

## Cas Boot

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

The select all method takes a selector string and returns a selection. A selection represents all elements that match that selector. With select you just grab one element.

You can access the DOM element using the select function. Then you can change it by calling its attributes and styles.

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

I is the index of the DOM elements. You can use it to adjust properties of elements when you use the select all function.

D represents the data that is matched to the DOM element.

*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.*

```
var div = document.createElement("div");
```

```
div.className = "barChart1";
```

```
var svg = document.createElement("http://www.w3.org/2000/svg", "svg");
```

```
    svg.setAttribute("HEIGHT", "200px")
```

```
    svg.setAttribute("WIDTH", "200px")
```

```
    svg.className = "barChart2"
```

```
div.appendChild(svg);
```

```
var element = document.getElementsByTagName("body")[0];
```

```
element.appendChild("div");
```

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

- Append → If you paste this above a selection, you can use the "enter" function to automatically create a DOM element with the same properties as the selection.
- Enter allows you to append data to a DOM element that doesn't exist yet. So it will create a DOM element and append the value to it.
- Exit destroys excess DOM elements.
- "selectAll + data + enter + append" lets you append data to the DOM element that is selected.

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

In SVG each drawn shape is remembered as an object in a DOM. That DOM is then subsequently rendered to a bit map. This means that the browser can automatically re-render the scene when

when attributes of a SVG object are modified. So if the value of the data that corresponds to the bar in the bar chart changes, a new bar chart can be created.

*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?*

Existing data is appended to a selection using `selection.data`. New data is continuously updated using the `enter` selection.