

## Lab questions D3

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

With `select` the first element that matches the given description is selected. The description can be the tag name, the class name, the id tag or a combination of these.

`SelectAll` returns all elements that match the given description, but it also directly supported operations on all elements in the selection, like changing an attribute.

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

The `d` stands for one of the bound data elements and `i` is an index number

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")
```

```
var svgWidth = 0.5 * window.innerWidth
```

```
d3.select("body").append("svg").attr("class", "barChart2").style("width",  
svgWidth + "px").style("height", svgWidth + "px")
```

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

`append`:

This function appends a new element at the end of the content of the selection where it was called from. It returns this newly created element

`update`:

This source lists all methods of d3 and it does not have `update`

<http://objjob.phrogz.net/d3/methods>

It was never mentioned in the readings

`enter`:

This creates placeholders for all data items that are more than the number of available elements in the selection.

`Exit`:

it returns the elements that are not assigned a data value.

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

SVG is more reliable to produce high resolution charts. SVG is more natural due to for example the `rect` tag to make a bar instead of in HTML creating an empty space, a `div` and coloring its background. It is kind of the same though

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

G elements were appended which are empty place holders like div's and then rect elements were added inside the g and text elements inside the g. The rect elements were the bars and the text the data number.