

## Assignment 3: Interactive Visualization

For this assignment, you will explore the issues involved in implementing interactive visualizations. You will build a visualization that enables interactive exploration of a dataset of your own choosing and deploy it on the web.

One goal of this assignment is to gain familiarity implementing interaction techniques for visualizations. For example, the [zipdecode](#) and [NameVoyager](#) applications shown in class apply the interactive technique of *dynamic queries* – first explored in the [HomeFinder](#) application – to the problem of uncovering patterns in zip codes and baby names. Similarly, [treemaps](#) were originally developed to display hierarchical file structure, and were later adapted to the problem of interactively depicting a [map of the stock market](#). We have seen many other examples of interactive visualization techniques in class and in the readings. The goal with this assignment is not only for you to gain hands-on implementation experience, but also for you to think about the effectiveness of the specific techniques for your chosen data domain.

One challenge is to scope the assignment so that you can finish it within two weeks. Focus on designing a limited yet compelling visualization that enables interactive exploration along a few critical dimensions. The [NameVoyager](#) application is a nice example that uses a simple but elegant interaction design to enable engaging explorations. A tightly-focused, well-implemented interactive graphic is much preferred to a sprawling design that attempts too much!

### Assignment

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Design an interactive graphic aimed at enabling understanding of a compelling question for a dataset of your own choosing (we recommend you to use the dataset found by yourself). In order to determine what subset of the data and which interactive options are most promising, you may want to perform additional exploratory analysis. What aspects of the data reveal the most interesting discoveries or stories? Do not feel obligated to try to convey *everything* about the data: focus on a compelling subset.

Your graphic must include interactions that enable exploration. Possible techniques include panning, zooming, brushing, details-on-demand (e.g., tooltips), dynamic query filters, and selecting different measures to display. You are free to also consider highlights, annotations, or other narrative features intended to draw attention to particular items of interest and provide additional context.

Implement your interactive graphic and deploy it to the web. We expect most students will use D3.js for this assignment; however, you are free to use other web-based libraries in addition to or instead of D3. Your graphic should not require customized server-side support; you should simply load data from a static data file or public web API.

You could use [GitHub pages to host your visualization](#) from your project repository. We recommend keeping everything (development files and website) in your master branch: either serve your website from the root folder

or from the "/docs" folder. Your repo must also contain the (unobfuscated) source code for your visualization.

Your deployed webpage should also include a write-up with the following components:

- A rationale for your design decisions. How did you choose your particular visual encodings and interaction techniques? What alternatives did you consider and how did you arrive at your ultimate choices?
- An overview of your development process. Include a commentary on the development process, including answers to the following questions: Roughly how much time did you spend developing your application (in people-hours)? What aspects took the most time?

## Grading

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We will determine scores by judging both the soundness of your design and the quality of the write-up. We will also look for consideration of audience, message and intended task. Here are examples of aspects that may lead to point deductions:

- errors or broken features
- clearly ineffective visual encodings
- confusing interface design or unhelpful interactions
- lack of exploratory interaction techniques
- incomplete or insufficient write-up

## Submission Details

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This is an individual assignment. You may **not** work in groups. Your completed assignment is due on **Fri 5/3, by 11:59pm**. We will be discussing submissions in class, so be sure to avoid a late submission.

You must submit your assignment by upload your file to assignment submission system. Please upload a single zip file named using the pattern "id\_a3.zip" (replacing "id" with your 12-digit student ID, for example, 201811112222). The zip archive should contain at least two files: a plain text file named "readme.txt" (if you are familiar with markdown, mark it up with markdown) and a web folder of your visualization design. If you have deployed visualization on web, you could also include the URL in readme.txt.

The readme.txt file should contain your write-up, as described above. Please be sure to include your real name and student ID in your readme.

For further questions, please ask two teaching assistants at will.