

Lecture 3: Tasks and Data

In this lecture we will first describe the overall process of creating and interpreting an information visualization. We will then focus on characteristics of the data and the users' tasks, and provide a high-level view of how the data and the tasks influence the choice of visualization techniques.

Objectives

By the end of the class, you will be able to:

- Describe the steps involved in creating and interpreting an information visualization
- Categorize types of data that are used in information visualizations
- Understand some common ways of deriving new data from given data
- List basic tasks that users may want to perform with visualizations
- Consider the influence of the desired tasks on the presentation
- Consider the influence of the structure, size, and types of data on the presentation

During practicum, we will:

Discuss the Name Voyager assignment.

Discuss and answer questions about the upcoming class project.

Reading Assignment

Few, *Show Me the Numbers*, Chapter 2, Numbers Worth Knowing

Shneiderman, "The Eyes Have It: A Task by Data Type Taxonomy for Information

Visualization" (http://courses.washington.edu/info424/readings/Shneiderman_EyesHaveIt_VL96.pdf)

Questions to consider as you read

Few:

- What are the two basic types of quantitative information, and how do they differ?
- In what ways does quantitative information express relationships?
- Few lists four types of relationships within categories: nominal, ordinal, interval, and hierarchical. Define these.
- What are the two ways of computing an average, and how do they differ?

Shneiderman:

- What is Shneiderman's Information-Seeking Mantra? To what does it refer?
- What 7 data types does he discuss? (Note that although Shneiderman uses the word "types", as does Few, a more accurate term might be "structures".) Describe each.
- What 7 high-level user tasks for interacting with an information visualization does he discuss? Define each.

Reflection questions

(Optional) We encourage you to answer these questions and email your answers to info424@gmail.com by 7 am on the day of the class, to aid in discussion in class.

1. What data are used and depicted in the Name Voyager? What is the type of each?
2. What data are used and depicted in Minard's map of Napoleon's march on Moscow? Again, what is the type of each?
3. Relate each task that you performed in the Name Voyager assignment (e.g., finding or computing a value, comparing,...) to the high-level tasks that Shneiderman discusses.