We’re starting soon

Please submit your responses for the Attendance Quiz 3. You will have 10 min to submit your answers once you start. Thanks!

MSA 8030 – Communicating with Data

Mark Jack mark.a.jack@gmail.com

October 27, 2024

Georgia State University | J. Mack Robinson College of Business

Robinson

Week 3 –
Team Presentations: Present Your Business Problem
Class Discussions: Translate Business Problems to Data Science problems

Mark Jack mark.a.jack@gmail.com

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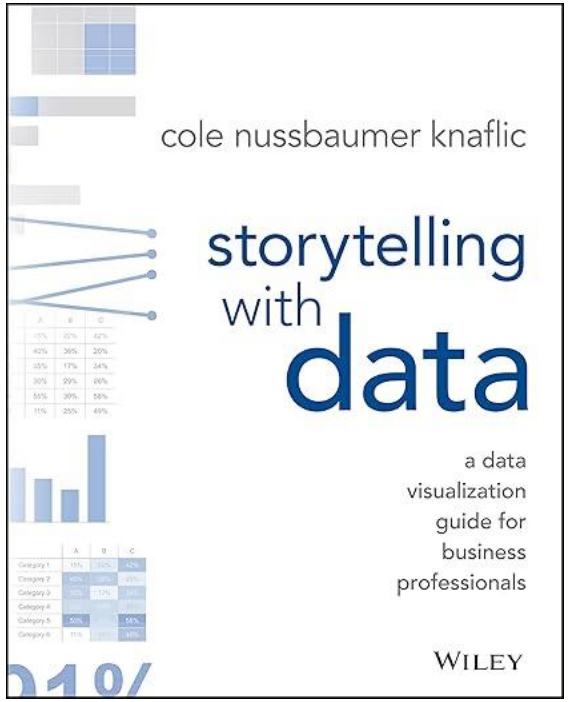
Course Resources

Recommended textbook:

***story telling with data - a data visualization guide for business professionals*, 1st edition**

by Cole Nussbaumer Knaflic (Wiley)



Github site:

CommunicatingWithData

https://github.com/mjgrav2001/CommunicatingWithData

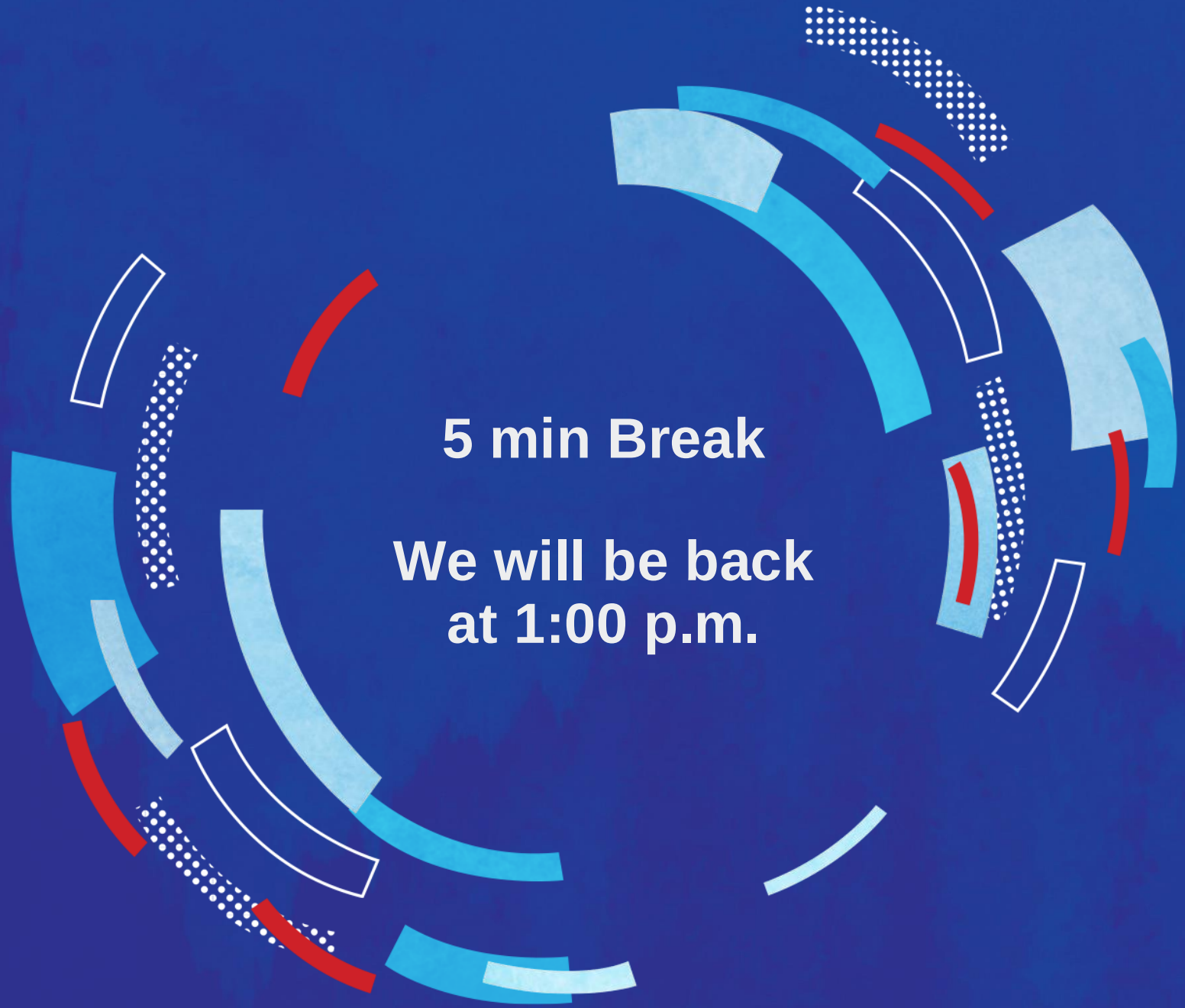
It is 12:10 p.m.

Let’s start
the Team Presentations
…

Team Presentations (45 min)

Team 1 – Wine Quality dataset
Team 2 – Airline Delay and Cancellation dataset
Team 3 – AirBnB (Kaggle) dataset
Team 4 – Wine Quality dataset
Team 5 – Microsoft Malware Prediction dataset
Team 6 – Water Potability of Plants dataset
Team 7 – LAPD Crime dataset

(presentations in no particular order!)



5 min Break

We will be back at 1:00 p.m.

Lecture 1 (30 min): How to Translate Business Problems to Data Science Problems

There are 3 steps to translating business problems to data science problems:

1. Understand & Define the problem
- *Frame the business problem*
- *Prepare for a decision*

2. Set analytic goals and scope your solution
- *Set objectives and define milestones*
- *Design minimum viable product*
- *Identify target metrics*

3. Plan the analysis
- *Plan your datasets*
- *Plan your methods*

Source: Ayotomiwa salau, Translate Business problems to Data science problems.
https://ayotomiwasalau.medium.com/translate-business-problems-to-data-science-problems-b1693d8f313a

Lecture 1: Understand and define the problem

Frame the business problem:

- Probe and ask the stakeholders/process owner questions
- When asking questions, make them as specific to the business and actionable as possible
- Prioritize the pain points
- Try to get a balanced perspective from stakeholders
- Collect as many viewpoints from as many different stakeholders who are vested in a solution to the business problem at hand as possible

Prepare for a decision:

- Consider the 'who, what, where, when, why' to create a map of decisions and outcomes
- Consider timing, i.e. what is the timeframe in which a decision could be made
- Clarify expectations for the stakeholders and understand the impact of your solution on the downstream
- Ensure the problem is solvable in principle
- Be able to formulate a quantifiable impact for users and quantifiable impact for stakeholders

Lecture 1: Set analytic goals and scope your solution

Set objectives and define milestones

- Define the path to a solution with the right granular milestone questions:
  - What analytics goal do you need to accomplish in order to claim you have found a solution?
  - What are the options for reaching those goals?
  - Which options are cost-effective?
  - How will you measure the extent to which your solution will address the business problem?

Design minimum viable product

- Allows you to provide value to your stakeholders in small increments
- Plan in sprints
- Typical journey: descriptive -> diagnostic -> predictive -> prescriptive solution

Identify target metrics

- Be able to quantify how successful your data science solution is in solving the business problem
- What are the trade-offs to various solution proposals?
- Find out the business value units i.e. in what unit of value your stakeholders think

Lecture 1: Plan the analysis

Plan your datasets

- What data is available and is that data sufficient?
- How difficult it is to obtain the data (public domain, costs)?
- What is the required format for the data, how much effort does it take to label the data?
- Which data can be acquired easily, which data needs additional effort to acquire?
- Can all the datasets be easily joined together?
- How many pieces of data do you need in order to decide whether the analysis is feasible?

Plan your methods

- **Identify un-suitable models first (e.g. would a black box solution suffice?)**
- **Keep constraints in mind (e.g. necessary compute resources?)**
- **Choose boring technology: 'Look for surprises in your data, not in your technology.'**
- **Very Important: Build things in a way that others can use them as easily as possible!**

Lecture 1 (30 min): How Can You Build Suspense and Tension In Your Presentation

When you create **tension** you make people *uncomfortable*, and when people are **uncomfortable** they want to do something about it. Create the right kind of tension in a presentation and you'll have everyone leaning in on the edge of their seat waiting for the resolution.

In the first few moments of your presentation you have the ability to lift the level of engagement in the room by creating **healthy tension.** Healthy tension is the gentle force that pulls people towards a desired end state.

Here's three ways you can do it:

1. **Raise the level of pain**– Highlight the ***problems*** so people want to change something. If you have a practical solution, take time to help people understand the real problem.

2. **Raise the level of curiosity**- Highlight the ***questions*** so people want to know something. If you want to educate people or give people an answer, then start by helping them ask the right question.

3. **Raise the level of expectation**- Highlight the ***vision*** so people want to be something. If you want to take people somewhere, paint a picture of what the future could look like if they decide to listen and contrast it with their current reality.

Lecture 1 (30 min): How Can You Build Suspense and Tension In Your Presentation

1. Use hooks and cliffhangers
2. Vary your pace and tone
3. Use silence and pauses
4. Use visuals and sounds
5. Use questions and answers
6. Use stories and anecdotes

Source: How can you build suspense and tension in your presentation through pacing and timing?
https://www.linkedin.com/advice/0/how-can-you-build-suspense-tension-your-presentation

2 min Break

We will be back at 1:30 p.m.

Group Activity (30 min): Teams brainstorm on next week's assignment - Translate Your Business Problem to A Data Science Problem

Brainstorm the topics just discussed in class with your team:

1. Understand and define the problem
- *Frame the business problem*
- *Prepare for a decision*

2. Set analytic goals and scope your solution
- *Set objectives and define milestones*
- *Design minimum viable product*
- *Identify target metrics*

3. Plan the analysis
- *Plan your datasets*
- *Plan your methods*

2 min Break

We will be back at 2 p.m.

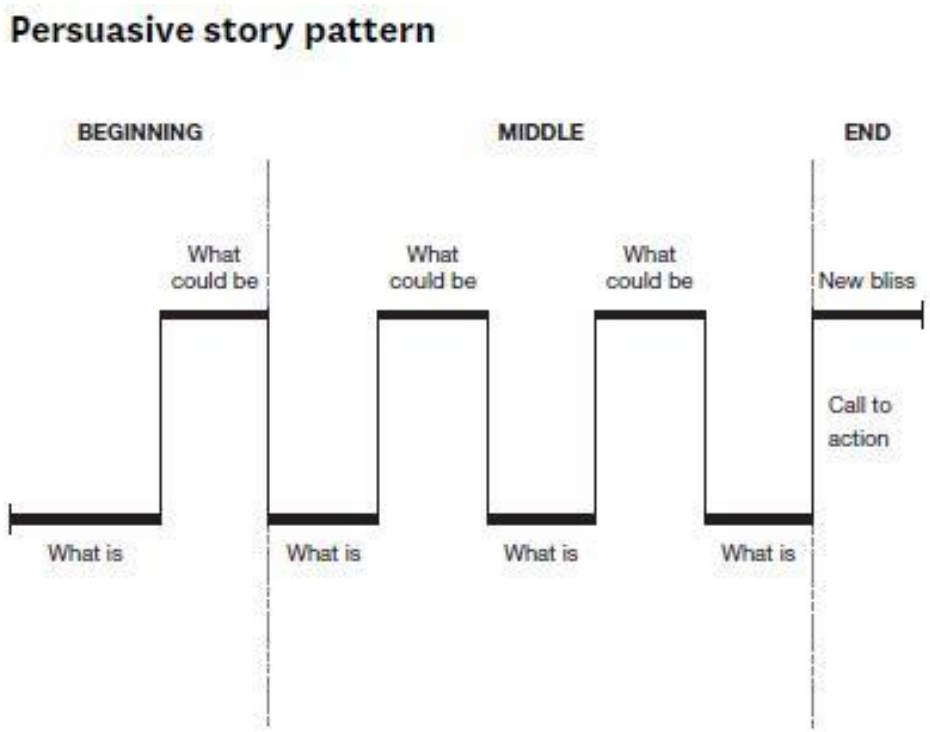
Lecture 2 (30 min): Storytelling With Data

Structure Your Presentation Like a Story
(dramatic, experiential, evocative, persuasive)

Craft the Beginning
- After you set that baseline of **what is,** introduce your vision of **what could be.**
- The gap between the two will throw the audience a bit off balance.

Develop the Middle
Keep playing up the **contrast** between what is and what could be.

Make the Ending Powerful
Include a call to action **(**don't end with a burdensome list of to-dos) which create a **new bliss.**



Lecture 2 (30 min): Storytelling With Data

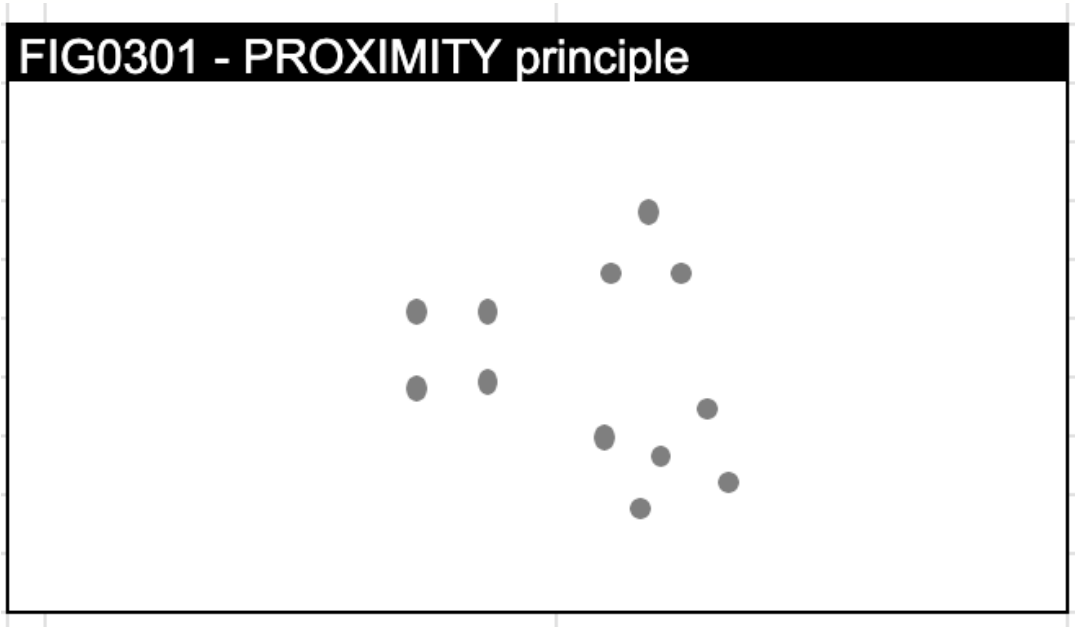
10 Ways to Ruin a Presentation

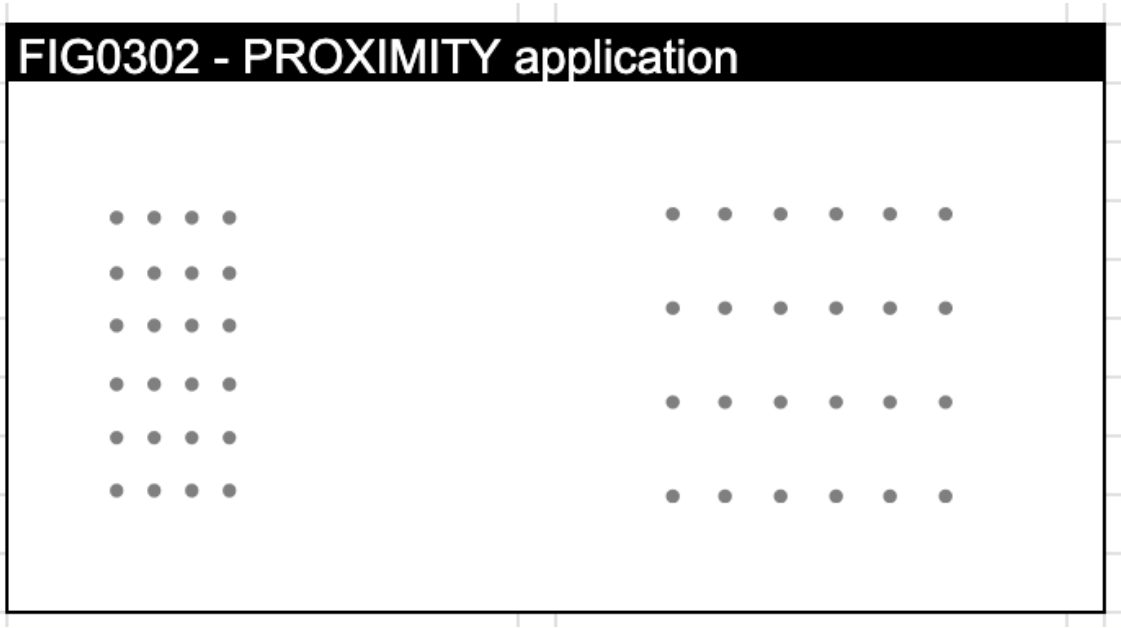
1. Take a really long time to explain what your talk is about.
2. Speak slowly and dramatically. Why talk when you can orate?
3. Make sure you subtly let everyone know how important you are.
4. Refer to your book repeatedly. Even better, quote yourself from it.
5. Cram your slides with numerous text bullet points and multiple fonts.
6. Use lots of unexplained technical jargon to make yourself sound smart.
7. Speak at great length about the history of your organization and its glorious achievements.
8. Don’t bother rehearsing to check how long your talk is running.
9. Sound as if you’re reciting your talk from memory.
10. Never, ever make eye contact with anyone in the audience.

Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

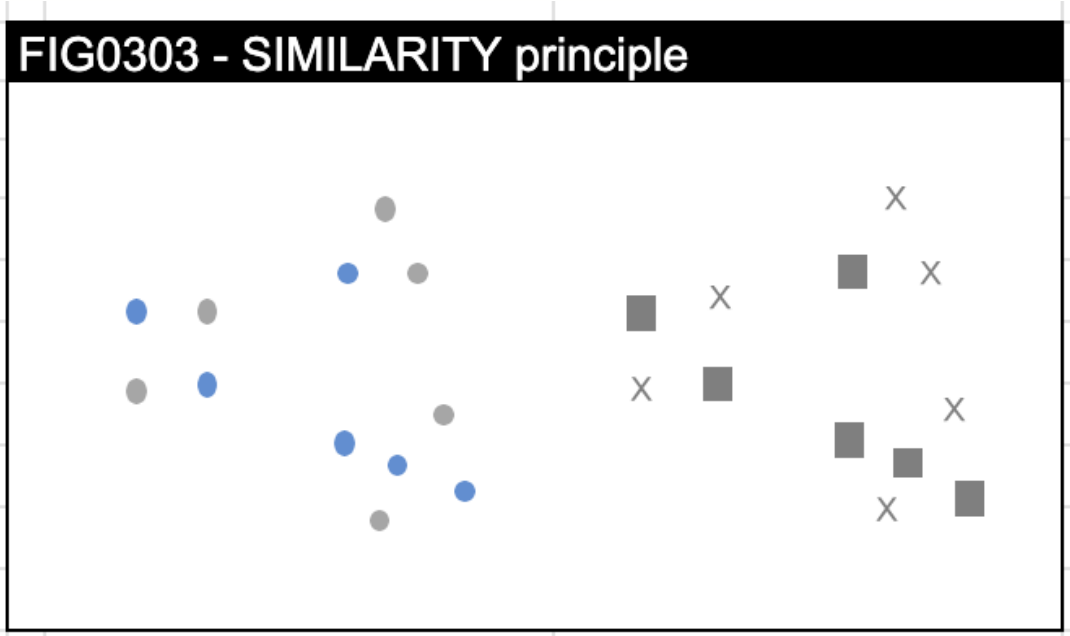
6 ‘gestalt’ principles:

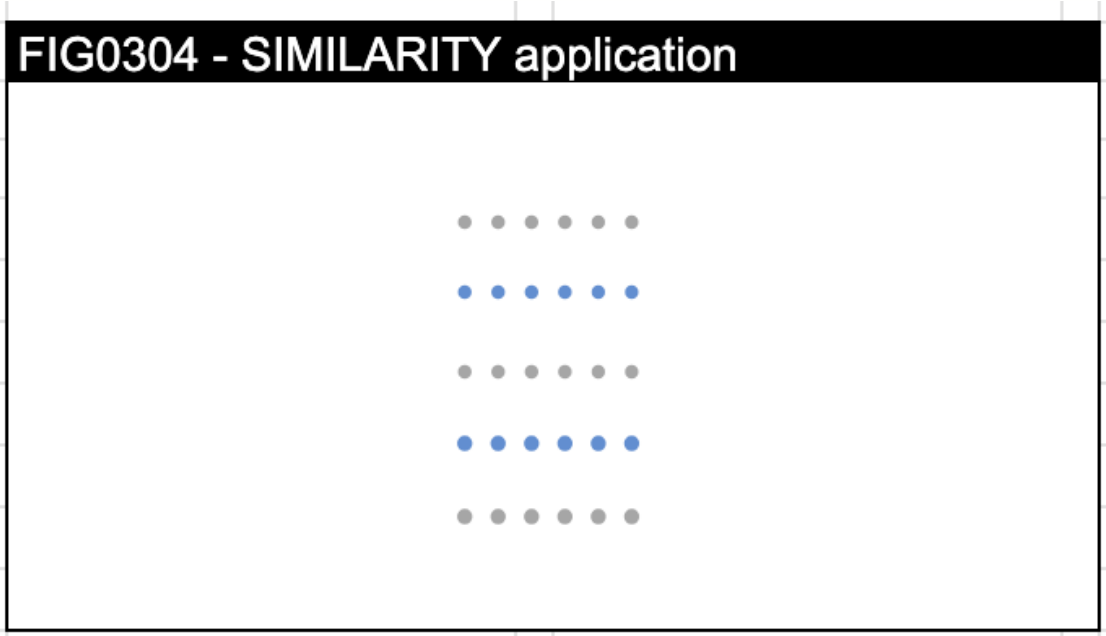




Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations



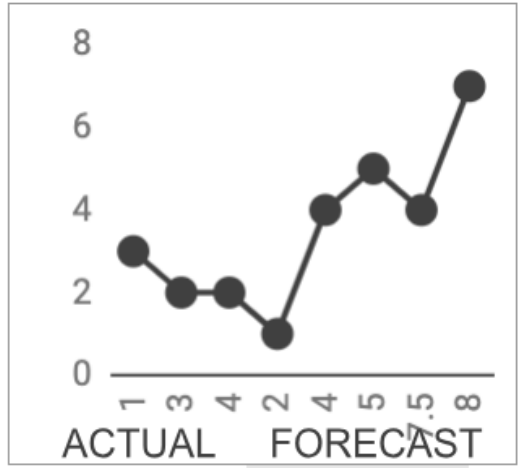


Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

FIG0305 - ENCLOSURE principle

FIG0306 - ENCLOSURE application

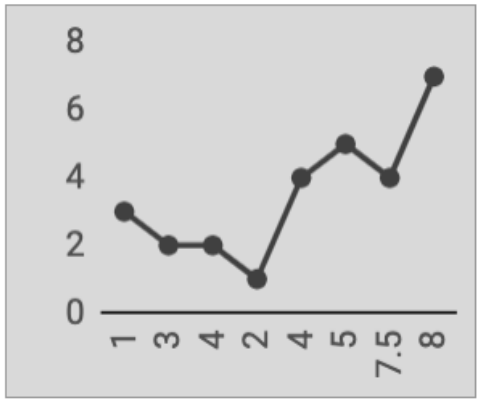


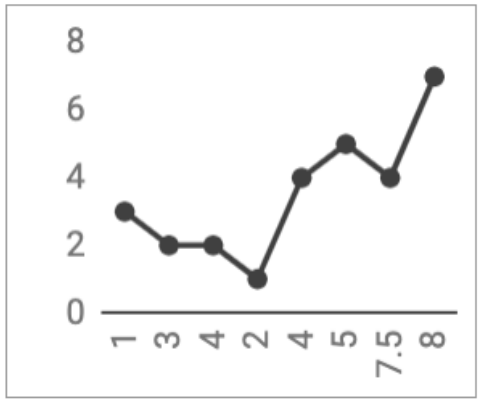
Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

FIG0307 CLOSURE principle

FIG0308 CLOSURE application





Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

FIG0309 - CONTINUITY principle

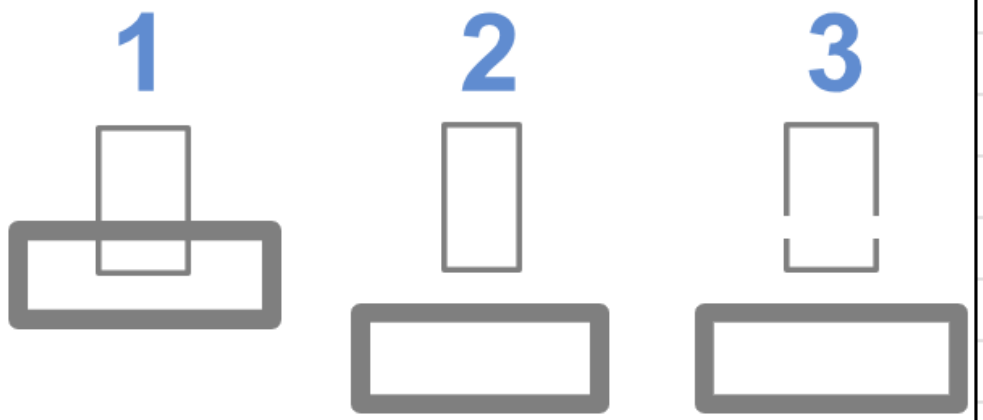
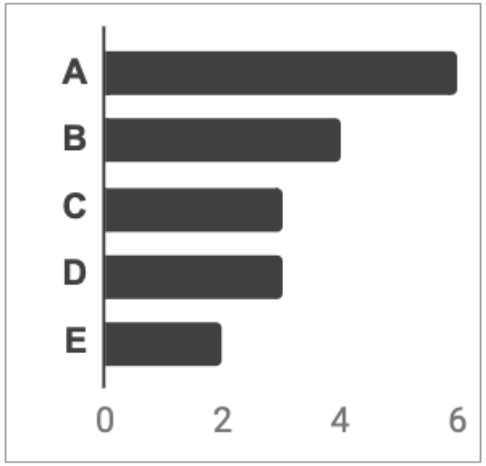


FIG0310 - CONTINUITY application



Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

FIG0311 - CONNECTION principle

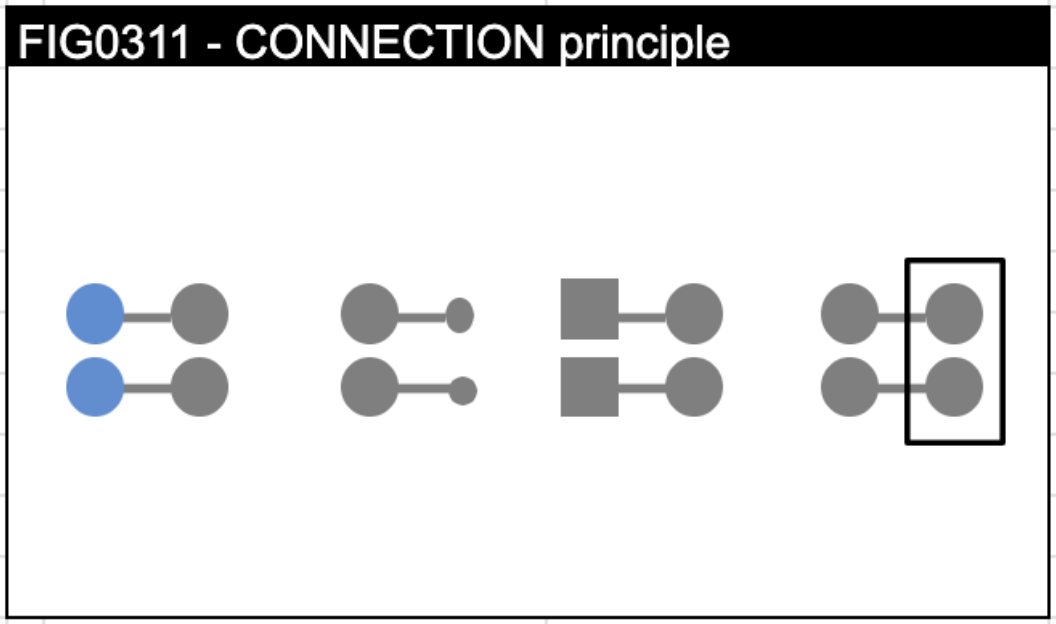
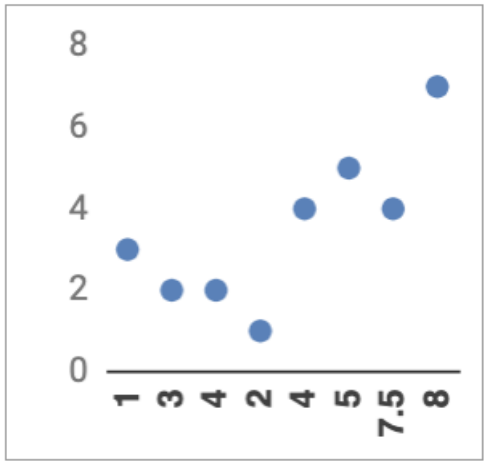
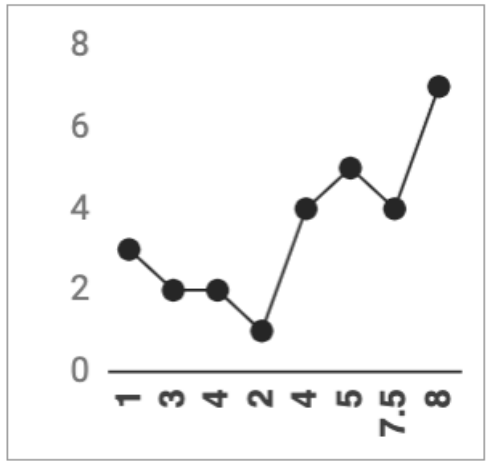


FIG0312 - CONNECTION application





Lecture 2 (30 min): Storytelling With Data

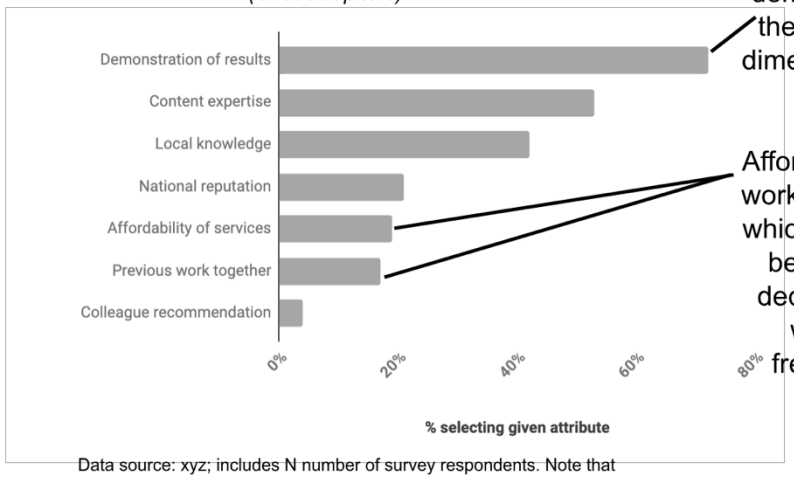
Remove Clutter in Your Visual Presentations

Effective use of text alignment with your chart:

FIG0313

Demonstrating effectiveness is most important consideration when selecting a provider

In general, what attributes are the most important to you in selecting a service provider?
(Choose up to 3)



Survey shows that demonstration of results is the single most important dimension when choosing a service provider.

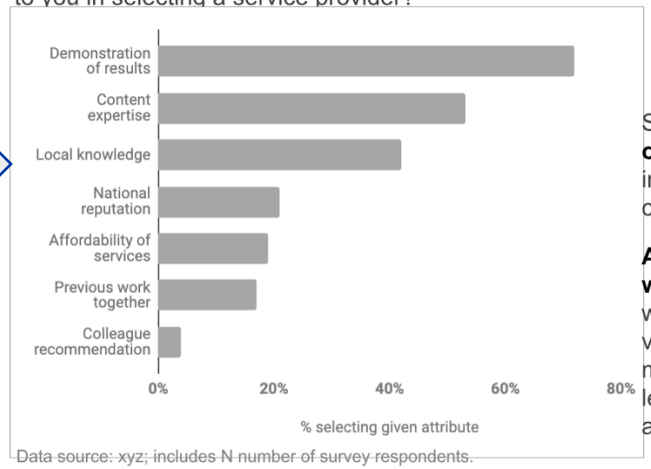
Affordability and experience working together previously, which were hypothesized to be very important in the decision making process, were both cited less frequently as important attributes.

Data source: xyz; includes N number of survey respondents. Note that respondents were able to choose up to 3 options.

FIG0304

Demonstrating effectiveness is most important consideration when selecting a provider

In general, **what attributes are the most important** to you in selecting a service provider?



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Affordability and **experience working together previously**, which were hypothesized to be very important in the decision making process, were both cited less frequently as important attributes.

Data source: xyz; includes N number of survey respondents.
Note that respondents were able to choose up to 3 options.

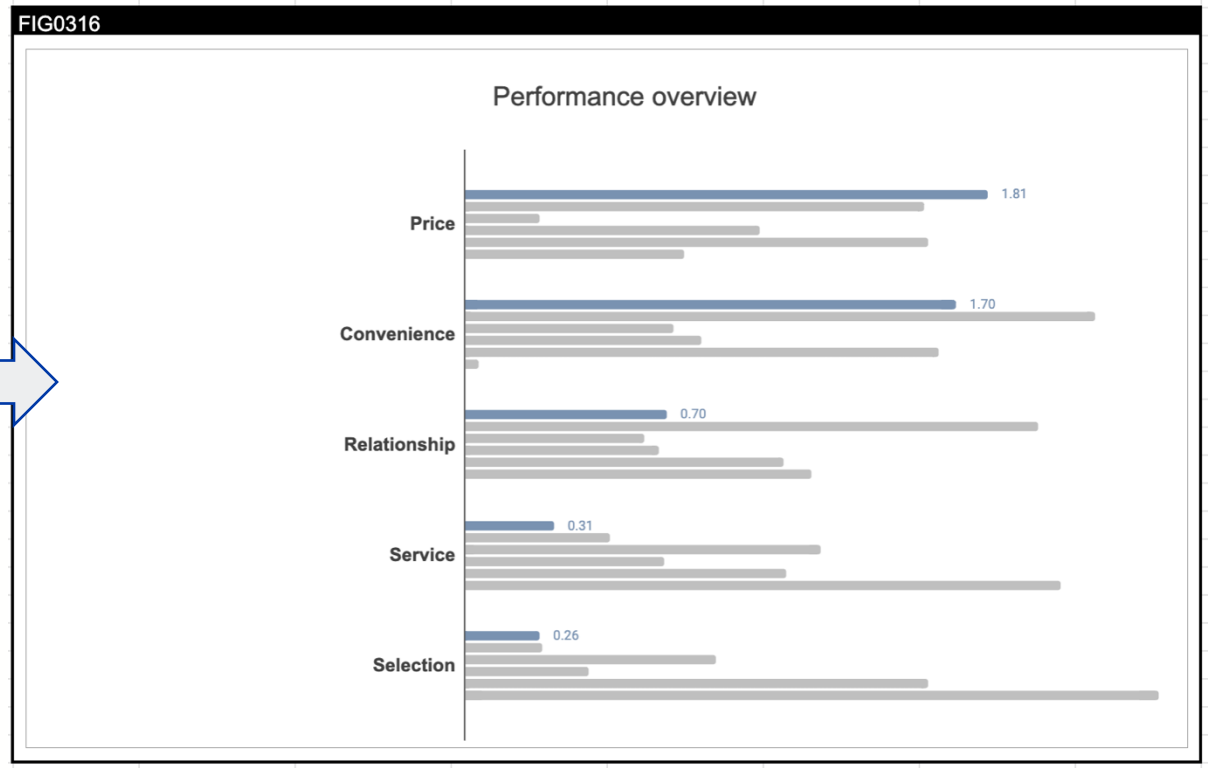
Lecture 2 (30 min): Storytelling With Data

Remove Clutter in Your Visual Presentations

Effective use of color with your chart:

FIG0315

FIG0316

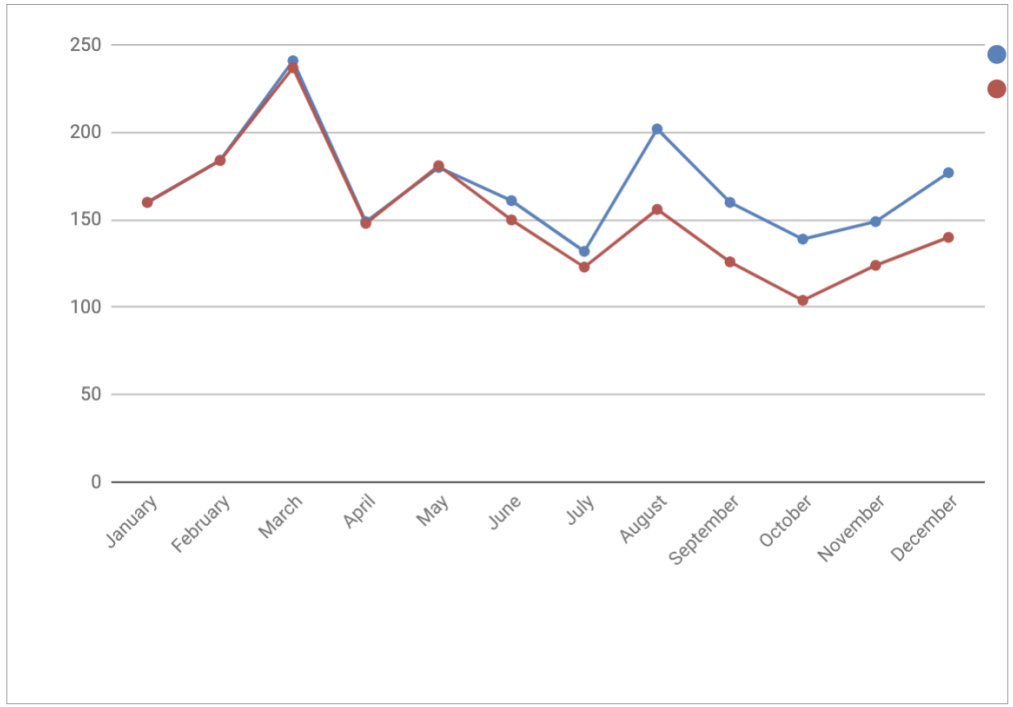


Lecture 2 (30 min): Storytelling With Data

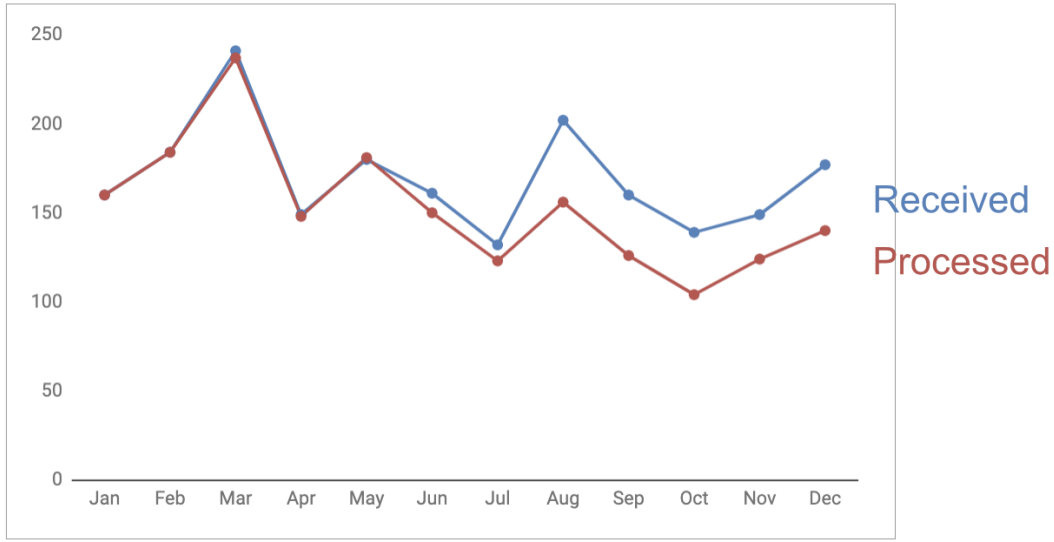
Remove Clutter in Your Visual Presentations

Effective use of labeling:

BEFORE



AFTER



Lecture 2 (30 min): Storytelling With Data

Helpful online resource:

choose an effective visual
with the
SWD CHART GUIDE

https://www.storytellingwithdata.com/chart-guide


Class ends at 2:30 p.m.

Course Schedule

#	Topic and Objectives
1	**Intro & Getting Started** • Course Overview (relevance, examples, etc.) • Market-Ready-to-do List (MRTDL) by Career Advancement Center • Pick a dataset (Datasets will be provided by instructor on first day of class. If you already have formed a team of 4 students to collaborate and work together and want to use your own dataset, this needs to be vetted and approved by the instructor. Examples: something you are working on from another project, Walmart data on Kaggle, synthetic data from Synthea, etc.) • Explanation of peer-to-peer evaluation of presentations every week • Instruction: Exploratory data analysis • Assignment: **Prepare 1-minute "describe your dataset" presentation**
2	Start with Presentations: (present what was assigned in the previous class) **Understand the Business (and core business processes)** • Activity (for a specific case or example business): Describe the business for an example business (inputs, activities, outputs/metrics), develop a simple flowchart, identify opportunities • Instruction: Understanding the business problem, extracting the use case(s) • Assignment (for your selected business): **Prepare 3-minute presentation that describes the business, core business process(es), and opportunities for your selected business**
3	Start with Presentations: (present what was assigned in the previous class) **Identify a Business Problem (and why it needs to be addressed)** • Activity (for a specific case or example business problem): Developing persuasive arguments; Create tension with a visualization (draft) • Instruction: Story telling with data - visualizations • Assignment (for your selected business problem): **Create a 3-minute "tension" presentation; only 1 visual**

Course Schedule

4	Start with Presentations: (present what was assigned in the previous class) **Develop a Solution Pitch (for solving the identified business problem)** • Activity (for an example business problem): Big idea, exec summary, peer review • Instruction: Feasibility study, selection of final use case (big idea) • Assignment (for your selected business problem): **Create a 1-minute pitch (includes business overview, tension, and solution)**
5	Start with Presentations: (present what was assigned in the previous class) **Provide a Progress Update (for an ongoing project)** • Activity (for your selected solution): Strong visualizations, exploration, status, revisions, issues, lessons learned • Instruction: Data exploration and feedback loops with business stakeholders • Assignment (for your selected solution): **Prepare a 5-minute presentation; 5 slides** (excluding title slide); **3 visualizations**
6	Start with Presentations: (present what was assigned in the previous class) **Planning a Final Presentation and Final Report (for a completed project)** • Activity (for your project): 1st draft of headlines only and main messages per slide; **Python Notebook for technical audience** and **Word document for leadership**: clear connections to final presentation, i.e., same structure/order, etc., including a narrative in the final report • Instruction: Technical writing skills • Assignment (for your project): **Complete final presentation and reports; 7-minute presentation; 5-7 slides** (excluding title slide); appendix if required
7	**Final Presentations** (and final reports, notebook and Word document) are due