

Lesson 10: Good and Bad Data Visualizations



ADAPTED FROM CODE.ORG

Objectives: You will be able too...



- Identify an effective data visualization and give justification
- Collaborate to investigate and evaluate a data visualization
- Suggest an appropriate visualization for some data
- Evaluate a data visualization for effectiveness of communication
- Identify a poor data visualization and give justification

Getting Started



- Don't forget to fill out the Survey from Lesson 7!
- Friday you looked at a bunch of data from the Pew Research Center that was all represented visually in graphs and charts.
- The question is: why?
- Why did they choose to make a bunch of charts and graphs rather than just showing the raw data itself?

Think-Pair-Share: Why Make Visualizations?



- Why did Pew Research choose to make a bunch of charts and graphs rather than just showing the raw data itself?
- List a few advantages and disadvantages (at least 2 for each) of using visualizations to communicate data

Think-Pair-Share: Why Make Visualizations?



- Why did Pew Research choose to make a bunch of charts and graphs rather than just showing the raw data itself?
 - Visualization is about communication. The goal of any data visualization is to transform data into useful information
- List a few advantages and disadvantages (at least 2 for each) of using visualizations to communicate data
 - There are both advantages and disadvantages to data visualizations
 - Advantages: more easy to compare, see trends, highlight ideas
 - Disadvantages: human error, bias, miscommunicate, remove details

Remarks:



- Making even a small visualization may have been surprisingly challenging and varied.
- Even experienced data analysts can end up obscuring their message when they make data visualizations.
- The better understand some of the skills we just read about, we are going to evaluate a collection of data visualizations and determine how well they communicate their message.

Review and Rate Data Visualizations Activity



- You will work with a partner through the worksheet
- You will either be given data visualization Collection A or Collection B (links found in code studio)
- You will:
 - Give a rating from “great” to “horrible” for 15 different data visualizations
 - Choose the best (or favorite one) and explain why it effectively tells a story or communicates some data
 - Choose the worst and explain why it’s ineffective
- We will share our results with another group

Debrief: What makes a good/bad data visualization?



- **Part 1: Share out best/worst**
 - We will build a list of good/bad properties of the two representations
- **Part 2: Discuss graphic number 5 – The Changing Face of America**
 - How did different groups rate this graphic?
 - What data is presented?
 - What is the difference between the two visualizations?

Wrap-up: Data Visualization 101



- We are going to be making some of our own visualizations of data very soon. To help us do that, we're going to look at some helpful tips for effectively communicating with data visualization
- Data Visualizations 101: click the link on my weebly and read the first 4 pages of this document

Wrap-up: Data Visualization 101



- **What are the key take-aways from this guide?**
 - Choosing the right way to visualize data is essential to communicating your ideas
 - There are stories in data; visualization helps you tell them
 - Before understanding visualizations, you must understand the types of data that can be visualized and their relationships to each other
 - Certain chart types are right for certain situations, depending on the data

Further Discussion:



- What are the benefits of visualizing data?
- Can we characterize common mistakes in visualizations to which we gave low ratings?
- Can we characterize common strengths in effective visualizations?
- Not a visualizations were charts; what other types are there?
- As you embark on making your own visualization, what do you want to keep in mind so that you can avoid rookie mistakes?

Homework:



- Choose the visualization that you thought was the best or worst (pick one) from the ones you saw in class and do the following:
 - Describe the visualization so the read knows which one you are talking about (ex: “Collection A # 2 – Average divorce rates in America”)
 - Say whether it was the best or worst and why. Justify using the principles we have discussed in class and the visualization 101 guide
 - Try to keep your response around 100 words (3-5 sentences)