

Homework 4 - Movies Dashboard

Summary

You will create an interactive "dashboard" of the `movies` dataset in Tableau and D3.

Dataset

You will use the `movies` dataset from `ggplot2` package in R.

You will likely want to do some preprocessing before exporting the dataset as a CSV or JSON file. For example, several entries have an `NA` budget. Make sure you describe your preprocessing in the submission writeup.

Functionality

You must prototype your dashboard in Tableau, and then implement an interactive, linked version in D3.

Basic Functionality

You must create a prototype of your dashboard in Tableau Public. See the [Tableau Public Online Help \(http://onlinehelp.tableau.com/v9.0/public/online/mac/en-us/help.htm#dashboards.html\)](http://onlinehelp.tableau.com/v9.0/public/online/mac/en-us/help.htm#dashboards.html) guides for how to create a dashboard. The dashboard must include at least 3 panels, and at least 2 different techniques.

You are primarily prototyping the techniques and layout you plan to use, and which variables/columns from the dataset you'll include in each visualization panel. You need to think about the interactivity you want to add between panels, but do not need to implement that interactivity in your prototype.

Make sure you link to this prototype (or embed it) on your submission website!

You must complete basic functionality to earn a C-, C, or C+ letter grade on this assignment. You must complete basic functionality before moving on to moderate or advanced functionality.

Moderate Functionality

Implement your prototype in D3. Use the same techniques and variables/columns as your prototype, and a similar layout. You may use a separate SVG for each panel, or separate groups within the same SVG.

You do not need to implement interactivity—yet.

You must complete moderate functionality to earn a B-, B, or B+ letter grade on this assignment. You must complete basic and moderate functionality before moving on to advanced functionality.

Advanced Functionality

Implement filtering or brushing interactivity **between** your panels.

For example, suppose you have a bar chart showing the total number of movies in each category (action, comedy, romance, etc.), a scatterplot showing budget versus ratings, and a multi-series line chart showing year versus average movie length for each category.

An example full-featured visualization might be as follows:

1. When a category bar is clicked, brush that bar, all dots that category in the scatterplot, and the line showing for that category in the multi-series line chart. (If you click the same bar again, remove the filter from both the scatterplot and multi-series line chart.)
2. When you click on a specific line in the multi-series line chart, do the same actions as the bar chart.
3. When you click on a specific dot in the scatterplot, brush the bar(s) and line(s) associated with the same categories as that dot.

The amount of interaction you have between plots will determine whether you earn an A–, A, or A+ on this assignment. For example, only implementing step (1) above would likely result in an A–. Implementing (1) and (2) would result in an A, and implementing all three would result in an A+ grade.

You must complete advanced functionality to earn a A–, A, or A+ letter grade on this assignment. Keep in mind that advanced functionality is meant to be challenging and rewarding but not easy!

Objectives

You must strive to achieve the lowest lie factor, highest data-ink ratio, and highest data density possible with your visualizations (within reason). Make sure any animation or transitions you use are smooth, and that your interactivity does not cause change blindness.

The goal of this assignment is to improve your skills working with multiple SVGs, and having those SVGs interact with each other.

Submission

Create a webpage on your submission website for this homework, and submit a link to this webpage in Canvas for the following assignment:

[Homework 4 - Movies Dashboard \(https://usfca.instructure.com/courses/1480739/assignments/6506241\)](https://usfca.instructure.com/courses/1480739/assignments/6506241)

Please double-check this link is directly to the homework webpage (e.g. homework3.html), and not your home page (e.g. index.html).

In addition to what is required by this homework, you should have the following information on your homework webpage:

- Your **full name** and a **link to the code** in your Github repository.
- A brief description of the **data preprocessing** you did to the original dataset.

- A brief **list of the functionality** you implemented *by level*. This is for grading purposes---it lets us know what to look for. Be specific, and use appropriate HTML elements (such as headers and lists) to ease reading. If you forget to list something, it is likely the teacher assistant will miss it when grading!
- A brief user guide describing **how to interact** with your visualizations. This will be necessary for both the TA and those completing your peer reviews.
- A short (1 to 3 paragraphs, 3 to 5 sentences per paragraph) **discussion about the functionality** you implemented. Focus on providing motivation behind some of your design decisions (e.g. why you choose to remove/add an element, how you decided on colors, etc.). This discussion could influence how your visualization is evaluated in peer reviews. You do not need to re-list everything you implemented!

There is no late homework. There is no reason why you cannot submit this link on time, since you can submit it before you are finished with the assignment. We will look at the timestamps on your repository to verify you completed the functionality on-time.