

CGT270

Midterm Part II

Data Visualization Challenge

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Course:

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Halloween Visualization

This in-class assignment is to create data visualizations using data collected about trick-or-treaters in Cincinnati, OH. You should create two (2) visualizations, this can be a collection of charts or a dashboard, whatever is necessary to the story or analysis that is shown in your visualizations. Make sure you READ and FOLLOW ALL Instructions. The goal is to demonstrate your understanding of the data visualization process.

Data Description

The data is available in two formats

- Halloween data for Excel 2020 is a crosstab table which is ideal for creating visualizations in Excel. Numbers in the data file for Excel are **cumulative**.
- Halloween data for Tableau 2020” is unpivoted which is ideal for creating visualizations in Tableau. Numbers in the data file for Tableau are **not cumulative**.
- The data has been collected since 2008.
- The numbers in the table are cumulative totals of the number of trick-or-treaters who visited one house each year.
- The numbers are measured at 30-minute intervals, except for the last 15-minute interval.
- The trick-or-treat count was recorded in 30-minute intervals except for the last 15-minute interval.
- The night of trick-or-treating has always been on October 31st each year (some neighborhoods change the night of trick-or-treating).
- Official tick or treat hours are from 6 PM to 8 PM, but there are often “stragglers” past 8 PM that are not turned away. These stragglers are counted in the 8PM – 8:15 PM time slot. There has never been a trick-or-treater past 8:15 PM.
- The type of candy did not vary year-by-year. It is always a general mix of candy purchased in bulk variety bags.

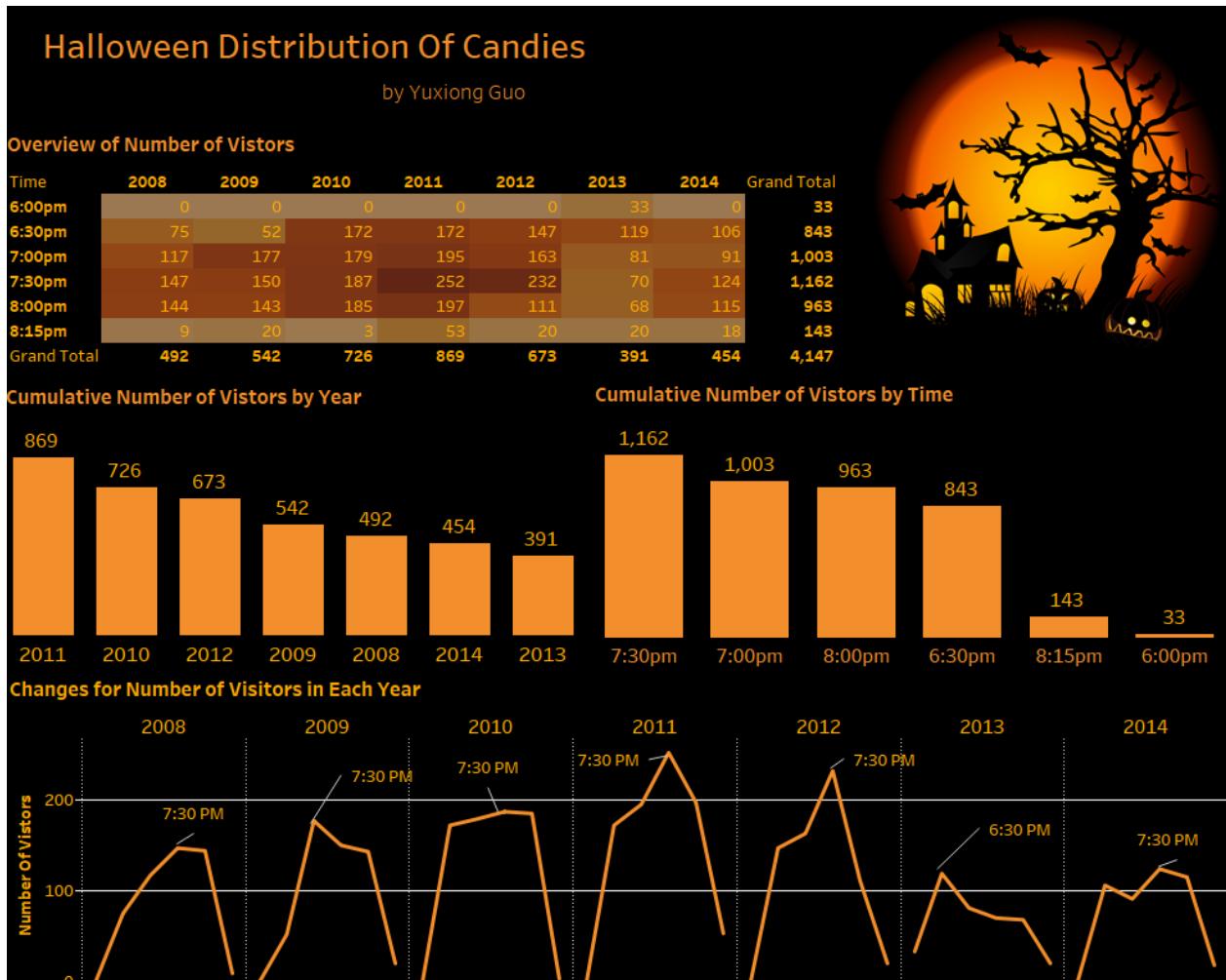
Location of home

Neighborhood: East Walnut Hills/Evanston
City, State: Cincinnati, Ohio
Zip code: 45207

Being a corner house on the neighborhood border likely increases the number of trick-or-treaters.

Example

Here's an example of how previous Halloween data have been visualized. Be creative!



The Assignment

There are multiple parts to this assignment. Make sure you read the entire assignment before starting.

Determine a story or goal to support the two (2) visualizations you will create using the Halloween data provided. Your two visualization MUST be different chart types. **This means DO NOT create two bar charts or two-line charts or two of the same chart types!** Challenge yourself. This is your time to show what you know.

Examples (these are examples):

- Homeowner dashboard summarizing Halloween
- Forecast future trick-or-treaters or estimate future candy needed
- Explore variation of the number of trick-or-treaters year by year
- [Be creative and think of other things you could do](#)

Data Visualization Process

Show your understanding of the data visualization process.

Acquire

The Data

Year	6pm	6:30pm	7pm	7:30pm	8pm	Total (8:15pm)
2020	11	55	107	155	211	219
2019	0	117	262	406	483	523
2018	18	191	342	497	589	600
2017	41	190	357	549	710	776
2016	22	160	386	612	759	822
2015	13	148	336	523	667	747
2014	0	106	197	321	436	454
2013	33	152	233	303	371	391
2012	0	147	310	542	653	673
2011	0	172	367	619	816	869
2010	0	172	351	538	723	726
2009	0	52	229	379	522	542
2008	0	75	192	339	483	492

Excel and Tableau versions of the data are provided in Brightspace. **Choose one (1) to work with.**

- [HalloweenExcel](#)
- [HalloweenTableau](#)

Parse & Mine

Use this page to provide a parsing of the data. For quantitative fields list some basic statistical procedures that can be performed in the space below. To be clear, you are to list the procedure (you are not required to actually do any calculations here).

Use the Tab key to add more rows to the table below.

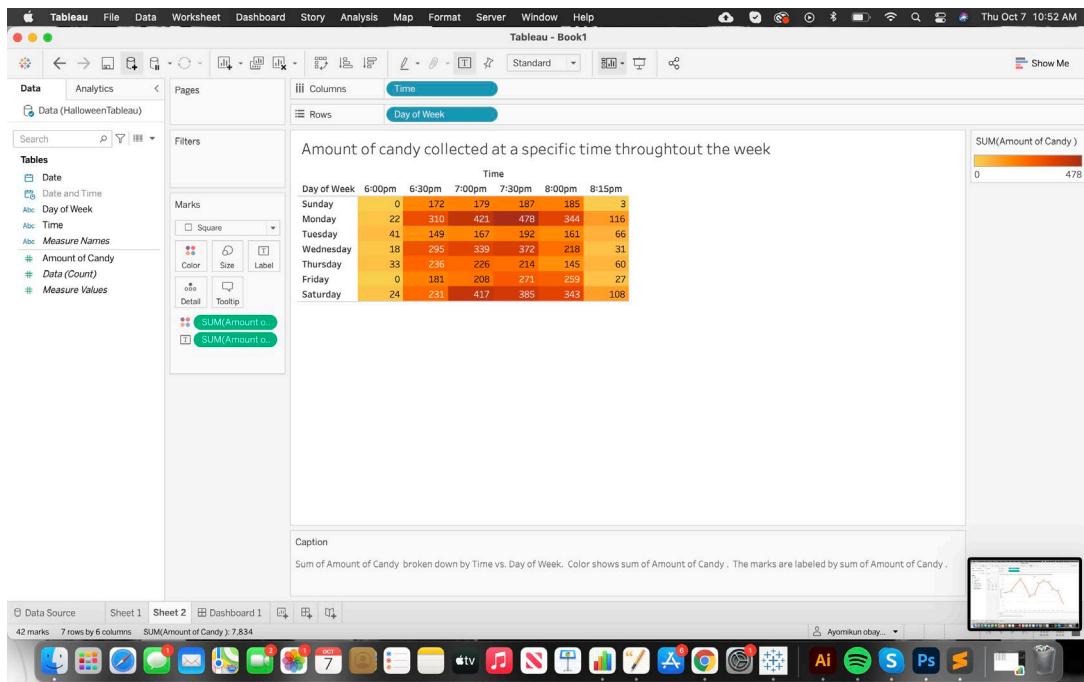
Variable	Data type	Statistical Method (where applicable)
Date	Integer	
Amount of Candy	Integer	Average(Mean), Mode, Median, Minimum, Maximum, Range, Range and Distribution
Day of week	String	
Date and Time	String	
Time	String	

Represent

Remove this text before submission: You can use any visualization tool you are most comfortable with. Replace the image below with your first visualization.

Figure 1.

The lightest shade of gold represent a normal rate of collecting candle throughout the week at a particular time while the tone that is closer to orange represents a lot of candy was collected and the child probably needs to go to the dentist as soon as possible if eaten within the time of 7:00pm and 7:30pm. Halloween is probably the worst holiday as kids want candy as their breakfast, lunch and dinner.



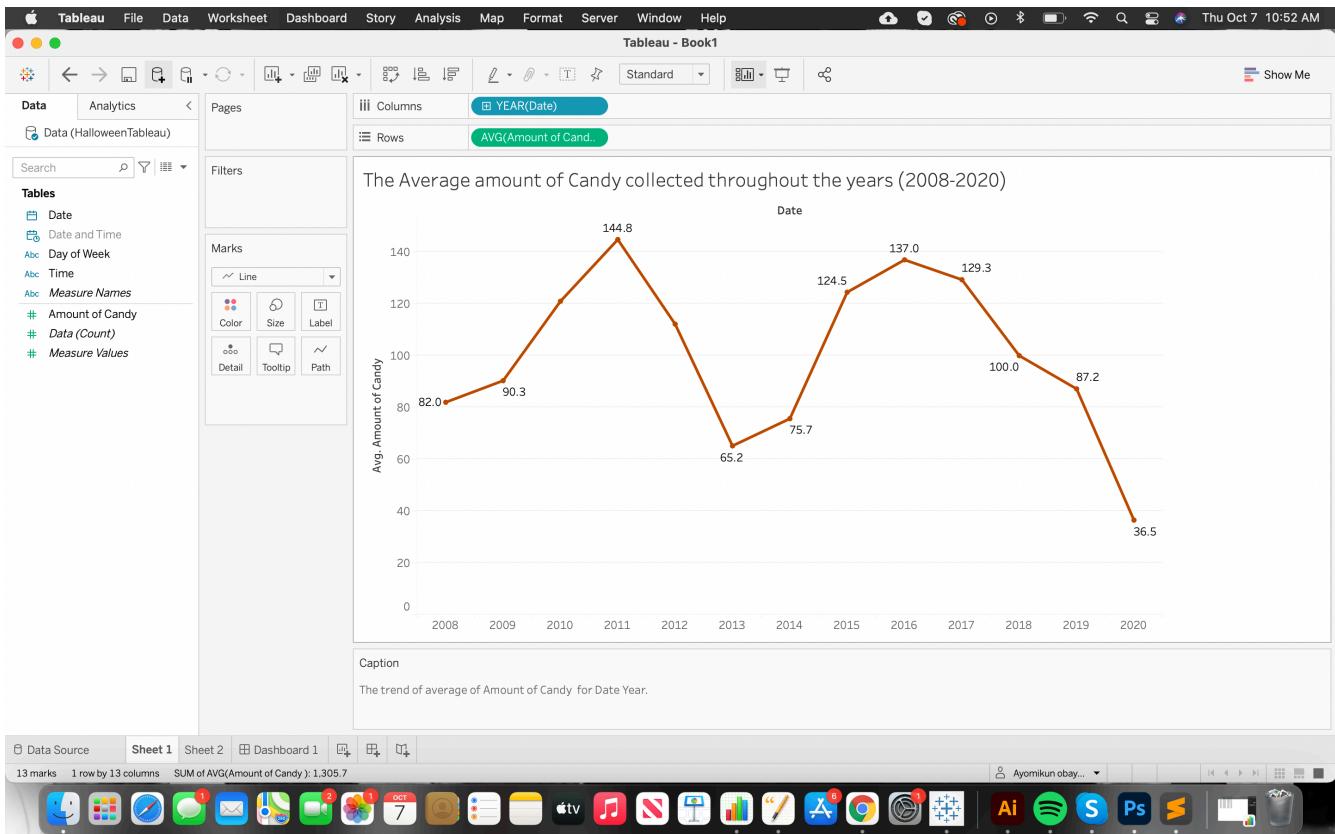


Figure 2.

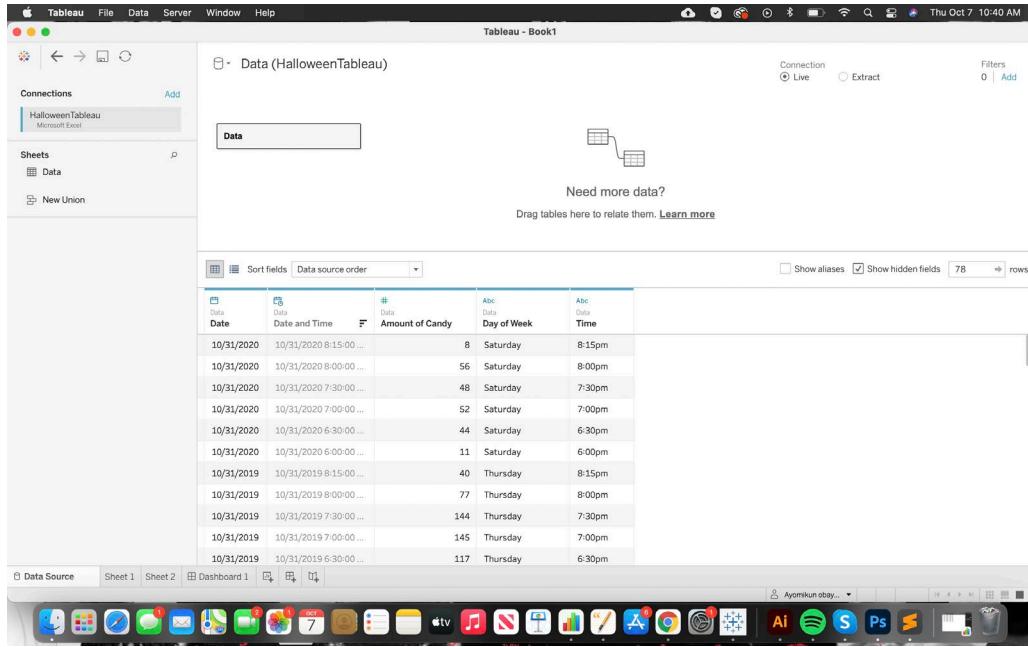
The line graph symbolizes which year had the highest amount of candy collected and also the downfall. To make it easier to read and compile it, I found the average of the amount of candy collected.

Helpful Tip: Utilize the space that you have. Do NOT create a tiny visualization that is unreadable. Remember, the purpose of visualization is insight, but all insight is lost if it cannot be seen.

Filter

In this page show the data you used to create your visualizations.

Figure 1

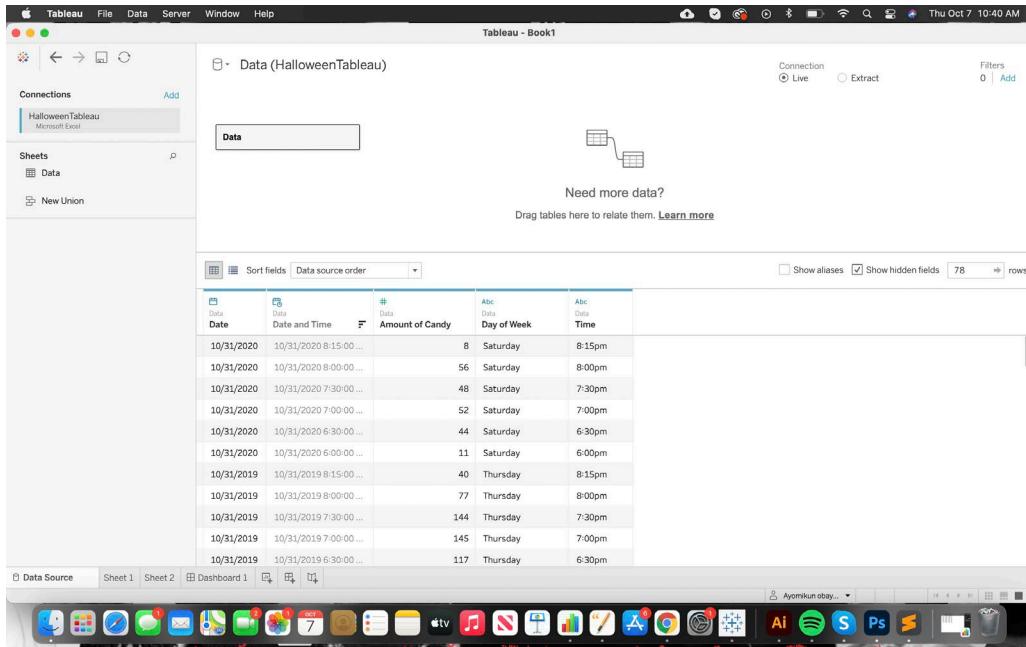


The screenshot shows the Tableau Data Source interface. On the left, the 'Connections' pane shows a single connection named 'HalloweenTableau' (Microsoft Excel). The 'Sheets' pane shows a single sheet named 'Data'. The main area displays a table with the following columns: Date, Data Date and Time, # Data, Amount of Candy, Abc Data, Day of Week, and Abc Data Time. The data consists of 14 rows, each representing a different event on October 31, 2020, or 2019, with details like time, amount of candy, day of the week, and a unique identifier. At the bottom, there are tabs for 'Data Source', 'Sheet 1', 'Sheet 2', and 'Dashboard 1'.

Date	Data Date and Time	# Data	Amount of Candy	Abc Data	Day of Week	Abc Data Time
10/31/2020	10/31/2020 8:15:00...	8	Saturday	8:15pm		
10/31/2020	10/31/2020 8:00:00...	56	Saturday	8:00pm		
10/31/2020	10/31/2020 7:30:00...	48	Saturday	7:30pm		
10/31/2020	10/31/2020 7:00:00...	52	Saturday	7:00pm		
10/31/2020	10/31/2020 6:30:00...	44	Saturday	6:30pm		
10/31/2020	10/31/2020 6:00:00...	11	Saturday	6:00pm		
10/31/2019	10/31/2019 8:15:00...	40	Thursday	8:15pm		
10/31/2019	10/31/2019 8:00:00...	77	Thursday	8:00pm		
10/31/2019	10/31/2019 7:30:00...	144	Thursday	7:30pm		
10/31/2019	10/31/2019 7:00:00...	145	Thursday	7:00pm		
10/31/2019	10/31/2019 6:30:00...	117	Thursday	6:30pm		

I used the days of the week and Time to create the visualizations for my first figure to show the most active time period to depict when to go trick-or-treating.

Figure 2



The screenshot shows the Tableau Data Source interface, identical to Figure 1. It displays the same table of candy data from October 31, 2020, and 2019, with columns for Date, Data Date and Time, # Data, Amount of Candy, Abc Data, Day of Week, and Abc Data Time. The data consists of 14 rows. At the bottom, there are tabs for 'Data Source', 'Sheet 1', 'Sheet 2', and 'Dashboard 1'.

Date	Data Date and Time	# Data	Amount of Candy	Abc Data	Day of Week	Abc Data Time
10/31/2020	10/31/2020 8:15:00...	8	Saturday	8:15pm		
10/31/2020	10/31/2020 8:00:00...	56	Saturday	8:00pm		
10/31/2020	10/31/2020 7:30:00...	48	Saturday	7:30pm		
10/31/2020	10/31/2020 7:00:00...	52	Saturday	7:00pm		
10/31/2020	10/31/2020 6:30:00...	44	Saturday	6:30pm		
10/31/2020	10/31/2020 6:00:00...	11	Saturday	6:00pm		
10/31/2019	10/31/2019 8:15:00...	40	Thursday	8:15pm		
10/31/2019	10/31/2019 8:00:00...	77	Thursday	8:00pm		
10/31/2019	10/31/2019 7:30:00...	144	Thursday	7:30pm		
10/31/2019	10/31/2019 7:00:00...	145	Thursday	7:00pm		
10/31/2019	10/31/2019 6:30:00...	117	Thursday	6:30pm		

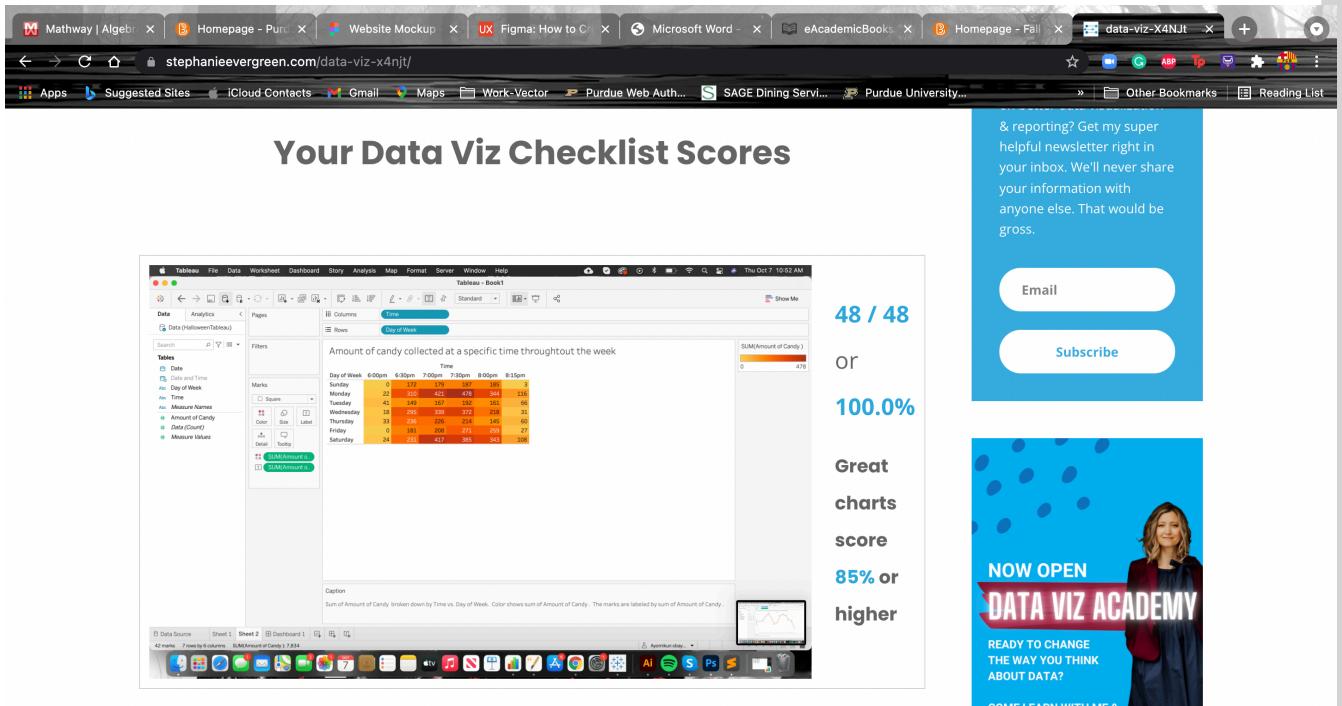
For the second visualization, I wanted to switch things around. I wanted to show which quarter (year) had the highest average of collected candy.

Critique

Rate your visualizations (Figure 1 and Figure 2) using the link below

<https://stephanieevergreen.com/rate-your-visualization/>

Figure 1 Rating



Fully Met

6-12 word title is left-justified in upper left corner.



Figure 2 Rating

The screenshot shows a web browser window with multiple tabs open. The active tab displays a Tableau dashboard titled "The Average amount of Candy collected throughout the years (2008-2020)". The dashboard features a line chart with data points labeled with their values: 82.0 (2008), 90.3 (2009), 144.8 (2010), 66.2 (2011), 79.7 (2012), 124.5 (2013), 137.0 (2014), 129.3 (2015), 100.0 (2016), 87.2 (2017), and 36.5 (2018). To the right of the dashboard, there is a vertical column of text and a promotional graphic. The text reads: "48 / 48", "OR", "100.0%", "Great charts score 85% or higher". To the right of this text is a blue rectangular graphic featuring a woman in a dark dress standing next to a red banner that says "NOW OPEN DATA VIZ ACADEMY". Below the banner, smaller text reads "READY TO CHANGE THE WAY YOU THINK ABOUT DATA?", "COME LEARN WITH ME & YOUR LIFE WILL NEVER BE THE SAME.", and "THIS IS THE STUFF NO ONE TAUGHT YOU IN SCHOOL.". At the bottom of the page, there are two empty text boxes with the placeholder text "6-12 word title is left-justified in upper left corner." and "Subtitle and/or annotations provide additional information".

48 / 48

OR

100.0%

Great charts score 85% or higher

NOW OPEN

DATA VIZ ACADEMY

READY TO CHANGE THE WAY YOU THINK ABOUT DATA?

COME LEARN WITH ME & YOUR LIFE WILL NEVER BE THE SAME.

THIS IS THE STUFF NO ONE TAUGHT YOU IN SCHOOL.

6-12 word title is left-justified in upper left corner.

Subtitle and/or annotations provide additional information

Refine

In this part of the visualization challenge, you should identify one or more characteristics of the visualizations you created (Figure 1 and Figure 2) and update the figures. Include an updated version of each Figure below. In the figure caption, state what changes were made.

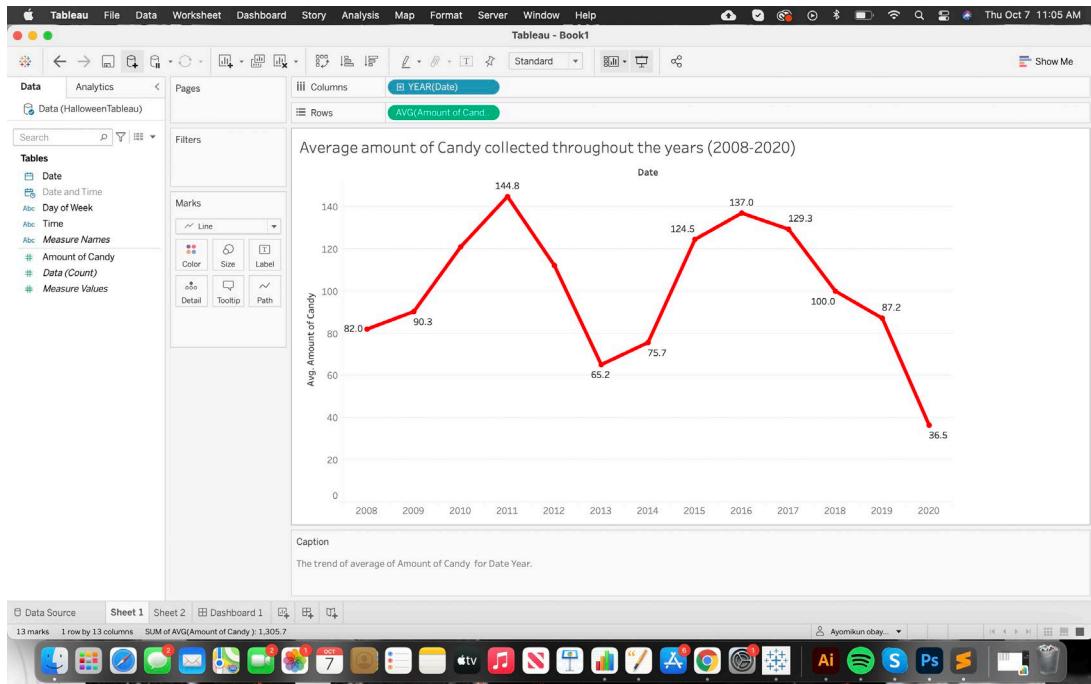


Figure 2 Refined: I change the color from brown to red to have a more scary feeling because red represents blood. I also changed the title to be more in depth because collecting candy could be someone's hobby.

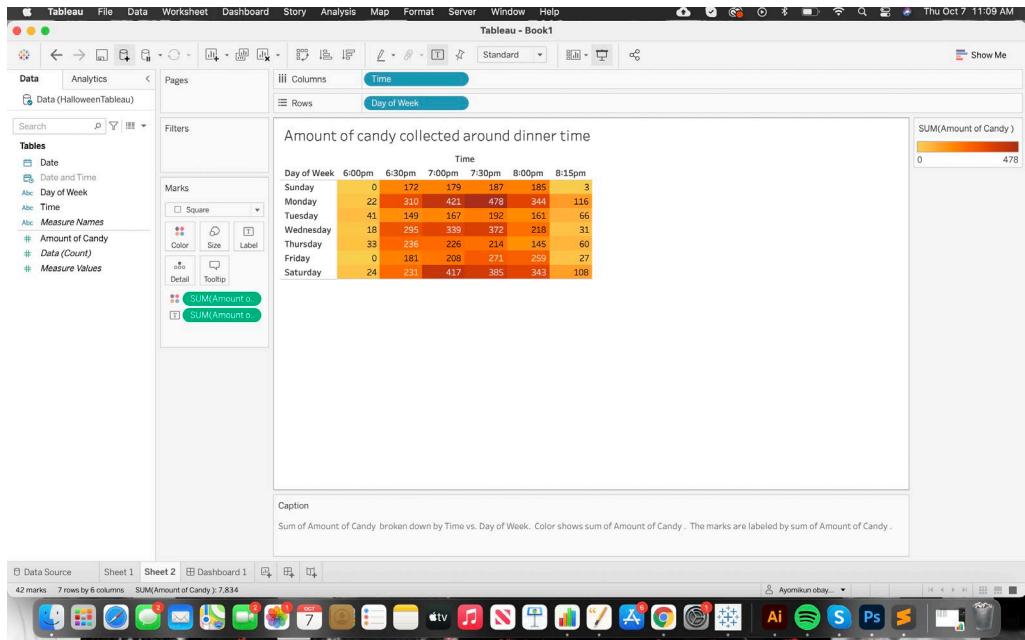
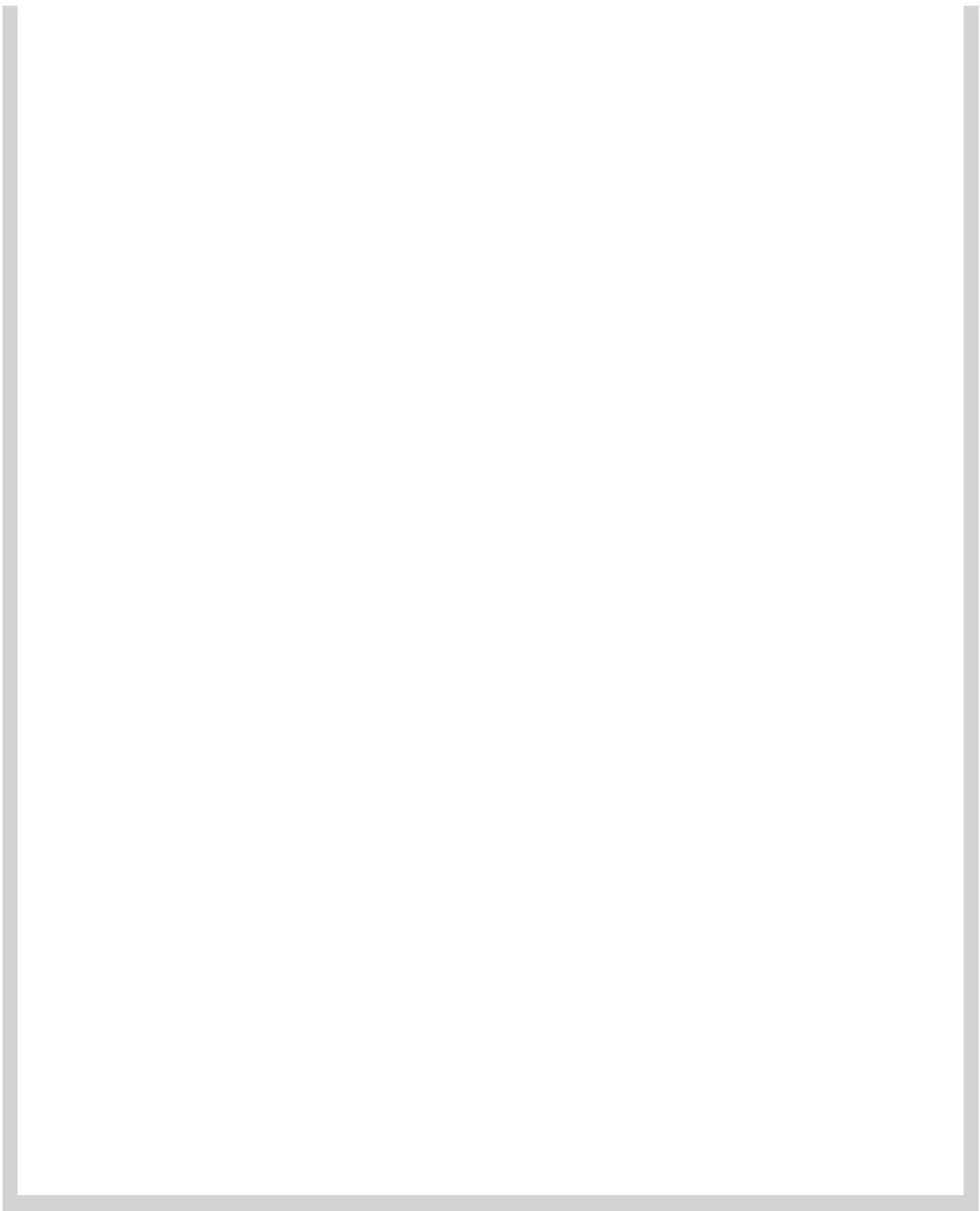
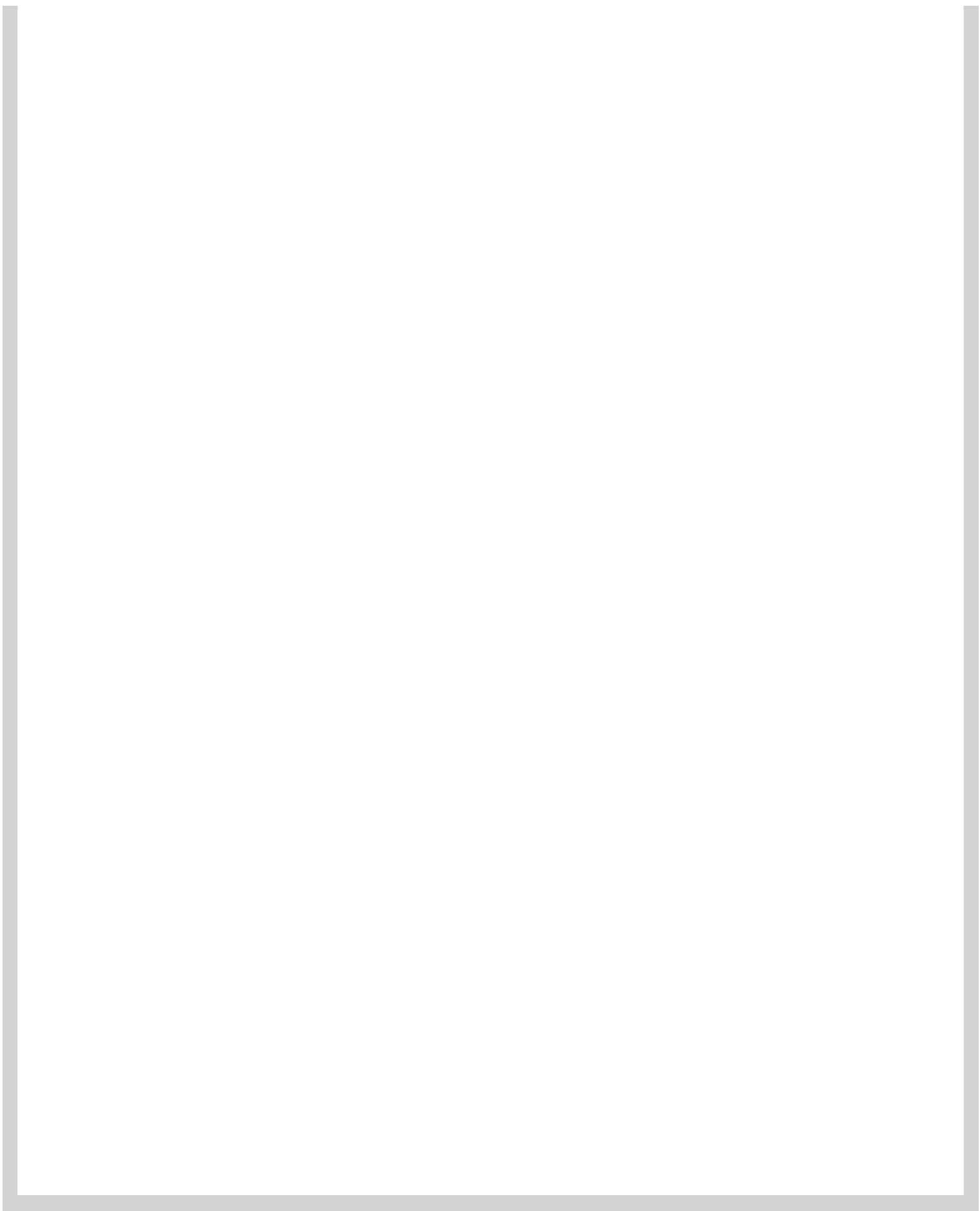


Figure 1 Refined. I change the title to read around dinner time because that is the time period most active for everyone participating in trick-or-treating.

What's the story?

The story that I wanted to tell using the data was the amount of candy collected during a certain time period of the week through to the course of the year. For my first figure, Figure 1, I used a line graph to depict to my audience which year had the highest average of candy collected and lowest. That will mean that a lot of revenue was steadily growing from the year of 2008 - 2011 and never got to its highest peak which was the year 2011. The line graph can be used, if there was a brand of candy, to see how each of them performed and how their revenue increased throughout the years. While figure 2, shows the time and day of the week that trick-or-treating is the most active and that show be the time range that everyone show aim for to receive large amounts of treats. Figure 2 refine represents the amount of candy collected around dinner time which might be an awful decision, however, there is nothing the parents can do but allow their kids to collect candy because these kids might not want to eat actual food for at least 3 weeks (depending on the amount of candy collected). My audience is anyone that is interested in the performances/ amount of candy collected throughout one of the most popular periods. My first assumption was the date was helpful because it can show my audience a progressive increase or decrease of the amount of candy collected each year with time added to the picture. My second assumption was that date and time were not really relevant for what I wanted my story to be about which was the amount of candy collected during a time period of the year. My last and final assumption was the day of the week which was helpful because you expect a kid to trick-or-treat only once but there can be instances where the kid has no luck in getting an amount that he/she wanted.







Byrd Data Visualization Lab