

# Notes Share Data Through the Art of Visualization

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## Abstract

- Data Visualization
- Data Visualizations with Tableau
- Stories about your Data
- Developing Presentations and Slideshows

## Week 1: Effective Data Visualizations

### Frameworks for Data Visualization

#### 1. [McCandless Method](#)

- Information: the data you are working with
- Story: a clear and compelling narrative or concept
- Goal: a specific objective or function for the visual
- Visual Form: an effective use of metaphor or visual expression

#### 2. [Kaiser fung's Junk Charts Trifecta Checkup](#)

- What is the practical question?
- What does the data say?
- What does the visual say?

## **Design Principles**

1. Choose the right visual
2. Optimize the data-link ratio
3. Use orientation effectively
4. Color
5. Number of things

## **Basic Visualizations**

- Bar Graphs; used to compare sets of data
- Line Graphs; changes over time
- Pie Charts; comparison to the whole
- Maps; geographical data
- Histogram; frequency of data in a certain range
- Correlation charts; shows relation among data
- Heat Maps; shows relationships between two variables using color
- Scatter Plots; shows relationships between two variables using points

## **Elements for Effective Visuals**

- The visual has a clear meaning
- Sophisticated use of contrast
- Attention to minute details, refined execution

## **Five Phases of a User-Centered Design Process**

1. Emphasize
  - What are the emotions/needs of the stakeholders?
2. Design
  - What does the audience need from the data?

### 3. Ideate

- Time to generate ideas for the data visualization.

### 4. Prototype

- Mock visualization

### 5. Test

- Recieve feedback on the prototype from team members

## Week 2: Data Visualizations with Tableau

[The Ultimate Cheat Sheet on Tableau Charts](#)

This section was more hands on than conceptual.

## Week 3: Storytelling with Data

### What to consider when speaking to your audience?

- What role does this audience play?
- What is their stake in the project?
- What do they hope to get from the data insights I deliver?

### Compelling Presentation Tips

- Characters; who cares about this presentation?
- Setting; what is going on?
- Plot; what is the challenge?
- Big Reveal; this is how we solve the problem/challenge.
- Aha moment; this is why we think this will help solve the problem/challenge.

## **When to copy and paste, link, or embed a visual in a presentation?**

- Copy and Paste: this is more of a static visual
- Link: this will change when the other data changes
- Embed: this is independent of it's source and you can manipulate it outside of the data

## **Week 4: Developing Presentations and Slideshows**

### **The McCandless Method for Presenting**

1. Introduce the graphic by name
2. Answer obvious questions before they're asked
3. State the insight of your graphic
4. Call out data to support that insight
5. Tell your audience why it matters

### **Example of a Messy Data Presentation**

- No story or logical flow
- No titles
- Too much text
- Inconsistent format (no theme)
- No recommendation or conclusion at the end

### **Example of a Good Data Presentation**

- Title and date the presentation was updated
- Flow or table of contents
- Transition slides
- Visual introduction to the data
- Animated bullet points
- Annotations on top of visuals
- Logic and progression
- Limitations to the data (caveats)

## Presentation Tips

1. Know your flow
  - Who is your audience?
  - What is the purpose of my presentation?
2. Prepare talking points and limit text on slides
3. End with your pitch
4. Allow enough time for the presentation and questions

## Slide Deck Layout

- First Slide: Agenda
  - high-level bulleted list of topics you will cover
- Second Slide: Purpose
  - summarizes the project and why it is important
- Third Slide: Tell your data story
  - remember that stories have a beginning, middle, and end
- Fourth Slide: Make the Pitch
- Fifth Slide: Challenge the audience with a call to action

## Handling Objections

- About the data
  - Where did you get the data?
  - What systems did it come from?
  - What transformations happened to it?
  - How fresh and accurate is the data?
- About your analysis
  - Is your analysis reproducible?
  - Who did you get feedback from?

- About your finding
  - Do these findings exist in previous time periods?
  - Did you control for the differences in your data?

## **Responding to Possible Objections**

- Communicate any assumptions
- Explain why your analysis might be different than expected
- Acknowledge that those objections are valid and take steps to investigate further

## **Important Aspects to a Presentation**

- Define your purpose
- Keep it concise
- Have some logical flow to your presentation
- Make the presentation visually compelling
- How easy is it to understand