D3 Questions

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1. How can D3 access and change the DOM? What do `select` and `selectAll` do?
   In d3, you can access and change the content of HTML containers by using selection methods. The `select` method will return the first element matching the selector string, whereas `selectAll` will return all matching elements. The former allows you to manipulate groups of related elements.

2. What are the `d` and `i` in `function(d){}` and `function(d, i){}`?
   By convention, `d` refers to bound data (an array of values) and `i` refers to the index of the element within its selection. Both parameters can be passed as the first argument used by style and attribute functions.

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", 200)
       .attr("height", 200);

4. Describe `append`, `update`, `enter`, and `exit` at a high level. What does "selectAll + data + enter + append" refer to?
   append: creates a given element to the corresponding selector,
   update: selection of elements bound to data,
   enter: selection of unbound elements to be added,
   exit: selection of unbound elements to be removed.
   "selectAll + data" is used to first join data to an empty selection and then the "enter+append" methods will actually create the missing elements needed to represent its bound data.

5. What are the main differences between drawing a bar chart with HTML and SVG?
   SVG has many complex drawing functions whereas HTML is largely limited to
   rectangular shapes. Additionaly, SVG elements are absolutely positioned to the
   top-left corner whereas HTML positioning can be either static, relative, absolute
   or fixed.

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?
   First 'g' elements are appended for every bar chart bar. Text and rectangles are
   then appended to all 'g' elements. Attributes like size, height and width are
   automatically computed by data values and indices.