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D3 Linked Views – Week 6/7

Design Choices

- First off, I needed to find a suitable dataset for this assignment. I did not want a “default” dataset offered by courses website. On the website Kaggle that I used before in other assignments I found a dataset. Its about the homicides in the USA over multiple years. I thought this was suitable because in week 3 I already made a bar chart about mass shootings in the USA. The dataset was extensive enough for this assignment and interested me personally. I deleted some columns from the dataset because it was way to big to use. The deleted data was not necessary for the assignment. After this I converted the CSV dataset to JSON with my python script from week 3.
- After this I went on and find a bootstrap template. I knew it was easier to build the D3 objects within bootstrap, than trying to fit it in later. On the website of bootstrap I downloaded a dashboard template and deleted the elements I did not need.
- In the HTML I created a wrapper that contains the usa-map div, where I would like the map to reside. The following example was used to create the first basic static version of the map: https://bl.ocks.org/mbostock/2869946
- With the help of d3.queue I loaded the data I needed to plot the map and load the homicides data. I checked if the data was loaded correctly with console.log.
- After the basic static map was ready and the data loaded, I create a hover tooltip that showed specific data from the state. The example used to base my tooltip on is the following: http://tietyk.github.io/D3/Prototype/part8-9.html
- I also added color to the map based on the number of homicides per 200.000 inhabitants. Light red to dark red. Light is a low number of homicides, dark red is a high number of homicides.
- Added a bootstrap dropdown to select/load other years via JSON. When a new year is selected, the updateMap() function is called with the new dataset. The numbers in the tooltip and the colors of the states also changes when choosing another year.
- The main visualization was largely finished at this point, so I moved to my second visualization. First I tried a scatter plot, but the colors did not match my design and the story I wanted to tell did not became clear. Later I changed the scatter plot to a bar chart that shows my intentions of the linked view and also fits the design. With the width attribute in HTML I positioned it right from the map, so it fills half the page.
- The bar chart was quite easy to make after all these weeks of D3. The biggest challenge was to map the data so I could use it the way I wanted it. In the beginning it just showed a default state I chose.

- When the bar chart was function correctly for one state, I moved on to the interaction part. If a state was clicked, I wanted the data to show up in the bar chart. With the .on(“click”) event I was able to do this. If a state is clicked, I check if the bar chart is already present. If it is not present jet, I create a complete new bar chart, otherwise the update function is called. The visualizations were now linked. Before this worked correctly I needed to seperate some code in functions, so I would not copy past to much code but could just call the function over and over again. For the updating part I looked at this code: https://bl.ocks.org/RandomEtc/cff3610e7dd47bef2d01
- The basic linked visualization was now functioning correctly. After this I went on a made some nice transitions in the map and bar chart when updating the data. Also the text from the selected state and years change in the DOM when choosing another year or state.
- To make the visualizations look nicer, I changed the webpage. If the page loads, it only shows the map on the full width of the page. A user can hover the map to see data, and also change the year. Of course the map changes accordingly. When a state is clicked, the map resizes to the left of the page, where on the right the bar chart pops up with the data of the clicked state from the selected year.
- For the storytelling I added a button next to the dropdown menu from the year selection. This bootstrap button “collapses” the text underneath it. With this button, the user can read the story without leaving the page. If the button is clicked again the text collapses back in.
- Based on the interm feedback I also added a legend to the map, and a title to the bar chart to clarify that the data used there is based on all the homicides in the selected state, and not aggregated to the use of weapon type per 200.000 inhabitants. The added legend was created with the help of the following webpage: https://www.visualcinnamon.com/2016/05/smooth-color-legend-d3-svg-gradient.html