Creative Data Visualizations with D3.js

Shirley Wu

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Class times & location

Sat. 2/24: 12–4:30PM

Sun. 2/25: 12–5PM

Sat. 3/2: 12–2:30PM

Room 426 (formerly Residents' Office)

Office hours & location

Tue. 2/27: 2–4PM

Wed. 2/28: 3–5PM

Thu. 2/29: 1:30–3PM

Via Zoom. If you cannot make any of the above times, email me at least 3 days in advance and we'll find an alternate time.

Book office hours here

Course description

Data visualization is the practice of using visual elements to surface patterns and signals within a dataset, oftentimes for communicating data stories or exploring business insights. D3.js is a JavaScript library for creating dynamic, interactive data visualizations on the web (think of it as p5.js's data-driven cousin!). It is a powerful tool used around the world within newsrooms and corporations, and also by artists and creatives for self-expression.

In this 2.5 day workshop, we will dive into the core principles of D3.js with hands-on exercises, then explore more intermediate and advanced topics and how they can be applied. These topics will be augmented with readings around information design, and end with a mini-project to apply our learnings.

Recommended prerequisites: basic Javascript and data structures (Arrays & Objects)

Course Syllabus

Creating data visualizations for the web typically takes a variety of skills: data collection and analysis, information design, coding, and even storytelling. Because we have such limited time together, we'll concentrate primarily on design and code.

Day 1 (Saturday 2/24, 4.5 hours)

- Mini design exercise
- Intro to SVG & D3.js
    - SVG paths & transforms
    - D3 selection & data binding
    - D3 scales
- Where to find data

Assignments:

- Readings & watchings (~30min):
    - What Questions to Ask When Creating Charts by Lisa Charlotte Muth
    - Marks and Channels (Ch 5), Visualization Analysis & Design, 2021 by Tamara Munzner on Youtube
- Find a data visualization you enjoy, then blog about what specifically attracts/appeals to you about it, keeping the above readings in mind

- Blog about the topic you and your partner would like to build your mini-project about, and acquire the data

Email me your blog post before start of Day 2.

Day 2 (Sunday 2/25, 5 hours)

- Mini design exercise, reprise
- How to think about data
    - Data & chart types
- How to communicate with data
    - Marks & channels
    - Visual metaphors
    - Legends, titles, annotations
- How to prep data

Assignment

- Complete mini-project, document the process
- Research The Pudding and prepare one question for Caitlyn

Day 3 (Saturday 3/2, 2.5 hours)

- Mini-project presentations
- Guest presentation: Caitlyn Ralph (Studio Director, The Pudding)
- Celebrate with cookies!

Mini-project (due beginning of final class)

Working in pairs, decide on a topic you're excited about, and whether you'd like to concentrate on DESIGN+CODE/MAKE or DATA+DESIGN.

DESIGN+CODE/MAKE

1. Craft your own very small dataset, no more than 4 columns and 20 rows.
2. Quickly sketch 2–3 design ideas with color pencils or markers.
3. Create the data visualization with the tools you're comfortable with and/or excited about: P5.js, D3.js, Illustrator, digital fabrication.

Get the visualization to 80% polish, but no need to sweat the details.

DATA+DESIGN

1. Find a dataset on the internet that you're interested in.
2. Clean and explore dataset with the tools you're comfortable with: Excel, R, Python, even ChatGPT (but make sure to document this).
3. Create a refined sketch of the visualization you have in mind, and a plan for how you'd complete it.

With either option, make sure to **go with a topic and a curiosity (which translates into a dataset) that you're excited about**, and preferably intimately familiar with.
A note on ChatGPT: we're all aware of how ChatGPT can be both a powerful and dangerous tool, and I'm a firm believer in thoroughly understanding a tool to know its strengths and limits. I've found it to be very convenient for data cleaning and exploration, though with the potential for very subtle and thus nefarious errors. Feel free to explore it, but be very vigilant and make sure to document where and how you used it.

Presentation

In the final class, you will have **5 minutes to present**, and 5 minutes to get feedback. We will have an exciting guest to give feedback on your projects. Note: we're not looking for perfection, but instead we're interested in:

- The motivations behind the topic and dataset you chose
- Your thought process behind the design decisions you made
- Any tech you used?

- What you learned from the process

And remember, the most important thing is to have fun!

Statement of Academic Integrity

From the TSOA Policy and Procedures Handbook (https://tisch.nyu.edu/student-affairs/important-resources/tisch-policies-and-handbooks) : Plagiarism is presenting someone else's work as though it were your own. More specifically, plagiarism is to present as your own:

- a sequence of words quoted without quotation marks
- a paraphrased passage from another writer's work
- ideas, sound recordings, computer data, or images composed or created by someone else.

Accessibility Statement

Academic accommodations are available for students with documented disabilities. Please contact the Moses Center for Student Accessibility at 212-998-4980 for more information.

Wellness Statement

Your health and safety are a priority at NYU. If you experience any health or mental health issues during this course, we encourage you to utilize the support services of the 24/7 NYUWellness Exchange 212-443-9999. Also, all students who may require an academic accommodation due to a qualified disability, physical or mental, please register with the Moses Center 212-998-4980. Please let your instructor know if you need help connecting to these resources.

Title IX Statement

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- More Discussion in a Google Doc
- And in a PDF
- Syllabus Review Workshop