CGT270
Midterm Part II

Data Visualization Challenge

Student:

Matthew Gallagher

Professor

Dr. Vetria Byrd

TA

Subia Ansari

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Contents

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 trick 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.

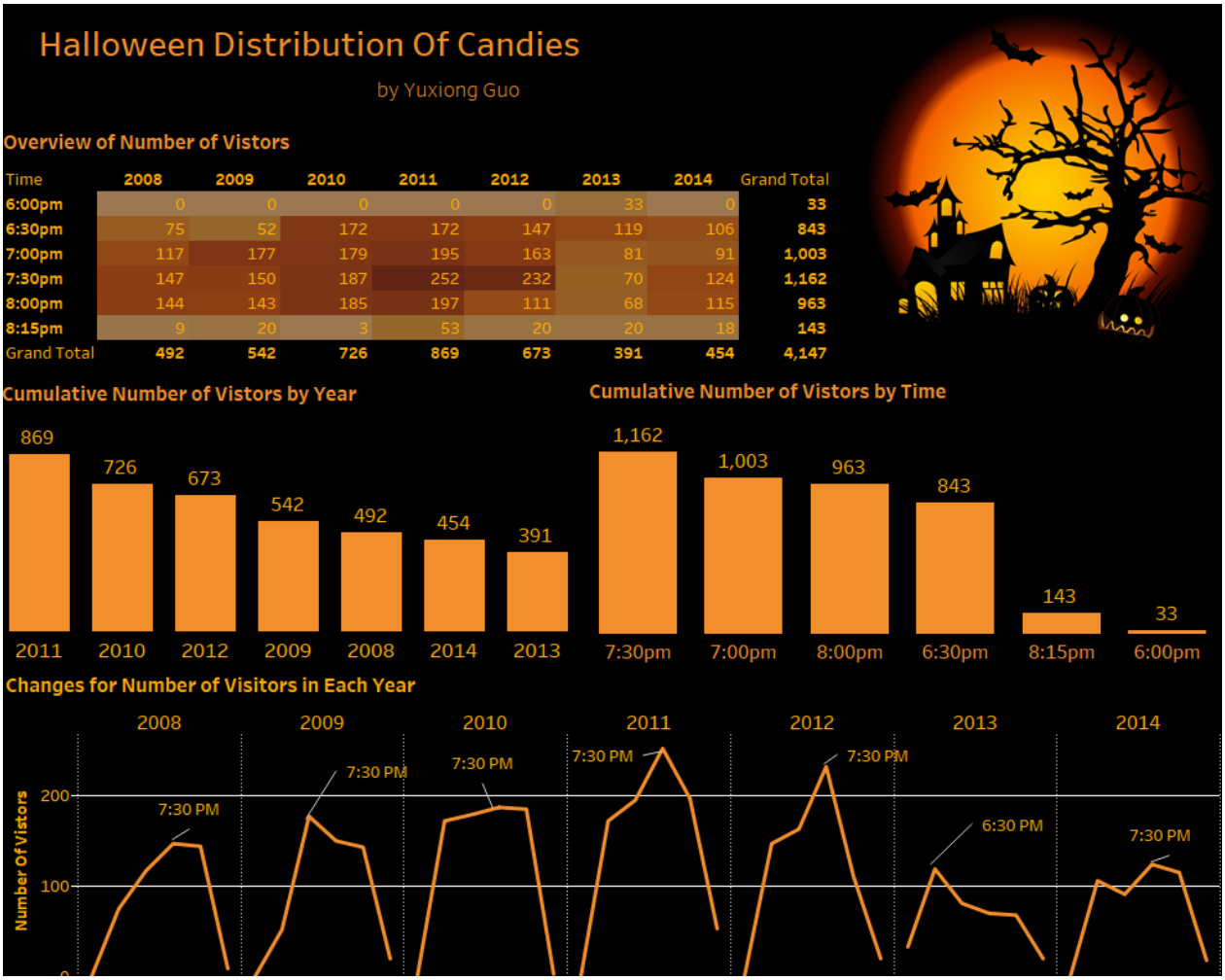
Location of home

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' 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).

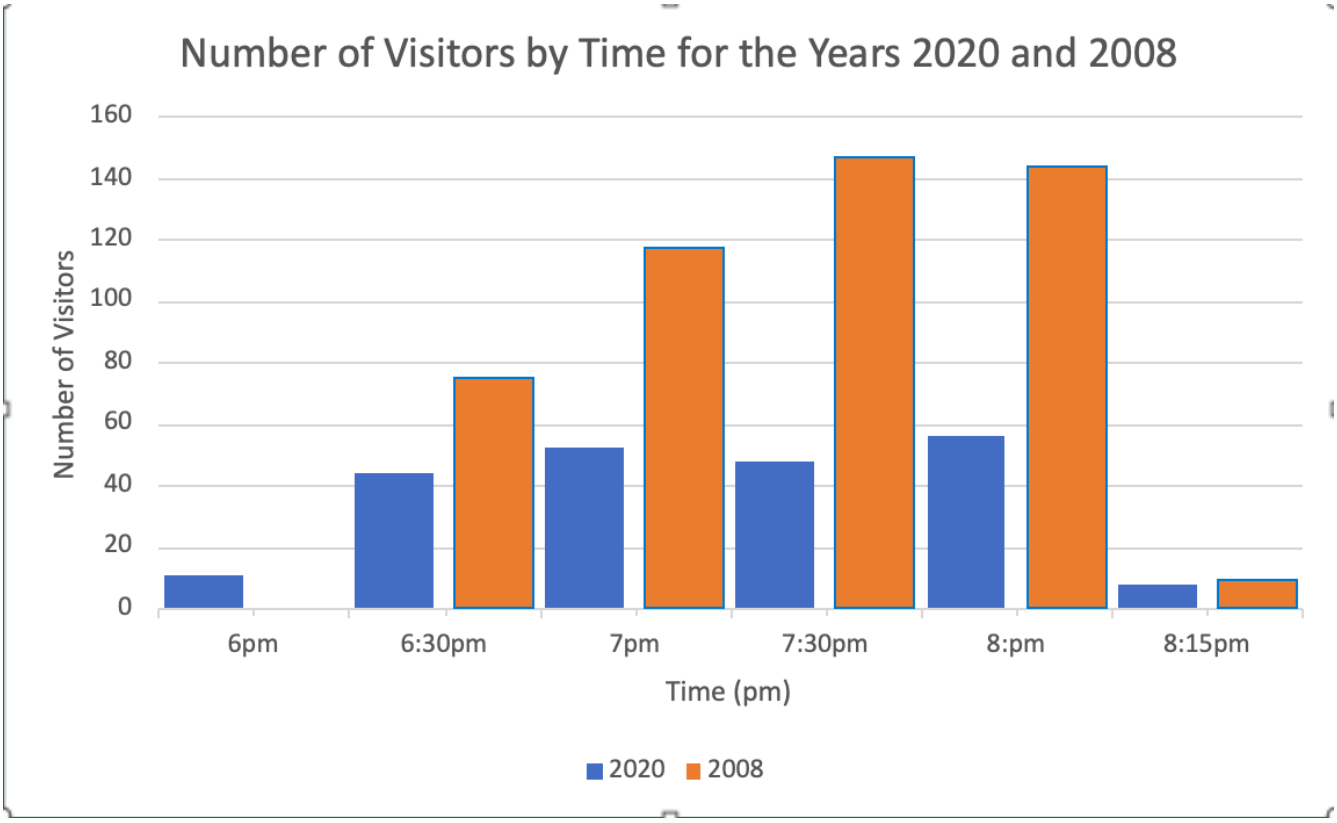
Use the Tab key to add more rows to the table below.

Variable	Data type	Statistical Method (where applicable)
Year	String Length 4	(Max ,Min)
8pm	Float	(Mean, Max, Min)

Represent

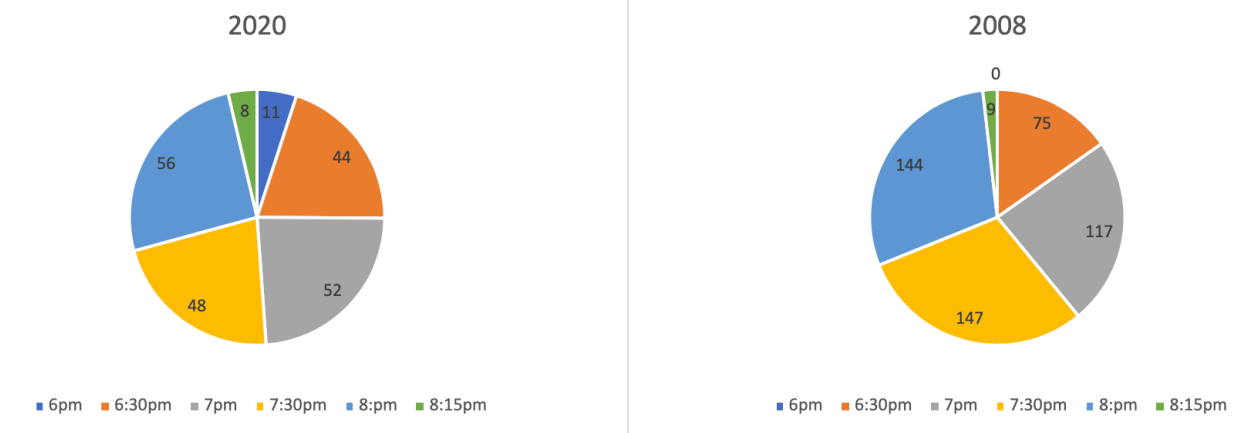
How to replace this figure: Right-click on the figure below, select Change Picture → From a File. Locate your figure.

Figure 1. Shows the comparison of visitors of the years 2008 and 2020 at given times.



How to replace this figure: Right-click on the figure below, select Change Picture → From a File. Locate your figure.

Figure 2. Shows the most common time that visitors went trick or treating for the years 2008 and 2020



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.

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

Figure 1

	2020	2008
6pm	11	0
6:30pm	44	75
7pm	52	117
7:30pm	48	147
8:pm	56	144
8:15pm	8	9

Figure 2

	2020
6pm	11
6:30pm	44
7pm	52
7:30pm	48
8:pm	56
8:15pm	8

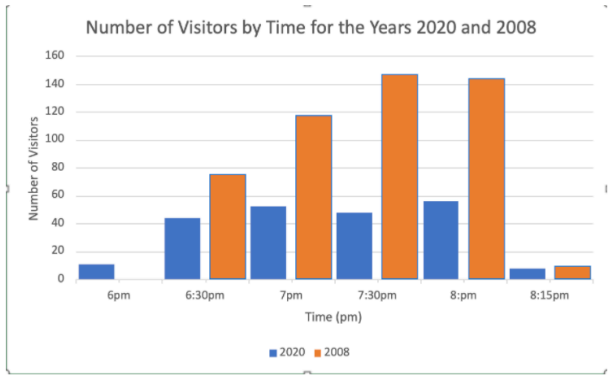
	2008
6pm	0
6:30pm	75
7pm	117
7:30pm	147
8:pm	144
8:15pm	9

Critique

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

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

Figure 1 Rating



41 / 48

or **85.4%**

Great charts score 85% or higher

Figure 2 Rating

26 / 38 or **68.4%**

Great charts score 85% or higher

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.

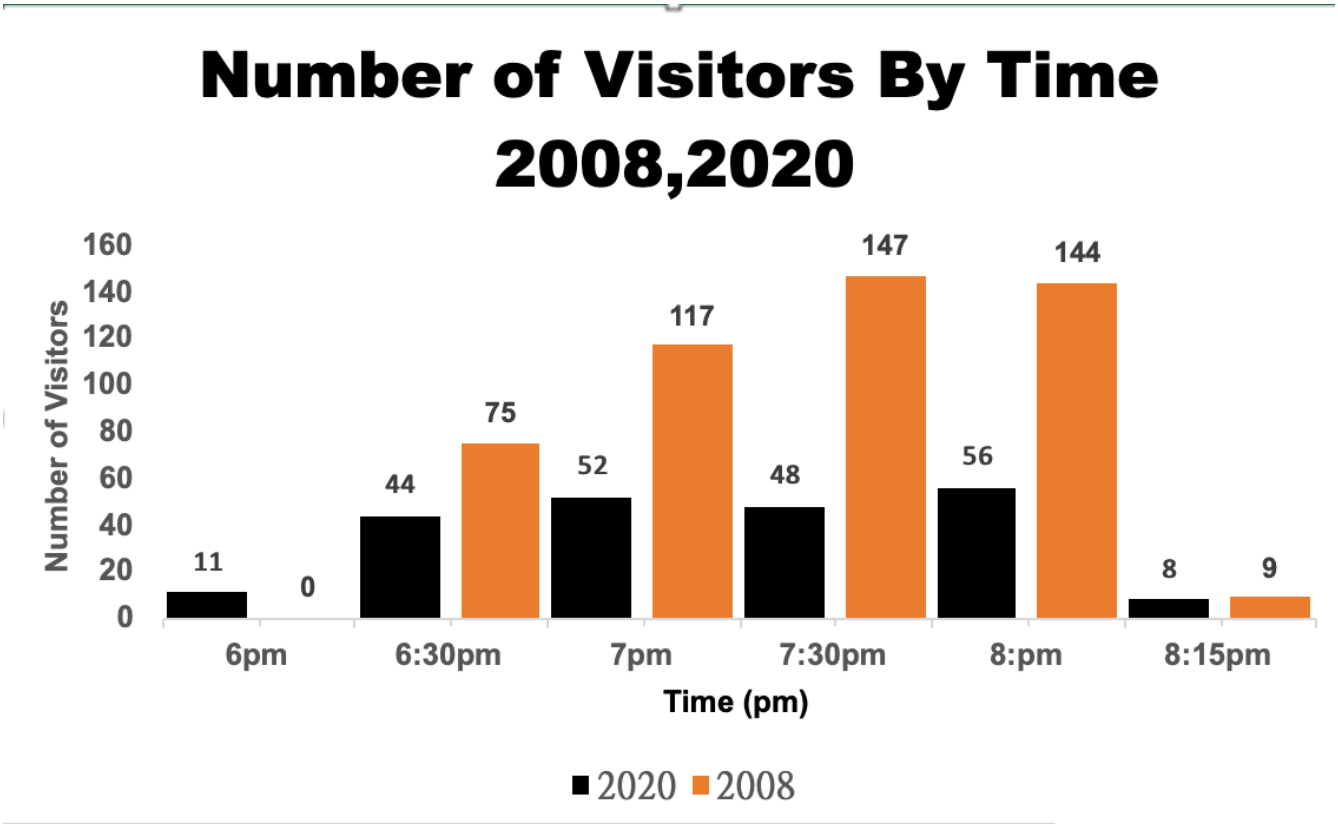


Figure 1 Refined. Changed the color to fit the halloween theme. I got ride of axis lines and made labels more visible. Note that I have tried to make a left title but I could not figure out how to do it on excel.

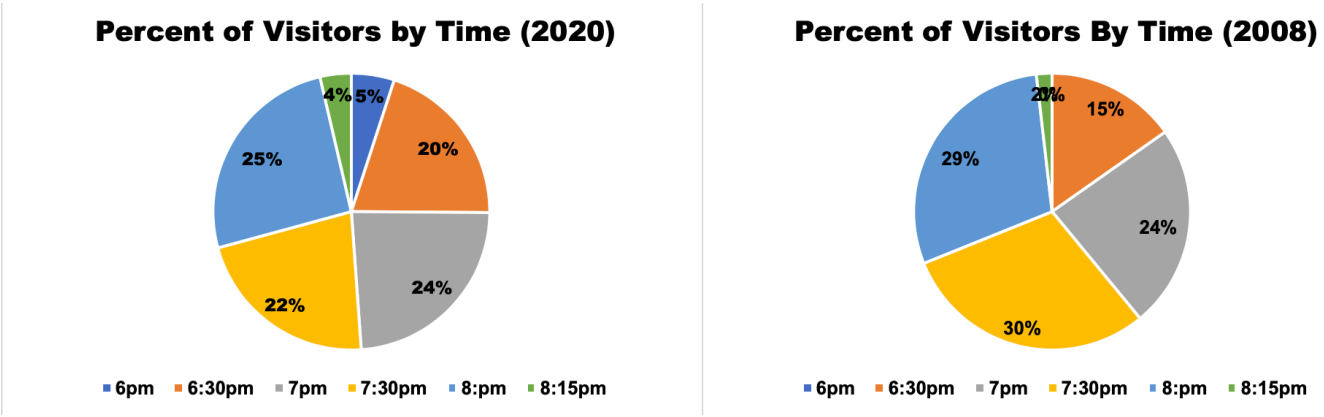


Figure 2 Refined. These two charts were very stubborn. I wanted to make them halloween theme but excel wouldn't let this happen. Other than that I made the labels easier to read and made the title make more sense.

What’s the story?

The audience is anyone who goes trick or treating or helps a young one with it. I assume that the reader knows what Halloween is and why certain times are better to go than others..Halloween is a very interesting holiday. More and more kids stop going trick or treating. I have noticed this and the graph supports this claim. In 2008, the total number of trick or treaters were 492 visitors, while 2020 was only 211 visitors. In 2020 the visitors were cut in half. I have a guess that it is because of the crime rate and dangers of being out at night. According to figure 1 both 2008 and 2020 have very few kids out at past 8. This makes sense because that is when all the bad things happen at night. Now that I know why there are less kids going, I would like to know what the best time to take my kid out for trick or treating that is both safe and convenient. According to figure 2, the times 7:30 and 8 are the most popular times to go. This makes sense because this is around 1 to 2 hours for the parents to relax after work and prepare their kids to go without it being too late. Overall, I learned a lot form this data and conclude that Halloween is becoming less popular for kids because of how dangerous. It is at night. I also know that 7:30 to 8 is the best time slot for kids and adults.

Checklist of what to submit:

- Save this file as LastnameFirstInitial_CGT270Fall2021_MidtermPartII.pdf
- Only submit one (1) file. All of your work should be contained in this file.
- Failure to follow these instructions will result in your work NOT being graded.

General Deductions (others made accordingly)

- No name on the first page of the document: **-5 pts**
- Altered template: **-10 pts**
- No figures included: **-15 pts** for each missing figure
- No figure captions: **-10 pts** for each missing caption
- Zip file submitted: See Checklist of what to submit **(-80 pts)**
- Late submissions: Will **NOT** be graded **(-80 pts)**
- Provided a link to visualizations instead of providing screenshot of the visualization: this will be treated as no figure, no figure caption **(-25 pts)**
- Failure to follow data visualization best practices (data visualization checklist): deductions made appropriately.

Keep in mind: one (1) second after the submission deadline is considered late.

Byrd Data Visualization Lab