

# Answers to the homework questions - Dataprocessing, Week 3

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**Question 1:** How can D3 access and change the DOM? What do select and selectAll do?

**Answer:** Both select or selectAll return a D3 selection object. This object is the subclass of a DOM array of elements.

Source: <https://bost.ocks.org/mike/selection/>

**Question 2:** What are the d and i in function(d) and function(d, i)?

**Answer:** d is the data attached to this object, i for the index of this object out of all objects of the same type.

**Question 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.

**Answer:**

```
var div = d3.select("body")
    .enter()
    .append("div")
    .attr("class", "barchart_1")

var svg = d3.select("body")
    .enter()
    .append("svg")
    .attr("class", "barchart_2")
    .attr("width", 50)
    .attr("height", 50)
```

Figure 1: My code

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

**Answer:** "Append" adds an element to the SVG, for example a rect. "Update" changes an existing element. "Enter" data that is not attached to elements is stored for later use. "selectAll + data + enter + append" Creates as many elements as the number of elements in the enter section.

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

**Answer:** HTML (canvas) is pixel dependent, whereas SVG is vector dependent. This means that the quality of HTML differences is dependent on resolution, whereas SVG is less so. Furthermore, on canvas elements are drawn programmatically. In SVG, objects are tags to DOM and can be accessed as such. Lastly, animations are built in within the SVG, whereas animations are not built in.

**Question 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?

**Answer:** The "g" element: Its an element used to group other SVG elements together. The "rect" element: This is a rectangle, used for each bar in the bar chart. In an earlier version, I appended the "text" element, but later replaced this with a tooltip.