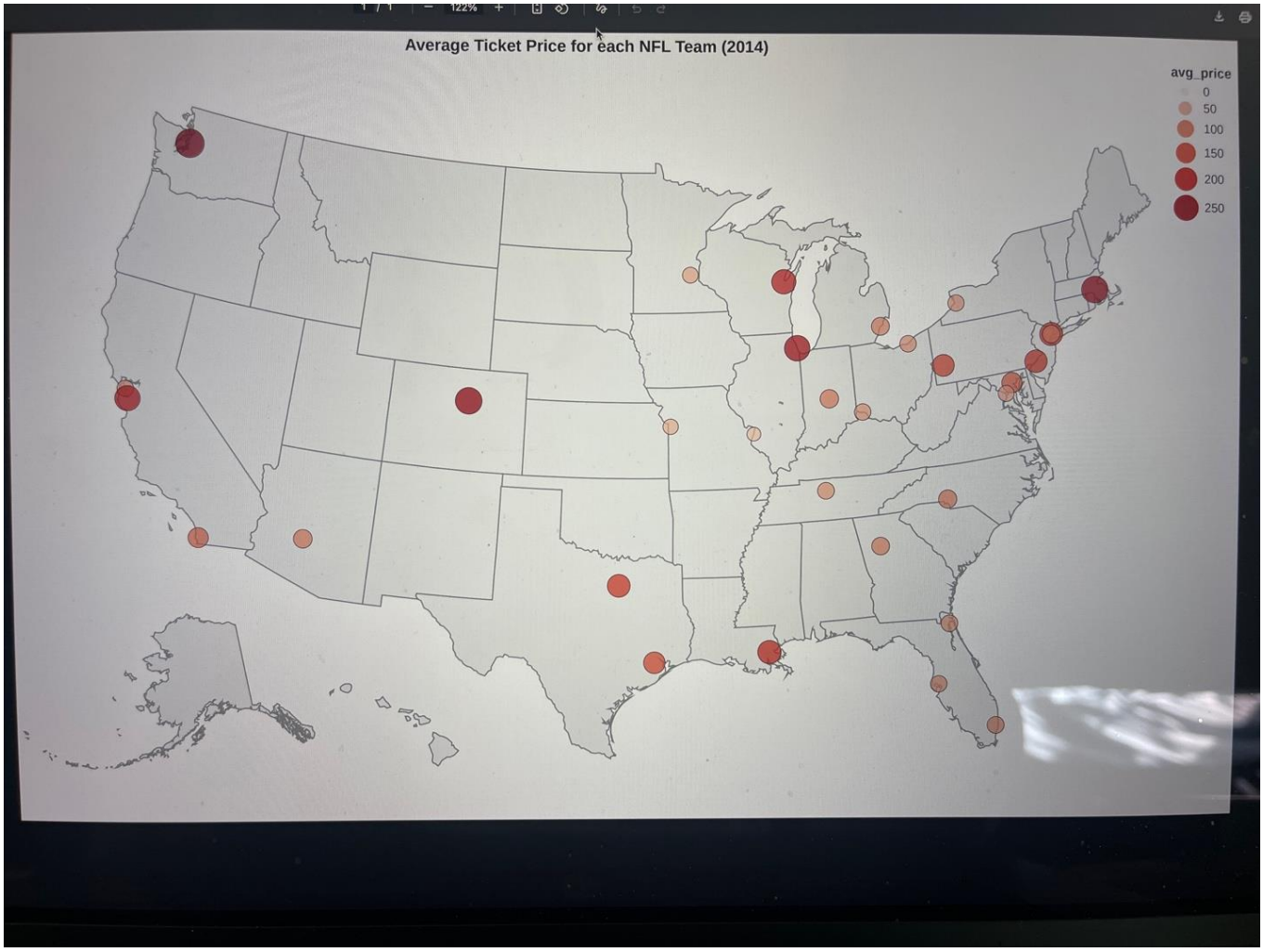


Tableau Desktop Public Edition
Buy Tableau
Average Ticket Price for Each NFL Team 2014
Genre
Avg TP: $ (bin): 216
Genre: San Francisco 49ers Tickets
Sheet 1
Sheet 2
Sheet 3


Average Ticket Price for each NFL Team (2014)
avg_price
0
50
100
150
200
250