D3 Workshop Assignment 2

CS 571 - Data Visualization & Exploration

Due: **July 1, 2024**, 11:59pm Eastern Time

1 Instructions

This assignment consists of one programming problem. Your work should be your own.

The starter code for the assignment can be found here.

The code contains the following files:

- d3-workshop-2-assignment
  - data
    - **actors.json**: This file contains an object with key-value pairs of the form "ACTOR_NAME": "DATE_OF_BIRTH"
    - **characters.json**: This file contains an array of objects. Each object has the following parameters:
      - name: the name of the character
      - played_by: an array with the names of the actors who play the character
      - number_of_episodes: the number of episodes the character appears in
      - from: the show the character is from
  - **age.js**: This file contains a helper function getAge that computes age given date of birth
  - **index.html**
  - **index.js**: This file contains the main code for loading and formatting the data files
  - **style.css**
  - **visualizations.js**: This is the Javascript file you will modify. It contains functions for creating scatter plot and bar chart visualizations.

2 Assignment

Problem 1. (20 points) Create a brush-and-link pair of visualizations!

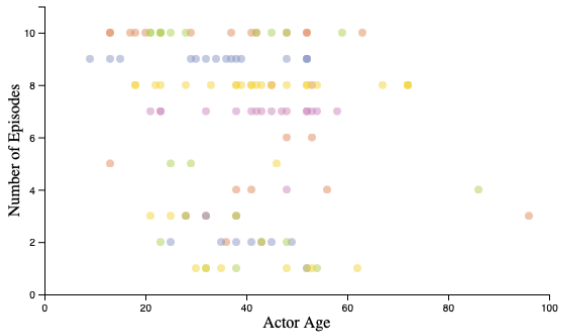
In this problem, you will create two visualizations: a scatter plot and a bar chart. The scatter plot visualization will have hover and brush interactions. The bar chart will be linked to the scatter plot brush interaction.

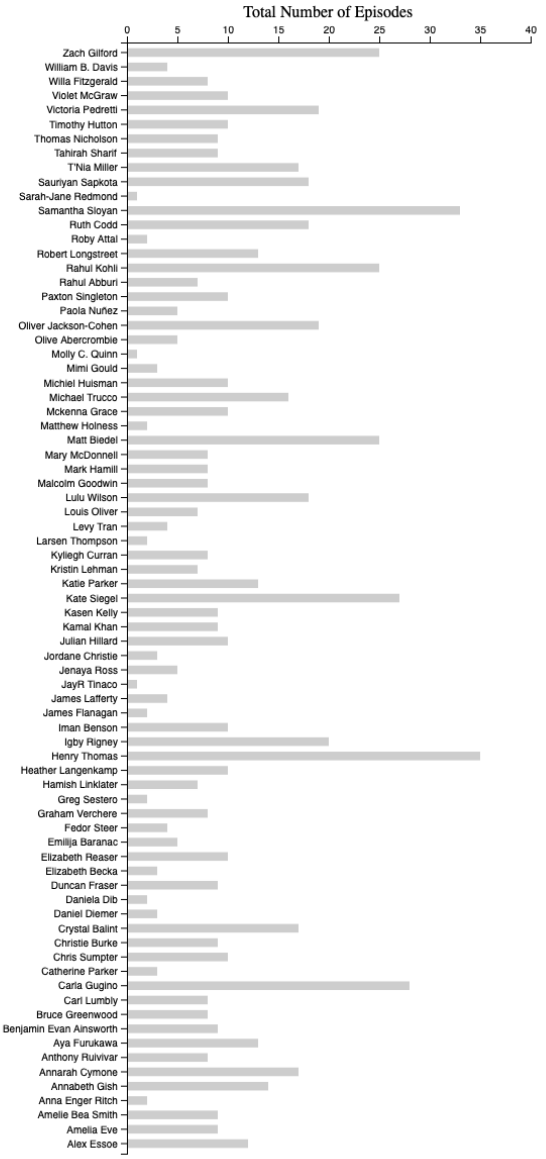
Todo:

- ☐ Update the domains and ranges of the **colorScale**
- ☐ Update the domains and ranges of the **scatterXScale**
- ☐ Update the domains and ranges of the **scatterYScale**
- ☐ Create a **div** tooltip to be used for the hover functionality
- ☐ Complete the **updateBars** function
- ☐ Complete the **drawBarChart** function

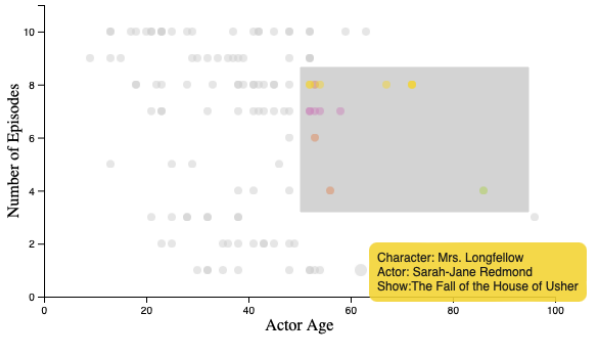
- Complete the **isBrushed** function
- Complete the **drawScatterPlot** function

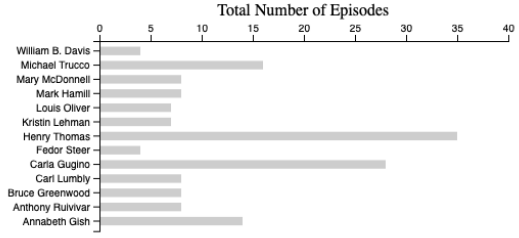
Your code should create visualizations that look something like this:





Your interactions should look something like this:





Extra Credit. (2 point) Add hover interactions to the bar chart.

Extra Credit. (3 points) Add a dropdown to the page that filters the scatter plot and bar chart data when changed.

Note: This should be done using d3. This can also be done with HTML and vanilla Javascript, but such an approach will not receive full marks for this extra credit question.

3 Running your code

To serve your d3 code and view your visualizations, you may wish to use the Live Server extension in Visual Studio Code. Instructions for how to do this can be found in the Canvas announcement titled: **An alternative for serving your d3 code**

Alternatively, you may run a simple http server to test the website you create for each of the questions. To do so, you will need to run the following command in a terminal:

python -m http.server 8000 –bind 127.0.0.1

Note: You will need to change directories in your terminal to the **problem-1/** or **problem-2/** directory when you run the above command.

After running the command, open your browser and navigate to the website hosted at 127.0.0.1:8000.

Note: When updating your code, remember to save the files and refresh your browser tab.

4 Submission Directions

1. Compress your code into a .zip file
   - On Windows 11:
     - Right click the **d3-workshop-1-assignment** directory
     - Select "Compress to ZIP file"
   - On Windows 10:
     - Right click the **d3-workshop-1-assignment** directory
     - Select "Send to"
     - Then, select "Compressed (zipped) folder"
   - On Mac:
     - Right click the **d3-workshop-1-assignment** directory
     - Select "Send to"
     - Select Compress "d3-workshop-1-assignment"
2. Upload the .zip file to the assignment submission page: D3 Workshop Assignment 1
3. Submit the assignment