

Fall 2018 - JR324 Data Visualization

Mondays & Wednesdays 4pm – 5:45pm. Fall 2018.
Walker 633. 4 Credits.

[Course Calendar](#)

[Assignment Descriptions](#)

[Class Blog](#)

[Edit the Class Blog](#)

[Catherine D'Ignazio](#)

Office Hours:

Mondays 2-3pm at the Engagement Lab 160 Boylston Street, 4th Floor

or

Wednesdays 2-3:45pm in Walker 611

And by appointment.

Get in touch: Outside of class please contact me via [email](#) or Twitter ([@kanarinka](#))

Course Information

Course Description

This course introduces concepts, methods and practices of data visualization and data storytelling for journalism and civic media graduate students. Data journalism is an emerging field of practice that ranges from the dazzling interactive graphics of the New York Times to the consistent, watchful reporting of sites like Homicide Watch. In this course, students learn to adopt a "data-mindset" and reflect on how telling stories with data can help advance (and occasionally obscure) public understanding. Students will learn how to find and create data sets for their stories, how to analyze data (including some basic scripting and coding) and how to present data in a variety of ways. We will also discuss privacy, verification, ethics and some of the other thorny issues that arise with data reporting. Some experience in HTML and coding is helpful but not required.

The Fall 2018 version of this course is going to be focused on working with two external partners on a project funded by the Online News Association (ONA). We will be partnering with MuckRock, a non-profit data & news organization that helps journalists and others undertake FOIA requests, as well as the Boston Institute for Nonprofit Journalism (BINJ). While we learn about issues relating to data journalism, we will also learn about issues related to *firearms sales and the connection to politics in the state of Massachusetts*. The final projects that you produce for this class will be undertaken with mentorship provided by both partners and have a chance of being published on the BINJ website as part of a special series.

Course Learning Objectives

Students will:

- Discuss and evaluate numerous cases of data journalism & visualization.
- Discuss ethical issues around data collection and presentation, and apply strategies for counteracting harmful stereotypes in their own work.
- Explore a variety of data tools, and select the right presentation tool for a particular story and audience.
- Create a compelling, data-driven news story through finding, verifying, and analyzing a civic data set.
- Experiment with the creative frontiers of data journalism by working with external community partners.

Course Requirements

This is a hands-on studio course and we will do a lot of peer production of knowledge, so your participation and presence is essential to making it a success. This course is designed as a 4-module arc to get you ramped up on data concepts, tools and processes in a single semester. Here's a description of these modules:

1. **Getting Started** - In this set of classes we get acquainted with examples and case studies and establish a common vocabulary for evaluating data visualizations.
2. **Finding, Cleaning and Exploring Data** - In this set of classes we look at how and where to source data. We learn basic data science concepts and tools for cleaning, combining and analyzing data sets. We also look at some of the privacy and ethical issues around personal data. Starting with this module, all of your assignments are oriented towards your final project.
3. **Presenting and Publishing Data** - In this series of classes, we review human perception and visual processing, as well as common forms of quantitative data presentation. We dive into tools for data visualization and talk about reproducible research.
4. **Your Group's Final Data Project** - The final module of classes is focused on telling your data story and preparing your design document that details your design process and intended audience. You will create a data-driven narrative with [very specific guidelines](#).

Tech Track

You will notice that some assignments have extra additional steps for people on the "Tech Track". You do not need to have a technical background to do the Tech Track, just the motivation to put in the time. If you do the "Tech Track" you will gain a better understanding of some of the more technical tools and coding languages involved in data analysis and visualization. It will be extra work but you will also gain extra skills if you devote the time and support each other. Those on the Tech Track need to:

- Do the regular assignments

- Do the Tech Track additions to the assignments
- Do a 10-minute "demo" of something you have learned on the Tech Track to the class in November. Topics may include: Versioning with Github, HTML & Javascript basics, Scraping with Python, Machine Learning and D3.js.

Those who complete all requirements for the Tech Track will receive 5 extra points added to your final grade (this is significant!!!)

Texts and Other Materials

- [The Curious Journalist's Guide to Data](#) by Jonathan Stray, 2016.
- [The Art & Science of Data-driven Journalism](#). Report from the Tow Center for Digital Journalism, May 2014.
- Other readings, podcasts and videos provided on a class by class basis.

Required Software

- Tableau – for data visualization. Use the academic license key provided on the [Canvas home page](#) for this course. Tableau's [data visualization software](#) is provided through the Tableau for Teaching program.
- Microsoft Excel or Google Sheets – for data analysis.
- [OpenRefine](#) – for data cleaning.

Assignments, Grading & Assessment

Assignments are weighted by group:

Group	Weight
Participation & Attendance	10%
Data Process Assignments	20%
Data User Guide Assignments	20%
Group Midterm	10%
Final Project Assignments	40%
Total	100%

The class is organized around a number of small assignments that are graded Pass/Fail. Many of these lead up to larger assignments graded on a point scale, including:

- Data User Guide - 20% of grade
- Data Analysis Take-home Test - 10% of grade
- Final Data Project (Group Project) - 40% of grade

Your final data project is worth 40% of the grade and is completed as a group of 3-4 people. The reason for doing this project as a group is that data journalism projects are rarely undertaken as solo projects – it is important to learn how to work with others and coordinate various aspects of the project.

Calendar

Module 1: What is Data? Developing a Vocabulary

Wed 9/5 - Introduction & Warm-up

Introductions & syllabus. Data warm-up with pompons. Introductory activity with [DataBasic](#).

Mon 9/10 - Introduction, Part II

Watch: [David McCandless on Data Visualization](#), [Giorgia Lupi on Finding the People in Data](#), [Joy Buolamwini "Poet of Code" on Racial Bias in Data](#)

Listen: [Data Journalism at ProPublica with Scott Klein](#)

Community agreements. Writing response to TED talks. Go over expectations for [writing on the web](#) and [technology information seeking](#). "What is Data?" Introductory lecture

Wed 9/12 - Race, Gender, Ethics & Numbers

Due: [Getting into the Flow assignment](#)

Read:

1. [The Numbers Don't Speak for Themselves](#) By Catherine D'Ignazio & Lauren Klein
2. [What is Racism? & "New" Racism](#) by Robin DiAngelo

Tipsheets:

1. [Common Mistakes Journalists Make When Writing about Numbers](#)
2. [Quick Tips on Writing With Statistics](#)
3. [Numbers, Stereotypes and Equity Tipsheet](#)

Discuss Readings. Workshop on equity (race, gender, more) + writing with numbers. How can you make sure that numbers don't reinforce stereotypes?

Mon 9/17 - Data Storytelling in the Age of Big Data

Due: [Comparing By the Numbers Assignment](#)

Watch: [Weapons of Math Destruction](#) by Cathy O'Neill

Read:

- [The Rise of Big Data](#) by Kenneth Cukier and Victor Schoenberger

- [Machine Bias](#) by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica
 - [The Art & Science of Data Journalism, Sections I-IV](#) (pp. 1-44)
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Wed 9/19 - Field Trip. Optional but Highly Recommended If You Want to See Some Cutting Edge Work.

Browse: [Fathom Design Studio's many projects](#)

Wed 9/19 - Field Trip to Fathom - 10am - 11:15am. Fathom is located at a 17-minute walk from class - [300 Cambridge St.](#) Floor 5. Boston, MA 02114. (857) 753-4198

Wed 9/19 - Introduction to Community Partners – MuckRock & BINJ

Read:

- Read at least one of these articles on MuckRock:
 - [What MuckRock does](#)
 - [MuckRock and DocumentCloud merge](#)
 - [The types of collaborations MuckRock does](#)
- Read at least one of these articles on BINJ:
 - [BINJ on Nieman Reports](#)
 - [The Origins of BINJ](#) (short article, then browse the rest of this toolkit)
 - Browse [BINJ feature stories](#)
- Read but DO NOT SHARE: [Forthcoming BINJ feature about firearms sales](#)

Debrief about field trip. Learn about the work of MuckRock & BINJ and how we will be collaborating with them.

Mon 9/24 - Our First Charts, part I

Do: Install Tableau (see [installation link and license key](#))

Watch: [Tableau 10 Essential Training](#) from Introduction to 3. Managing Tableau Worksheets

Watch: Lynda.com Excel Bootcamp [Excel for Mac 2011 Essentials \(Section 1 - Getting Started, 2 - Managing Workbooks, 3 - Managing Worksheets & 6 - Working with Charts\)](#)

Workshop creating a chart in Excel and Tableau.

Wed 9/26 - First Charts, part II

Watch: [Everything we know about how humans interpret graphics](#) by Kennedy Elliot

Browse/Read:

1. [Exploratory vs Explanatory Data Analysis](#)
 2. [The Data Visualization Catalogue](#)
 3. [Tips for Creating Data Visualizations for this Class](#)
-

Module 2: Finding, Cleaning & Analyzing Data

Mon 10/1 - Finding Data

Due: [First Chart Assignment](#)

Install: [Table Capture Extension for Chrome](#), [Listly.io](#)

Read: [What I've Learned from Two Years Collecting Data on Police Killings](#), [Finding Data](#), [Data Journalism Handbook: "Getting Data"](#)

Pair & share to evaluate charts. Group workshop on working towards the Data User Guide Assignment. Discuss readings. Lecture on finding data. The Open Data Movement. Group brainstorm on finding data -- connecting data to real-world institutions. Demo open data portals & other tools. **Data Scavenger Hunt!** Work in groups to go on a data scavenger hunt.

Wed 10/3 - Towards the Data User Guide

Read:

- [State Police trooper admits getting free guns, is cooperating in criminal probe](#) (Globe)
- [Mass. Gun Shops Sue AG Healey Over Copycat Assault Weapons Ban Notice](#) (WBUR)
- [Mixed reaction to return of military gear for police](#) (Worcester Telegram)
- [Fire Sale](#) by Chris Faraone and Curtis Waltman

Browse: [This list of data sets](#) enough to have an opinion about your top two choices delving into further:

Form groups for the data user guide and get started on creating it.

Mon 10/8 - NO CLASS - Columbus Day

Tues 10/9 - Data User Guides - Peer reviews & Open Workshop

Due: [Data User Guide \(Group Project\)](#) - First Draft

Data User Guide peer reviews & open workshop to work on them.

Wed 10/10 - Cleaning Data

Do: [OpenRefine Tutorial](#)

Read:

- [Basic Steps in Working With Data](#)
- [The Curious Journalist's Guide to Data](#) pp. 36 - 76

Watch: [Roger Peng's lecture on Raw and Processed data](#)

Download & Install: [OpenRefine](#)

Workshop: Cleaning Data in OpenRefine.

Fri 10/12 - Emerson College Teach-in on Race

I highly recommend you attend this important campus conversation. See [the full schedule here](#).

Extra credit: Attend at least one session from the teach-in and write a 500-word reflection on the topic/s: *How do issues of race come up in data? How can data journalists work towards racial justice?* This extra credit can either be used to replace one class absence or to add 5 extra points to any one assignment (excluding the final project).

Mon 10/15 - Analyzing Data

Due: [Data User Guide \(Group Project\)](#) - Final Draft

Read: [How to analyze unfamiliar data](#), [Finding a Story worksheets](#), [5 Types of Stories](#)

Watch: [Lynda.com video on Excel Pivot Tables](#) (Just watch Part 9 on Pivot tables), [Lynda.com video on GoogleSheets Pivot Tables](#)

Data Exploration Features in Excel: Sorting, Filtering, Pivot Tables. Explain Data Exploration Journal assignment.

Read: [How to Not Be Misled by the Jobs Report](#)

Watch: [Tableau 10 Essential Training](#) from 4. Creating Custom Calculations to 11. Conclusion
In-class workshop to analyze & explore data through pivot tables and visualizations.

Wed 10/17 - FOIA Workshop with MuckRock

Learn how to make FOIA requests. Continue work on the Stop & Frisk Data Analysis.

Mon 10/22 - CLASS CANCELLED

Due at midnight: [Data Analysis Take-home Test](#)

Module 3: Data Presentation & Publication

Wed 10/24 - Visual Perception

Read: [Visual Thinking for Design, Chapter 2: "What we can easily see"](#) & [The Curious Journalist's Guide to Data](#) pp. 77 - 111

Quick Reads: [Storytelling with data - quick tips](#), [Which Tools When? Quick Tips Worksheet](#)

Discuss final projects & determine ideas. Determine top 3 tool choices for [Expert Reviews](#).
Visual perception workshop. Final project groups.

Data User Guide Links:

- [MA Gun licenses](#)
 - [Gun Money in Politics User Guide](#)
 - [Dept of Defense 1033 Program to Gift Military Equipment to Police Depts](#)
 - [Use of Force Records in MA](#)
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Mon 10/29 - FOIA workshop & Brainstorming final projects

Read for Stop & Frisk Background: [ACLU Report on Stop & Frisk](#) in Boston, [Initial Police Response](#)

Workshop to file FOIA requests. Work in groups to brainstorm final projects.

Wed 10/31 - Remote Class

Due: [Stop & Frisk Data Analysis](#)

Due at midnight: [Viewing Response - The Human Face of Big Data](#)

Our class will not meet in person today. Please watch [The Human Face of Big Data](#) on YouTube and submit a 300-500 word viewing response reflection to [the assignment on Canvas](#) that answers these questions:

- What do you think are the top 3 critical issues for a world of big data?
- What role do you think journalists can play in relation to big data?

Bonus points for incorporating prior class readings into your reflection.

Mon 11/5 - Visualization Bazaar & Project Consultations with BINJ

Due: [Expert Reviews](#)

Reading: [A Tour through the Visualization Zoo](#) (Will give you a sense of more sophisticated forms of viz), [What's a Boxplot?](#); [What's a Histogram?](#) (only up to section "Normalizing a Histogram"); [The Art & Science of the Scatterplot](#)

Browse: [Tactical Tech's Visualization Tool-picker](#), [DataViz Catalogue](#)

Students give 5-minute demos of the tool they are an expert in using their data set/s. Tools include: exhibit, Timeline.js, Tableau, CartoDB, StoryMap, et al. Groups step out for meetings with Chris Faraone from BINJ.

Meets with Chris	Presents
4:10pm - 4:30pm Group 1: Celine, Annika, Andrew, Daysia	4:10pm - Noel 4:15pm - Olin 4:20pm - Autumn 4:25pm - Max 4:30pm - Riane
4:35pm - 4:55pm Group 2: Minh, Alisha, Selah, Adrien, Amanda	4:40pm - James 4:45pm - Abby 4:50pm - Madison 4:55pm - Tay
5pm - 5:20pm Group 3: Noel, Olin, Autumn, Max, Riane	5pm - Celine 5:05pm - Annika

	5:10pm - Andrew 5:15pm - Daysia
5:25pm - 5:45pm Group 4: James, Abby, Madison, Tay	5:20pm - Minh 5:25pm - Alisha 5:30pm - Selah 5:35pm - Adrien 5:40pm - Amanda

Wed 11/7 - Web Maps Workshop

Do: [Sign up for the GitHub Student Developer Pack \(free access to CARTO with this link\)](#)

Do: [CARTO Online Mapping Course for Beginners](#)

Watch: [Mapping Tips from a Cartographer](#)

Read: [Putting Data Into Context](#)

Web Mapping & CARTO Workshop. Learning about shapefiles and how to place them and color them in CARTO. Time to further group project.

Mon 11/12 - No Class - Veteran's Day Observed

Module 5: Your Data Story

Wed 11/14 - Pitch Story Ideas for Feedback

Due: [Final story pitches & project plan](#)

Mon 11/19 -.Making Better Charts: Monsters, Titles, Captions, Callouts, Sources

Read:

1. [How to make better visualizations](#)
2. [Intro to Design](#) from ProPublica

Browse: [The Noun Project](#), [Wikimedia Commons](#)

Workshop on titles, captions, callouts, sizing and overall graphic communication.

Wed 11/21 - NO CLASS - Thanksgiving break

Mon 11/26 - BINJ

Chris comes and helps with final story shaping and preparation for production.

Wed 11/28 - Color

Watch: [Intro to Color for Art & Design Playlist](#) (~40 mins)

Read: [Your Friendly Guide to Colors in DataVis](#)

Workshop on color in maps and visualizations.

Mon 12/3 - Open Workshop

We will have an open workshop class for making progress on your group projects & reviewing your groups' data explorations to date.

Wed 12/5 - Open Workshop

We will have an open workshop class for making progress on your group projects & reviewing your groups' data explorations to date.

Mon 12/10 - Final Presentations

Due: Final Data Project - written & graphic components only, for presentation

Final project presentations due. Invited guests to give critical feedback.

Guest reviewers: MuckRock, BINJ, Paul Mihailidis, Mark Leccese, Alanna Durkin (AP)

Wed 12/12 - Reflection on the semester

Mon 12/17 - Final projects due

Due: Final Data Project - all components, including written, graphic and methods blog post.

No class but all written and visual components should be revised based on feedback from Monday.

Assignments

Getting Into the Flow

Part of learning about this emerging field is putting yourself in the middle of the discussions and information flows about it. Please do the following:

1. Sign up for the [data-driven-journalism email list](#)
2. Sign up for the [NICAR email list](#)
3. Sign up for the [Data is Plural bi-weekly email list](#)
4. Sign up for the [Storybench media innovation email list](#)
5. Sign up for [ProPublica's email newsletter](#) or [follow them in another way](#)
6. Follow at least 3 dataviz blogs via email alerts or Twitter or RSS. Check out the lists of blogs [here](#) or [here](#) or [here](#) to get started knowing which ones are good.
7. Find one interesting data visualization from those sources and write one paragraph about it – why is it interesting? What's particularly exciting or well-done about it? Publish an image from the visualization and your paragraph as a new post on the class blog: <http://word.emerson.edu/dataviz/wp-admin>.
8. [Email me](#) the following:
 - a. Which dataviz blogs you decided to follow
 - b. A link to your published post on the class blog

Tech Track Students:

Also sign up for:

1. [Github.com](#)
2. [Data Elixir](#)
3. [Harvard CGA Newsletter](#)
3. [Algorithms, Automation & AI email list](#)

Comparing By the Numbers Assignment

Using the website [DataUSA](#) in addition to other background research, tell a short data-driven story comparing Boston, MA, and your hometown. Use what you have learned so far about writing with numbers as well as avoiding stereotypes.

Your short narrative should be posted to the class blog and should have 300-500 words.

Your writing for class blog posts should follow this worksheet [How to Write for the Web](#). If it doesn't then points will be taken off or you will be asked to revise your submission.

Post the URL to your blog post as your submission to Canvas.

Examining Your First Data Set

This is the first of several assignments that builds towards the Data User Guide assignment.

Choose one of these data sets to focus on:

1. [City of Boston's Employee Earnings Report](#)
2. 3-5 MORE CHOICES COMING SOON

Do first:

- Download the data set and open it in Excel or Google Sheets and poke around.
- Try uploading the data set to WTFcsv to start to check out potential patterns and generate interesting questions to ask. Note that WTFcsv has a 10MB limit.

Write a short approx. 500 word blog post about the dataset. Copy and paste the following questions into the blog post and then answer them:

- Who collects this data set? If it's an organization, which department of the organization? Is there a specific person listed who you could contact?
- Why do you think the organization collects this data? Does it specify how it uses the data?
- What time period does the data set cover?
- What are some questions you have about this data set? (Note: they can be basic like "why is this data being collected?" or very specific like "what does the field BUS_LIC_STATUS mean?")
- Who are three types of people you could interview about this data set in order to learn more?

Your writing for class blog posts should follow this worksheet [How to Write for the Web](#). If it doesn't then your assignment will be marked as incomplete until you revise it.

Post the URL to your blog post as your submission to Canvas.

First Charts

This assignment will primarily be undertaken during class time. Create a chart in Tableau using the sample data set provided in class (in our case, Dogs of NY).

As you are creating your final chart, save screenshots of your process.

Upload the following to the course blog in a new blog post:

- Your finished chart
- At least two chart-in-process images.
- A short, one-paragraph description of your process
- Three questions that exploring your data visually provoked you to ask (you don't have to answer the questions, just ask them).

Your writing for class blog posts should follow this worksheet [How to Write for the Web](#). If it doesn't then points will be taken off or you will be asked to revise your submission.

Tech Track students:

- Work through [this Lynda.com course](#) about data analysis in Python.
- Go through the exercise with the baby names data and additionally post a screenshot of one of your plots to your First Chart blog post.

To submit this assignment, post the URL to your blog post as your submission to Canvas.

Data User Guide (Group Assignment)

A *dataset* is a single spreadsheet but a spreadsheet doesn't come out of thin air. People collect data and put them in a spreadsheet for specific reasons. People have called this combination of humans, context and spreadsheets the *data setting* or the *data system*. Before making any charts or maps, you need to understand the history and context of a dataset, whose purposes it serves and how it came to be in the world.

The purpose of a *data user guide* is to orient a new person so that they can use a dataset published online. Imagine that the intended audience for your user guide is one or more of your journalism classmates. Who collects the data in this dataset? How exactly do they collect the data? How is the data stored? How is the data used within the organization? What purpose does it serve? What are some of the limitations of the dataset?

[Here is an excellent example of a data user guide](#) created by the City of Pittsburgh for their 311 data. 311 is non-emergency call in line where citizens can report things that need to be addressed by the city.

Make a copy of this [Data User Guide Template](#) and fill out the various sections, including purpose, history and organizational context. **You will need to do background research and you are required to interview at least three people and note their contact information in the source log.**

Publish your assignment by submitting a link to the Google Doc in Canvas. Make sure that your Google Doc has permissions so that anybody with the link can view and make comments on it.

Stop & Frisk Data Cleaning & Analysis Assignment

Follow the below instructions on the slide from the class assignment. Create a

process-oriented blog post that shows:

1. Your pivot table, maps, timelines and other charts that show your process.
2. Propose an angle for your data story based on your exploration & analysis
3. State what TYPE of data story this is (based on the [5 types of data stories](#)). If you don't think it fits one of those types then propose a new type of data story.

Stop & Frisk Data Exploration

- Download the data: <http://bit.ly/stop-and-frisk-boston>
- Clean up the "race" column in OpenRefine and rename it to Race/Ethnicity since they mix them.
- Make a pivot table in Excel
- Make a map in Tableau
- Make a timeline in Tableau
- Do further exploratory charts/tables, clean other aspects of the data as you need to, and propose an angle of analysis for a data story

Data Analysis Take-home Test

Go to Canvas and [take this test](#). This is an untimed, open-book, open-notes, open-Internet test. You may attempt the quiz an unlimited number of times until you get things right.

Expert Tool Review

There are many, many data visualization tools out there, so it can be hard to know which tool is right for which function. For this assignment, each student will be assigned a tool to learn and demo to the class in a 5-minute presentation. After your presentation, you are the "Class Expert" in that tool and will help others get up to speed if they need to use it.

Your 5-minute presentation to the class should address:

- Demo the tool for us - show us how to make something with it
- Show us one example of somebody else's finished work using the tool
- What kind of data or stories is this tool good for? What is it not good for?
- How hard is it to learn? How did you learn it?

- Is it free? Expensive?
- Do you recommend it to your peers?

There is no written assignment, so there is nothing to turn in on Canvas. Just give the presentation and I will mark it as complete.

Tool assignments:

Tool	Function	Assigned To
Piktochart	Infographics	Abigail
Infogra.am	Infographics	Alisha
Venngage	Infographics	Daysia
TimelineJS	Timelines	Autumn
Plotly	Charts	Celine
CARTO	Maps	Max
DataWrapper	Charts	Noel
Knight StoryMaps	Maps & narrative	Annika
ESRI MapStory	Maps & narrative	Madison
Canva graphs	Charts & graphs	
GraphCommons	Network graphs	Olin
Overview	Text analysis (for large #'s of documents, i.e. wikileaks)	Adrien
Onodo	Network mapping	Minh
Kuler	Color selection	Tay
Color Brewer	Pick map colors	James
Coblis	Color blindness simulator	Andrew
Datamatic		Selah
Flourish		Riane
Trifacta Wrangler		Amanda

Tech Track:

You should learn and review one of these tools:

Tool	Function	Assigned To
D3.js	Custom visualizations	
Highcharts.js	Custom charts	
Trifacta Wrangler	Cleaning data	
CARTO	Maps	
Google Charts API	Custom, embeddable charts	
RaphaelJS	Custom visualizations	
R	Statistical analysis	
Python Pandas	Data science/analysis thru code	
Paper.js	Drawing library	
Chart.js	Web chart library	
ThenMap API or JS	Historical maps	
Overview	Text analysis (for large #'s of documents, i.e. wikileaks)	

Final Project Pitches and Plan

Make a copy of [this Google doc worksheet](#) and fill it out with your group. One member of the group should turn it in [on Canvas](#) and we'll workshop them in class.

Data Exploration Journal (Group Assignment)

Keeping track of how you combine and explore your data is essential for both your own sanity and for future researchers to reproduce your work. Over the course of a couple weeks you will

be combining, cleaning and exploring your data. Your Data Exploration Journal is a narrative account of everything you do, in chronological order, to take your data from "raw" to "processed". With each step, you should document what you are trying to do, the questions you are trying to answer and how you are interpreting what the data is telling you. Use a Word or Google doc for this, make sure you put in images (charts and screenshots) or tables for each step and upload it to Canvas to turn it in.

For example, it might read like this: "I wanted to see if there was more graffiti around Emerson than on Beacon Hill so I mapped the graffiti locations. Here is the map. [IMAGE] The result is that there is not enough data to be able to tell the answer. But from that map, I saw that there was a lot of graffiti in the North End so I decided to count graffiti by neighborhood. Here is my Excel table [IMAGE/SCREENSHOT]. From that you can see that ... etc"

For an example of a highly graded journal see here:

[dataexplorationjournal GOODEXAMPLE.pdf](#)

Tech Track: Your contribution to the Data Exploration Journal should additionally include exploring the data using Python/PANDAs. Include screenshots from your iPython notebook in your journal.

Submit your project by publishing it to the course blog and uploading the URL to Canvas.

Final Data Project (Group Project)

You will work in groups of 3-5 people on the final data-driven project.

Your final project should be a *Data-driven Narrative*. You can browse [examples from prior years](#). Your final data story should include:

1. **Narrative:** A well-researched, compelling narrative. The narrative should have 1500-2000 words. You may publish this on our class blog or on another publishing platform of your choice. **Your narrative must link to your "Methods" blog post (see below)**
2. **Visualization/s:** One or more data visualization components. How you balance between narrative and visualization is up to you as the information and experience designer. For example, one story might be a long form text narrative supported by several 2D charts. Another story might primarily be told through images and slides. Another might be a map combined with some infographics.
3. **Presentation:** A 7-9 minute presentation of your story, visualizations, methods and results for the final class.
4. **Methods & Data:** A 1000-1500 word blog post on our [dataviz blog](#) that functions as a "Methods" document to describe the story you created, the data you sourced, and how you processed, cleaned and found stories within that data. Think of this as a refined, public version of your Data Exploration Journal. Your blog post should also include the following links:
 1. Link to your Data Story
 2. Link to download your data set
 3. Describe how each group member contributed to the final outcome

Tech Track:

- Create at least one of your final data visualizations using python, d3.js or Highcharts.js.

Submit your project by uploading the URL of your final story to Canvas. (Note that the story MUST include a link to download your data and to your methods blog post or I won't be able to find those things and you'll get points taken off).

Policies

Communications Policy

I will use [Canvas](#) to make announcements to the group. These often include important information about assignments, field trip meeting points and more. Double check to ensure that you are receiving email notifications from Canvas announcements.

Technology Policy

Students may use laptops and tablets to review readings during class discussions. If you are Facebooking or engaging in other distractions I will ask you to close your computer. I will ask you to put it away your cell phone if you are texting or talking on it in class.

Commitment to Social Justice & Diversity

For the duration of the semester this class is a community. Our class is a space for intellectual and creative exploration and expression. All students must attend class, show up on time and stay the entire time, keep up on readings, turn in assignments on time, and actively participate in discussion. But just as important, the success of this class as a whole depends on each one of us supporting, encouraging, and respecting each other people in the class. Every student is responsible for adding value to our classroom experience.

Pay attention to your personal reactions and be sensitive to yourself and your classmates. A diversity of opinions contributes to an environment for intellectual expression and exploration. However, opinions that are blatantly racist, sexist, homophobic, transphobic, classist, or otherwise problematic will be challenged, and we will encourage you to explore and develop your understandings of power-and-privilege dynamics in the classroom and within larger society. Continuing discussion outside of class is highly encouraged, but please be mindful of the privacy of your peers.

Emerson College is committed to fostering a climate of respect for students, faculty, and staff, as well as others who participate in the College's programs and activities. Every student in this class will be honored and respected as an individual with distinct experiences, talents, and backgrounds. Students will be treated fairly regardless of race, religion, sexual orientation, gender identification, disability, socio-economic status, political beliefs or national identity.

Issues of diversity may be a part of class discussion, assigned material, and projects. The instructors will make every effort to ensure that an inclusive environment exists for all students. If you have any concerns or suggestions for improving that classroom climate, please do not hesitate to speak with the course instructors or to contact the Office of Diversity and Inclusion at 617-824-8528 or by email at diversity_inclusion@emerson.edu. You may also report any issues to <http://www.emerson.edu/reportaconcern>.

Attendance and Participation

“We always hear about the rights of democracy, but the major responsibility of it is participation.” - Wynton Marsalis

Participation comprises a large percentage of your course grade. There is no difference between excused and unexcused absences in this class. Absences will affect your grade. If you miss an in-class assignment such as a presentation or group workshop you should be prepared to take a 0 for it. If you have a good reason to be absent, you may request to do a make-up assignment.

All classes will start exactly on time. Attendance will be taken at the start of class—1-15 minutes late you will be counted as tardy. You are *required* to be on time. All tardies and missed classes affect your final grade. “Incompletes” for the course are given only in the event of serious illness that prevents a student from completing the course work.

Late Work Policy

Each day an assignment is late (for whatever reason, good or bad) it will be marked down a letter grade. If your assignment would have been graded an A and it was one day late it will receive a B. If it's two days late it will receive a C, and so on. *Note that that means that four days late means you will receive a failing grade on the assignment.*

Accommodations for Students with Disabilities

Emerson is committed to providing equal access and support to all students who qualify through the provision of reasonable accommodations, so that each student may fully participate in the Emerson experience. If you have a disability that may require accommodations, please contact Student Accessibility Services at SAS@emerson.edu or 617-824-8592 to make an appointment with an SAS staff member. Students are encouraged to contact SAS early in the semester. Please be aware that accommodations are not applied retroactively.

Plagiarism Statement

It is the responsibility of all Emerson students to know and adhere to the College's policy on plagiarism, which can be found at: <http://www.emerson.edu/policy/plagiarism>. If you have any question concerning the Emerson plagiarism policy or about documentation of sources in work you produce in this course, speak to your instructor.

