Introduction: Readings on D3 and SVG

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

   - DOM (Document Object Model) refers to hierarchical structure of HTML. Each tag is an element and by selecting these elements, D3 can access and change the DOM. 'select' selects first element (e.g. 'p', 'body' or 'h1'), 'selectAll' matches all those elements.

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

   - d and i are inputs for *key functions*

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.**

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   - <svg width="100" height="100"> </svg>

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

   - *append*: can be used to alter an object (e.g. svg), for example by adding a new attribute
   - *update:* can be used to resize and position existing DOM elements
   - *enter:* can be used to create new nodes for incoming data
   - *exit:* can be used to remove outgoing nodes

   "selectAll + data + enter + append" refers to selecting all *data* elements of a certain class or id (e.g. all bars) and then add those via *enter* and to then *append* these elements to, for example, a svg.

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

   - SVG uses XML
   - SVG supports JavaScript event handlers, but Canvas does not offer thiss support
   - SVG objects are remembered can be re-renders automatically by the browser, a HTML canvas is forgotten by the browser once it's drawn
   - SVG resizes if browsers zooms in or out, maintaining resolution
   - SVG renders slower

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?**

   The "div" element were appended to the SVG, these elements corresponded to the bars of the bar chart.