Week 3 - Dataprocessing questions

Adriaan de Klerk - 10323929

1. **How can D3 access and change the DOM? What do `select` and `selectAll` do?**

   D3 can access the DOM by using selectors such as select and selectAll to get to certain elements from the html page, such as a body or a div, and then use operators on those elements, for example .append() to add something onto the element.

   For instance d3.select("body").append("svg") creates a new svg element on the page.

   The function of selectAll is the same as select but just selects all elements of the type that is given in.

2. **What are the `d` and `i` in `function(d){}` and `function(d, i){}`?**

   The d refers to the data input in your array and the i is used to iterate over the different elements of the array.

3. **Write sample lines of JavaScript to add a `div` element with class "barChart1" and to add an svg element with class "barChart2" with square dimensions.**

   var barChart1= d3.select("body").append("div").attr("class", "barChart1");

   var svg = d3.select("body").append("svg").attr("class", "barChart2");

   　　.attr("width", 500)

   　　.attr("height", 500);

4. **Describe `append`, `update`, `enter`, and `exit` at a high level. What does "selectAll + data + enter + append" refer to?**

   .append adds something on the element

   .update updates an existing element

   .enter is used to indicate that new elements will be added to the current selection.

   .exit removes a given element from the selection.

When you use selectAll + data + enter + append it means that first make a selection, then specify the data you want to use for that selection. You enter that data for each element and then finally append it on the selected element.

5. **What are the main differences between drawing a bar chart with HTML and SVG?**

   The syntax is different. Using d3 can be much faster because you can select multiple elements at once and make changes on them without writing a lot of code.

6. **In drawing the simple bar chart with D3 and SVG, what elements were appended, and what parts of the graph did these elements correspond to?**

   Parts that were appended were:
   - svg element in which you can draw and which is comparable to a canvas element in html, it corresponds with a given width and height
   - axis X and Y which corresponds with the domain and range of your data
   - rect / bar elements that draw the different bars for the bar chart and corresponds to the data set
   - tooltip div element, so information can be shown when you hover your mouse over the chart. It corresponds with your data set