Assignment 4. Let's Do the Time Warp Again

It's nearly Halloween and the membrane between the living and the dead, the past and the present is thinnest. Here, we will revisit old times to facilitate our experiences now. First, we will play in sandboxes to learn a bit more about D3, then we will visit the ghosts of old assignments as inspiration for Assignment 4.

The main objective of this assignment is to familiarize yourself with D3plus and basic HTML to support you in visually communicating your work with a larger audience. You will be graded half on your technical ability (is the thing working; how is it formatted?), and half on how successful you communicate your ideas (is your writing clear and are you telling a story; are the aesthetic choices in your visualization legible and communicating your ideas; is it formatted to facilitate ease of reading?).

In this assignment, there are many options to go the extra distance. You are invited to consider and complete them, but you are only required to complete Part 1—for which there is no deliverable—and Part 2—which is your main assignment. Only consider Parts 2a and 2b after you have successfully completed 1 and 2!

Part 1 - Remembering When You Used to Play in Sandboxes:

> The first part of this assignment is intended to give you a brief orientation to D3 and Javascript, and to learn some of the mechanics of this powerful tool and web language. You'll be playing in a Sandbox, a space intended for you to experiment, test and learn in an easy way. For once, everything is working and your assignment is to break and fix things.
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> 1. Visit https://beta.observablehq.com/collection/@observablehq/visualization
> 2. Try playing around with one or two visualization in the Sandbox and change the parameters, colors, and links to see how the D3 language is structured.
> 3. Don't forget to take a look at the D3 tutorials (https://github.com/d3/d3/wiki/Tutorials) and documentation (https://d3plus.org/docs/). Can you find the data that's powering the visualization? Can you take a look at it; how would you change that data for your own purposes?
> 4. There is no deliverable requested for Part 1… Just feel free to play and learn. <3

After you played with a few and have a *general* understanding of how things may work under the hood, we will move on to Part 2 where D3plus has stripped away some of the complexity (and customization) to allow for faster visualization of their data.

Part 2 - Revisitng Old Favorites and/or Righting the Wrongs of the Past:

Part 2 serves as your main assignment. Simply put, you are to re-create two visualizations from Assignment 1, 2 or 3 that creates a single cohesive story. You are going to create a very simple, no-frills website that retells a portion of your narratives from the assignment with these visualizations and supporting text.

1. Check out the D3plus website (https://d3plus.org/examples/) to see the many, many options available.
2. Review your old assignment submissions. Pick two visualizations from any single assignment—ones already made or ones you wish you had made—and imagine what story you can tell about them. Before you begin, sketch out what you want to communicate, and write a bit of text that tells a story using these two diagrams. *Do they, together, tell a cohesive story?*
3. Consider what data you need to produce this visualization. Go back into your old Python code (yes, that's why comments and clear code matter) and generate the data you need for the visualization. This could be as a table that you extract data from manually, or create a json/csv that you can "upload" and have read by the visualization. Remember, in this setting, you only need enough data as to produce the visualization.
4. Using the base code from the in-class exercise or from the many examples on their website, build your two visualizations in the same HTML page. You should substantively customize the visualization to tell your story—which may include changing the look and feel of the visualizations.
5. Don't forget that bit of text you wrote! You may want to include a title, introduction, and conclusion text. (here's some formatting HTML info if you forgot from the scraping exercises. https://www.w3schools.com/html/html_formatting.asp).
6. In the end, you should have a very basic website (in a folder, with supporting D3plus JavaScript library and data properly included and linked). Zip this up and send the file. You are also welcome to upload this to the web and submit a URL.

This deliverable is the requirement for this assignment. The following is an invitation for those who have more time and wanted to take a bigger bite out of the assignment. For those proposing websites as a final deliverable, the next steps were included to help facilitate you "learning by doing" as we will not much time to work on raw HTML. The provided

templates are intended to allow you to play around and familiarize yourself with this coding environment, which is quite different than Python.

There is no penalty for not completing 2a or 2b (although a modest bonus may be awarded), and assignments will be evaluated upon what is submitted. Only continue if you have successfully completed Part 2!

Part 2a (Bonus, The Extra Kilometer!):

Now that you've had some time to play with base HTML from the templates given to you, we can agree that it isn't the most beautiful of websites. For this bonus step, you are asked to place your two diagrams and text into a website template to familiarize yourself with the HTML and CSS web developing ecosystems. Only do this step if you've completed Part 2 confidently and with enough time to take the extra step.

1. Choose the zipped package or the template you can download here (https://www.w3schools.com/w3css/tryit.asp?filename=tryw3css_templates_start_page&stacked=h). If you are using the latter, download the code and try to work locally. Don't forget to practice good file management otherwise your links to files, scripts and images may break!
2. First, edit the CSS file. This is your style sheet. Can you change colors to fit your aesthetic choice? Perhaps you may want to change the fonts (consult Google Fonts).
    a. If you are using the W3 template, you should first download it locally and edit the path dependency in your HTML. Note that the fonts are dictated in the <style> section within the HTML and not the CSS.
3. Play around with the HTML. See if you can place your two visualizations from Part 2 and supporting text into the HTML to produce a "web-story" using the D3plus visualizations.
    a. For inspiration, take a look at the following site that used static images, but a great use of narrative and figures to support their research: http://toddwschneider.com/posts/analyzing-1-1-billion-nyc-taxi-and-uber-trips-with-a-vengeance/
7. Make sure your paths are correct and properly referenced. Zip everything together into a single file. (You can test to see if your paths were correct by opening your Zip and page on another computer. If anything is broken, your paths were only referenced in a way that it was reading from your computer, such as absolute links to files on your hard drive.) Submit this enhanced website ZIP file. You are also welcome to upload this to the web and submit a URL.

Part 2b (Super Bonus, the Extra Mile!):

Only if you have successfully completed the minimum expectation and the "extra kilometer" assignment! Here, you will gain some nimbleness with the full power (and complexity) with D3. D3 is incredibly powerful for creating interactive data visualizations, but it's using a language and complexity that is quite unfamiliar to many of us. However, for the brave of soul, you are invited to take your playing in the sandbox and apply it to one of your visualizations.

1. In your Part 2a HTML, add the D3 javascript library to the file. You will have to download it from D3js.org and include it in your folder.
2. After editing in the Sandbox referred to in Part 1, replace the code in the HTML file from D3plus with this new D3 code.

Deliverables:

You will one ZIP file with your working, locally hosted website that includes all the supporting files. Or a URL to a working, web-hosted site!