CGT 270 Data Visualization Fall 2021
Module II
Week 5
Lab 5: Critique & Refine

The goal of this lab is to critique and refine visualizations you created in Lab 4: Filter & Represent using your **Tableau Training Data**. In this lab you will perform a self-critique of the two visualizations you created last week and refine each of the visualizations.

Part I

Load each visualization to the website below, then perform your self-critique/assessment
https://stephanieevergreen.com/rate-your-visualization/

For each visualization you will rate all 24 checkpoints in about 5 minutes or less (per visualization). At the end, you'll see your visual's total score, along with a list of the checkpoints where you rocked it and places where you could improve. **Save your scores for each visualization (Print to PDF) and upload it with your assignment.**

By the end of Part I you should be able to

Remember	*Recall* visualization principles.
Understand	*Discuss* data visualization best practices.
Apply	*Examine* visualization solution(s) for insight.
Evaluate	*Assess* data visualization products for impact & effectiveness of visualization(s).
Analysis	*Distinguish* between the question being asked and the visual solution provided; does the visualization address/answer the question(s) .
Create	*Propose* and make recommendations for improvement.

Part II

You will need the Andy Kirk Book.

By the end of Part II, you should be able to:

Remember	*Describe* what happens in the **refine** stage.
Understand	***Describe*** what stages are impacted by the **refine** stage and how.
Apply	***Implement*** some method(s) or technique(s) to make the visualization better.
Evaluate	***Evaluate*** the advantages and disadvantages of the changes made.
Analysis	***Explain*** the rationale for the features that were refined.
Create	***Generate, produce and/or*** improve the visualization. Tips to improve your data visualization design.

The Andy Kirk Book (Data Visualization Handbook for Data Driven Design) contains a gallery of visualization chart types (CHRTS) located in Chapter 6: Data Representation). Each chart type in the gallery includes: representation description, an example, how to read it and what to look for, presentation tips and variations and alternative chart types.

Locate the chart type you chose to represent your data as part of the Filter & Represent Lab (Week 4) in in the gallery of visualization chart types. For each of the visualizations you created in the Filter & Represent Lab (Week 4) locate the variations and alternatives section on the gallery page and choose one of the variations and/or alternative chart type to represent the refined version of your visualization.

For example, if you created a bar chart, find out what variations and alternative chart types are recommended. Using the same data, you used in the Filter and Represent lab, create a new visualization using one of the variation or alternative chart types.

You must use data visualization best practices (see **Data Visualization Check list**).
Perform a self-assessment of the newly created visualizations (see Part I).

WHAT TO TURN IN

Part I: Critique

1. Self-assessment of the two visualizations you created in the Filter & Represent Lab (Week 4); saved in PDF format
    a. LastnameFirstInitial_Fig1SelfAssessmentScore.pdf
    b. LastnameFirstInitial_Fig2SelfAssessmentScore.pdf

Part II: Refine
Make sure you use data visualization best practices (See Data Visualization Check list).

Figure 1
Original Chart type: *Bar Graph*
Refined Chart type: *Line Graph*
How to read it and what to look for (Refined Chart type): Firstly, learn about the axes: what is the time period range presented on the x-axis (and in what order) and what is the range of quantitative values shown on the y-axis, paying particular attention to the origin value (which may not be zero)? Inside the chart, determine what categories each line represents: for single lines this will usually be clear from the chart title, for multiple lines you might have direct labelling or a legend to learn colour associations. Think about what high and low values mean: is it 'good' to be large/small, increasing or decreasing? Glance at the general patterns (especially if there are many) looking for observations such as any trends (short or long term), any sudden moments of a rise or fall (V- or W -shapes, or inverted), any sense of seasonal or cyclical patterns, any points of interest where lines cross each other or key thresholds that are reached/exceeded. Can you mentally extrapolate from the values shown any sense of a forecasted trend? Avoid jumping to spurious interpretations if you see two line series following a similar pattern; this does not necessarily mean that one thing has caused the other, it might just be coincidence. Then look more closely at categories of interest and at patterns around specific moments in time, and pick out the peak, low, earliest and latest values for each line. Where available, compare the changing quantities against annotated references such as targets, forecast, previous time periods, range bands, etc.
Figure Caption: *From 2002 to 2007, U.S. construction spending is increasing, until around late 2007 when it starts decreasing and hits its lowest point at 2011.*
Export the refined visualization as an image, save as LastnameFirstInitial_Fig1Refined.jpg

Figure 2
Original Chart type: *Stacked Bar Graph*
Refined Chart type: *Bar Graph*
How to read it and what to look for (Refined Chart type): Look at the axes so you know with which categorical value each bar is associated and what the range of the quantitative values is (min to max). Think about what high and low values mean: is it 'good' to be large or small? Glance across the entire chart to locate the big, small and medium bars and perform global comparisons to establish the high-level ranking of biggest > smallest. Identify any noticeable exceptions and/or outliers. Perform local comparisons between neighbouring bars, to identify larger than and smaller than relationships and estimate the relative proportions. Estimate (or read, if labels are present) the absolute values of specific bars of interest. Where available, compare the quantities against annotated references such as targets, forecast, last year, average, etc.
Figure Caption: *The construction category that suffered most under the Great Recession was residential, whilst other categories were barely affected.*
Export the refined visualization as an image, save as LastnameFirstInitial_Fig2Refined.jpg

(PNG files WILL NOT be graded)

(add an additional page if needed)