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

D3 can access the DOM with the select and selectAll functions and change the DOM with the append, style, data, remove and html methods.

select selects the first element that matches the given CSS selector.

selectAll selects all the elements that match the given CSS selector.

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

d is a convention which represents the element passed through the function.

i represents the order of the element passed through the function, much like the index or an array.

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.append("div").classed("barChart1", true);

d3.append("svg").classed("barChart2", true).attr({"width":"300px", "height": "300px"});

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

append: creates a new element on the page

update: represents the selected DOM elements that were successfully bound to data items

enter: prepares one new element for every data item that cannot be represented on an element on the page, because the element does not exist yet

exit: selects the elements that are not manipulated because they had no matching data item

selectAll + data + enter + append: selectAll selects all the elements on the page, data specifies the data set we want to use, enter prepares new elements when there are more data items than elements, append appends the new elements enter prepared.

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

The main differences between drawing a bar chart with HTML and SVG is that SVG does not lose any quality if they are zoomed or resized, while HTML loses quality when zoomed in. Also that HTML cannot be animated, while SVG can.

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?

divs were appended and these corresponded to the bars of the chart.