Questions week_6

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Questions

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

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

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.

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

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

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?

Answers

1. With D3 you can access and change things with typing in the console somtehing like:

```
    d3.select("body").append("p").html("First paragraph");
1   d3.select("body").append("p").html("Second
2   paragraph").attr("class","p2");
3   d3.select("body").append("p").html("Third
    paragraph").attr("id","p3");
```

And then type:

```
1   d3.select(".p2").html("I'm classy");
2   d3.select("#p3").html("I've got ideas");
```

By using 'select' and use '#' of '.' you can change that particular paragraph. Without classes and id's it's stull possible to select and manipulate the second and thirs instance of an element, but it's a bit more work as you have to use pseudo-classes like d3.select("p:nth-of-type(2)").

When you can to make the whole page in bold letters, you can make use of the 'selectAll' function.

2. The d is just an argument, and i is the second argument. The i represents the order of the element in the selection, so the first gets a 0 – and the second a 1, so

it represents not the data item. So if there's is not data passed in this function call, d would be undefined. But i would still be equal to 0,1,2,..

3. Something like this:

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

div.className = "barChart1";


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

svg.setAttribute("width", "100px")

svg.setAttribute("heigth", "100px")

svg.className = "barChart2"


div.appendChild(svg);

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

element.appendChild(div);
```

4. With enter and append you pass data. What enter() does is that is prepares one new element for every unmatched item. When you have 0 elements, but 3 data items, the enter() selection will prepare 3 new elements. These elements are not created yet at this stage. You will do this in your next command. So first you call it prepared. After enter(), you canspecify an append("p") command. By doing this tou can create as many elements as there are placeholders returned by enter().Using D3's *enter* and *exit* selections, you can create new nodes for incoming data and remove outgoing nodes that are no longer needed

When you are going to append elements you always need to create a container somewhere. Then the String function returns the content of eacht item in our dataset.

Then exit() is to enter() what remove() is to append().

5. If you want to have greater visual expressions, you will need SVG (Scalable Vector Graphics). Here are less limitations, like if you want to use a different chart type like pie of streamgraph, you can better use SVG.

6. You need to draw bar charts as rectangles in the simplest way of representing a bar chart. This is done with g elements. In these elements are tekst and rectangle elements included. This results in the same SVG code as would be created when drawing the graph entirely in SVG. However, instead of writing the same code for each bar, in D3 you can use the selectAll() method and draw a rectangle for each data point in your dataset at once.