Some questions to ask yourself when evaluating and creating plots

CMSE 402, Data Visualization Principles and Techniques
Spring 2025

Evaluating data visualizations

Purpose: This set of questions is meant to help you evaluate data visualizations (which we will refer to as "plots") when you are thinking critically about one that you have encountered. Ask yourself these questions as you look at the plot:

1. What message is this plot trying to convey? (What question or questions is this plot trying to answer, or what is it trying to communicate about the data being visualized?)

2. Who is the intended audience of this plot, and what information do you think they will take from this plot?

3. What does this plot do **effectively**? In other words, what visual elements are well-chosen and help to convey information successfully? (Think about this in terms of both specific plot elements as well as general principles for the design of data visualization.)

4. What does this plot do **poorly**? In other words, what visual elements have been chosen in such a way that it fails to effectively convey information?

5. What would you recommend that the creators of this plot do in order to **improve its effectiveness**? (This could include improving its clarity, aesthetic appeal, adding or removing data, or choosing a different means of data representation entirely.) What should be added, removed, or modified in order to more clearly communicate its message?

6. Overall, do you feel that the visualization clearly addresses/answers the question(s) that it intends to?

Creating data visualizations

Purpose: This set of questions is meant to help you think about data visualizations (which we will refer to as "plots") when you are creating one to communicate information. Ask yourself these questions as you think about the plot(s) that you intend to create:

1. What message(s) are you trying to convey? In other words, what questions are you trying to answer, or what are you trying to communicate about your dataset(s)?

2. Who is the intended audience of this plot, and what kind of plots do they expect to see? How will this affect the plot that you make?

3. What types of plot might convey the message that you wish to send? Which one(s) are you choosing, and why? (I.e., why is the one that you chose the most effective one?)

4. When examining each graphic element in your plot:

   (a) Why is this element in your plot? (In other words, what is the use of this element, and how does it contribute to communicating information?)

   (b) Why did you choose to make it appear that way?

   (c) How can it be changed to more clearly communicate information?