Data processing week 6

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

   The select and selectAll methods make it possible to select specific elements in the document's DOM-structure. After that it is possible to add arbitrary data to those elements.

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

   The d refers to the data associated with, for example, a certain div that is appended for each data element. The i refers to the index of that specific data element.

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.**

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

   d3.select("body").append("svg").attr("class", "barChart1").attr("width", "100").attr("height", "100")

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

   The selectAll method selects elements in the DOM, which most likely don't yet exist. The data method parses our data and makes sure everything past this point will be executed once for each value in the data set. Enter is used to enter the data-bound elements in the DOM. The append method finally creates the DOM elements which were referenced to with enter. If a (new) dataset is smaller than the amount of DOM elements to be created, the exit method can get rid of those surplus elements. If the dataset is larger, the surplus data will end up in enter which will create new DOM elements for those surplus data elements.

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

   The main difference is that in SVGs images can be zoomed in to at nearly every level without losing quality, as opposed to HTML.