

## Answers week 3, David Lips (6225950)

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

`select` and `selectAll` allow D3 to access DOM elements by specifying tags, classes, ID's, etc. in the `select/selectAll` functions. `select` targets the first element specified in the function, while `selectAll` selects all such elements E.g. `d3.select(".foobar")` would select the first element with `class="foobar"` in the DOM, while `d3.selectAll(".foobar")` would select all such elements.

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

In the first and second function, `d` is a data element argument. In the second function, `i` is an index argument.

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"="barChart2").attr("width"="100px").attr("height"="100x);
```

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

- `Append` allows you to create new elements and append them to existing DOM elements.
- `Update`. It's not clear what you mean by `update`, but in general it refer to the action of joining data to elements
- `Enter` allows you the bind new elements to data elements that don't yet have a matching element
- `Exit` allows you to remove or alter surplus elements that are not matched with a data element.

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

SVG in this context is an html element, so the question isn't clear. If you mean `svg + d3`, then the difference is one of hard-coding your bar chart in html vs. drawing the svg dynamically according to data.

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?

In the Let's draw a bar chart tutorial, it were div's that were appended. These corresponded to the individual bars of the bar chart.