EXERCISE 4 – VISUALIZING DATA Communication researchers and other social scientists make extensive use of data visualization techniques throughout the research cycle: Visualizations are used internally by research teams to better understand the structure and properties of large datasets and are also a vital tool for communicating research findings in a way that is intuitive and meaningful for a general audience. WHAT WILL YOU DO? For this exercise, you will create simple exploratory visualizations of data using SPSS (or other analysis software). You will also use the principles of effective visualization discussed in class to critique real-world data visualizations and evaluate how well they are able to communicate research findings to a non-specialist public. STEP 1: VISUALIZE QUANTITY Using SPSS or another software tool (e.g., Excel, Tableau) and the dataset from Exercises 2 and 3, create an appropriate visualization of the amount of people who reported each type of stress source. STEP 2: VISUALIZE DISTRIBUTION Using the same data and tool set as before, create an appropriate visualization for the distribution of age in the dataset. STEP 3: VISUALIZE A RELATIONSHIP – COMPARISON OF MEANS Using the same data and tool set as before, create an appropriate visualization for the relationship between age (using the three age groups) and optimism. STEP 4: VISUALIZE A RELATIONSHIP – CORRELATION Using the same data and tool set as before, create an appropriate visualization for the relationship between optimism and self-esteem. STEP 5: CRITIQUE OTHER VISUALIZATIONS For two of the following real-world visualizations, give a brief written critique: a) As part of your critique, you clearly list which variables are represented in the visualization, and which aesthetics each is mapped to. Fall 2022 2 b) Comment on at least one design choice that makes the visualization an effective tool for communicating data visually, as well as at least one aspect that could be improved. (Note: You may wish to refer to the general principles of effective visual communication discussed in the lecture to support your commentary.) c) Finally, sum