

Data processing — Reading Assignment and Resources — week 3

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

By using `d3.select('this')` or `d3.selectAll('this')`, with 'this' as an example element you'll get access to the DOM. Within this DOM you can make changes. The difference between `select` and `selectAll` is that with `select`, it picks the very first element named 'this', while `selectAll` picks all the elements named 'this'.

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

The `d` is used for the current data element and the `i` is used for the index of the current 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.

```
1 d3.select('body').append('div').attr('class', 'barChart1')
2
3 var length = 200;
4 vd3.select('body').append('svg').attr("width", length)
5                               .attr("height", length);
```

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

- `append()` returns the DOM element to be appended.
- by using `.data([...])` selection you can update the DOM with new data. data elements = DOM elements
- `enter()` prepares one new element for every unmatched data item. data elements \geq DOM elements
- `exit()` selects an element that doesn't correspond to the data. data elements $<$ DOM elements
- It selects all the DOM elements with the corresponding argument, passes in a data array, and when there are more data elements than DOM elements, it will append the remaining DOM elements.

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

- SVG is at a fundamentally higher level because each drawn shape is remembered as an object in a scene graph or DOM.
- SVG is a document format for scalable vector graphics, Canvas is a javascript API for drawing vector graphics to a bitmap of a specific size.

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?

div elements were appended. each div element corresponds to a data element.