CGT270 Midterm Part II

Data Visualization Challenge

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Contents

[Halloween Visualization 3](#_Toc84260760)

[Data Description 3](#_Toc84260761)

[Location of home 4](#_Toc84260762)

[Example 4](#_Toc84260763)

[The Assignment 5](#_Toc84260764)

[Data Visualization Process 6](#_Toc84260765)

[Acquire 6](#_Toc84260766)

[The Data 6](#_Toc84260767)

[Parse & Mine 7](#_Toc84260768)

[Represent 8](#_Toc84260769)

[Filter 11](#_Toc84260770)

[Critique 12](#_Toc84260771)

[Refine 13](#_Toc84260772)

[What’s the story? 16](#_Toc84260773)

# 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

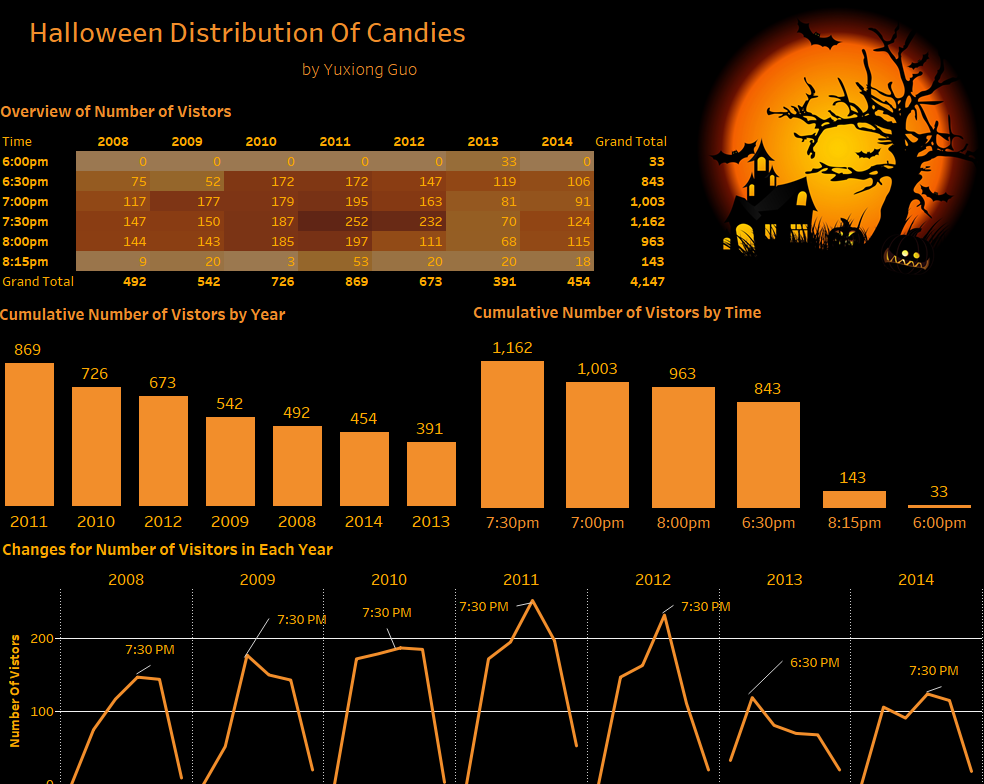
City, State: Cincinnati, Ohio

Zip code: 45207

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

## Example

Here’ 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)** |
|  |  |  |
|  |  |  |

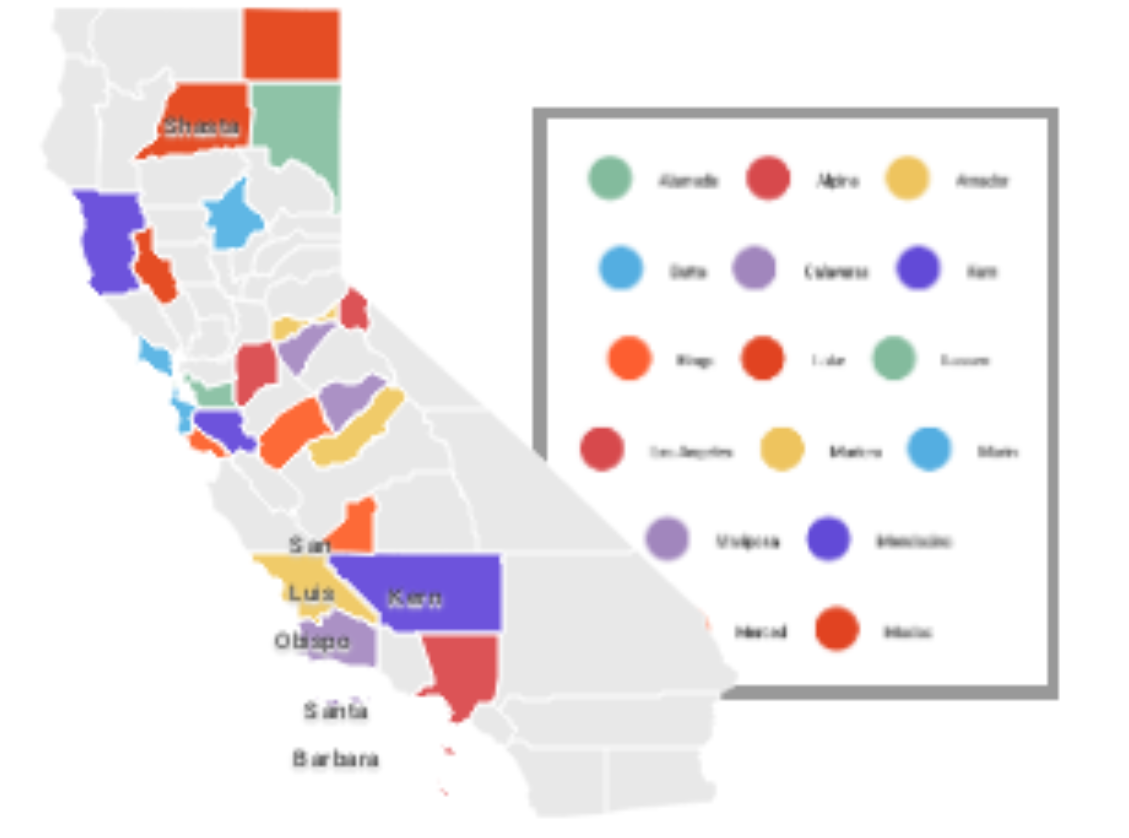
# Represent

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

How to replace this figure: Right-click on the figure below, select Change Picture 🡪 From a File. Locate your figure. Figure 1. <Replace this text with your figure caption> Source: https://infogram.com/blog/do-this-not-that-data-visualization-before-and-after-examples/

<Remove this text before submitting your work: replace the image below with your second visualization.>

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

 Figure 2. <Replace this text with your figure caption> Source: https://infogram.com/blog/do-this-not-that-data-visualization-before-and-after-examples/

**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.**

Use this page format for visualization that require a landscape layout. Remove this text and replace the figure with your own visualization.



Figure # Don't forget the figure caption. Source: https://towardsdatascience.com/my-top-10-most-fascinating-data-visualizations-from-2020-22a91b23e981

# Filter

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

**Figure 1**

**Figure 2**

# Critique

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

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

**Figure 1 Rating**

<add screenshot of rating for Figure 1 here>

**Figure 2 Rating**

<add screenshot of rating for Figure 2 here>

# 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.

Replace the picture with your visualization, remove this text before submission.

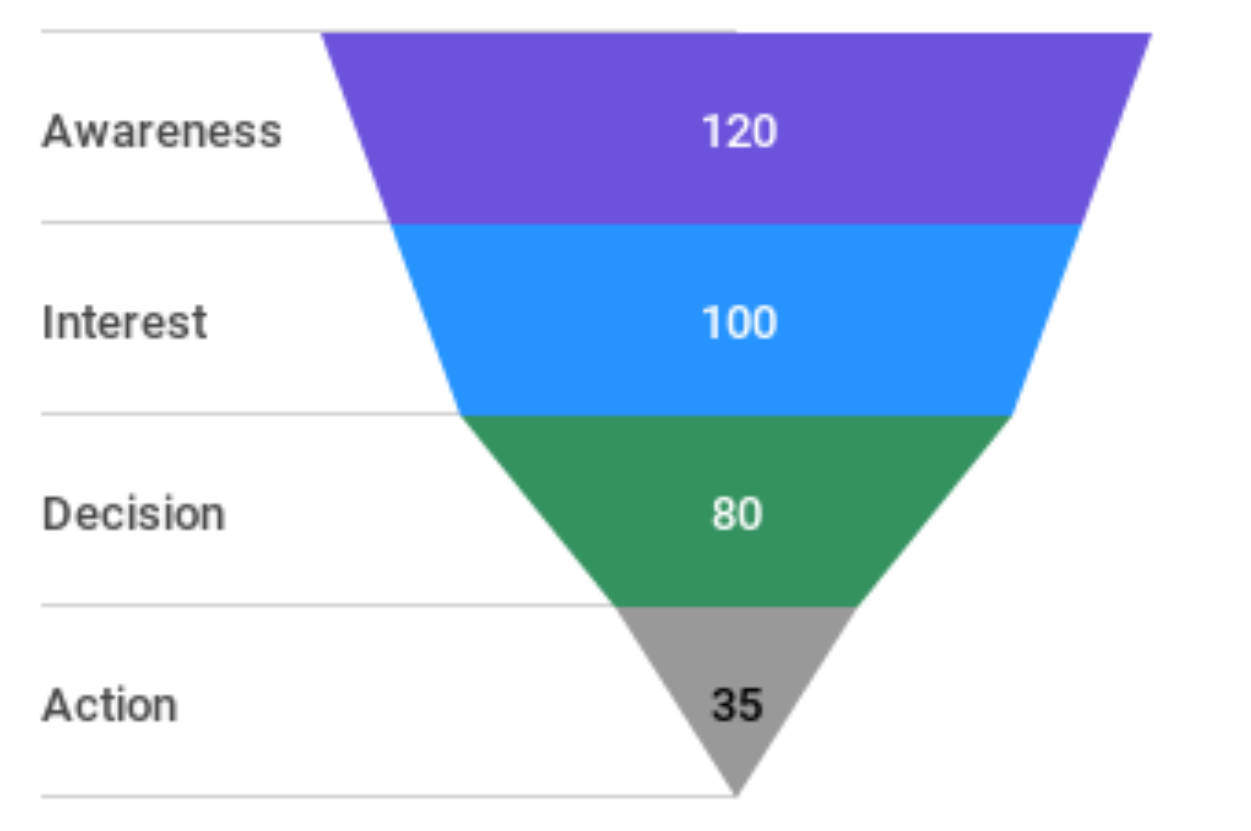


Figure 1 Refined. Updated the funnel chart to show values and labels, and a color palette that is easier to see changes across categories. Source: https://infogram.com/blog/do-this-not-that-data-visualization-before-and-after-examples/

Replace the picture with your visualization, remove this text before submission.

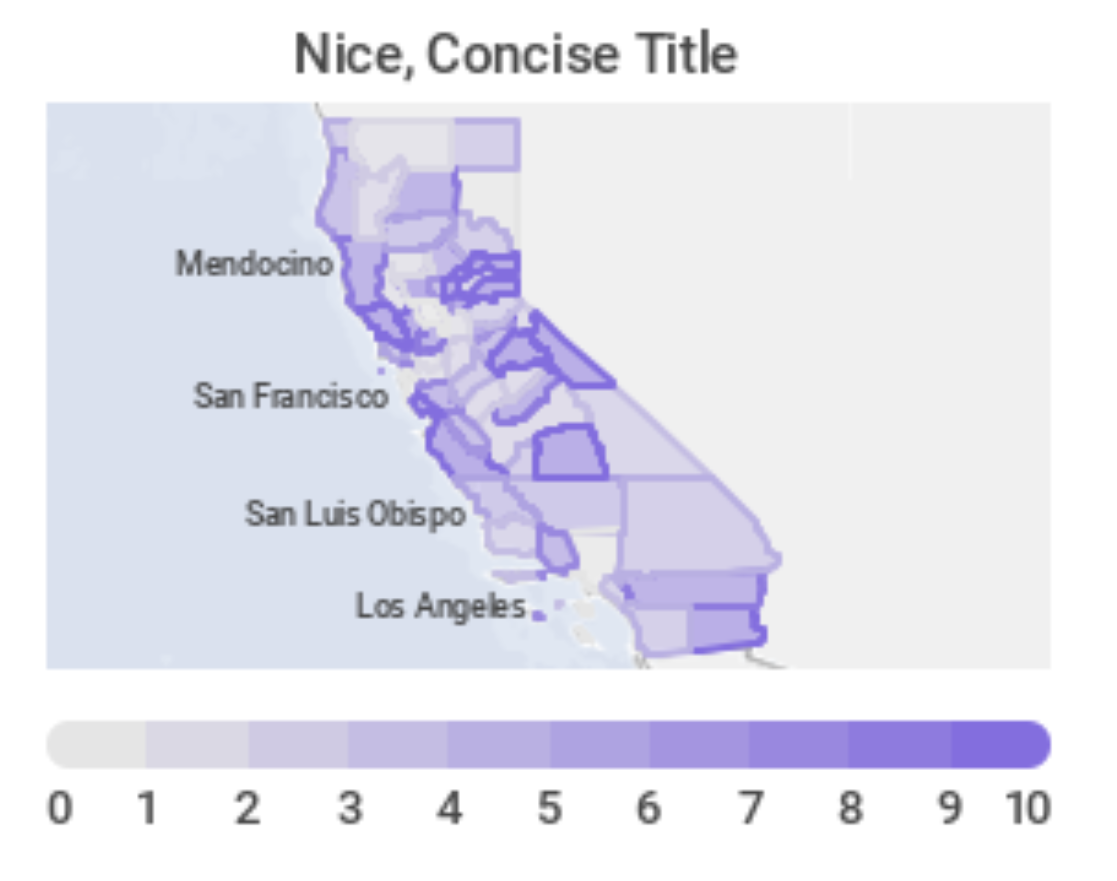


Figure 2 Refined. Added a nice, concise title, a progress bar to replace the cluttered legend. Source: https://infogram.com/blog/do-this-not-that-data-visualization-before-and-after-examples/

Use this page if your visualizations require a landscape layout. Remove this page if it is not needed.

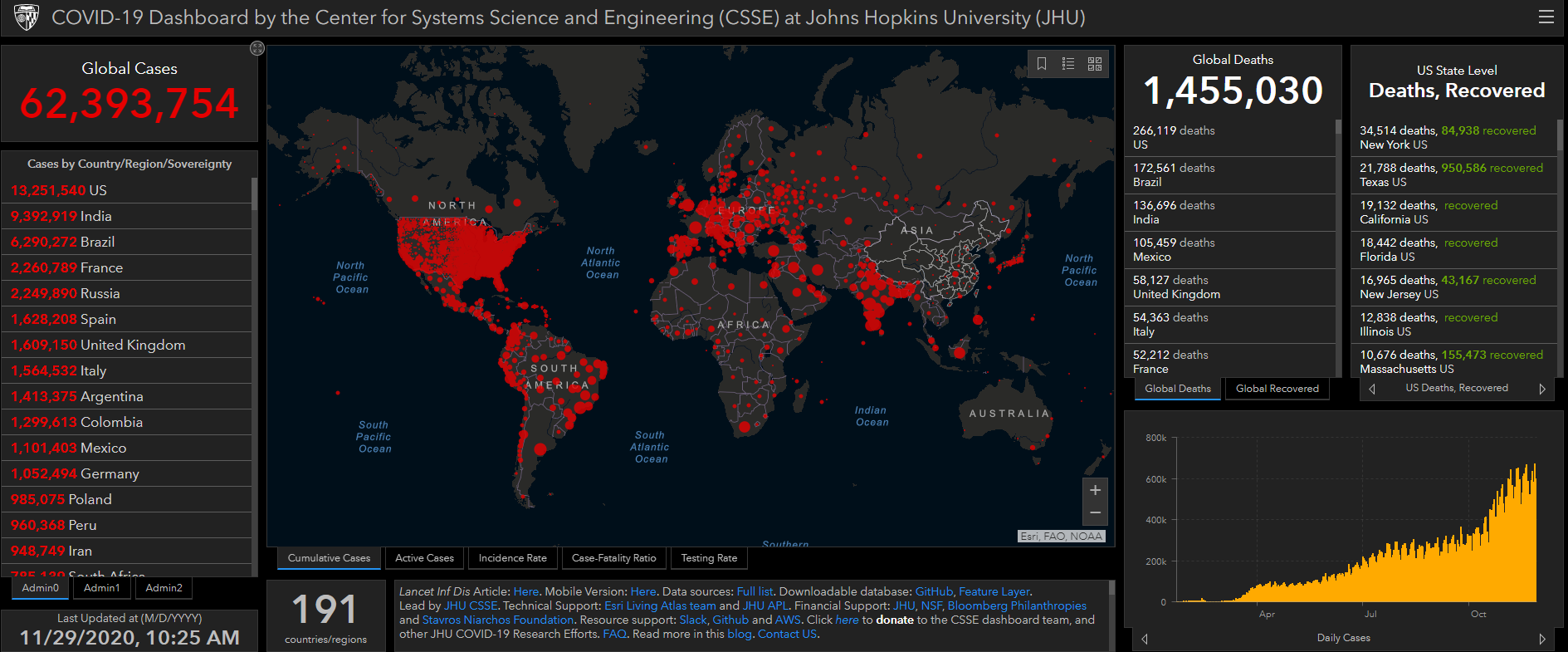


Figure # Figure # Refined. Don’t forget the figure caption. Source: https://coronavirus.jhu.edu/map.html

# What’s the story?

**Replace the text on this page with your story**. The story should be no more than one-page **If you go over the page limit, your story will NOT be read (-5 pts)**. Single space Calibri Light (Body) font, font size 13. This is a very simple data set. There are only a few years of data broken down into 4 half-hour time blocks with cumulative totals.

Using complete sentences, answer the following questions:

1. What story did you tell using the data? *(Note: your story must be supported by your visualizations: Figure 1, Figure 1 Refined, Figure 2, Figure 2 Refined). (***500 words max, with complete sentences). Make sure you mention the figures (by name, for example, as seen Figure 1, Figure 1 Refined, etc.)**
2. Who is your audience? (Use complete sentences)
3. List 3 assumptions you made while implementing the data visualization process?
   1. <assumption 1: complete sentences, 150 words max>
   2. <assumption 1: complete sentences, 150 words max >
   3. <assumption 1: complete sentences, 150 words max >

Points will be taken off for incomplete sentences.

Bonus points for REALLY GOOD stories!

**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