D3 Cheat Sheet

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Selections

	Explanation	*Example*
d3.select()	Returns the element found	d3.select("svg")
d3.selectAll()	Returns all found elements	d3.selectAll("circle")
selection.append()	Creates a new element inside the selection	d3.select("svg").append("circle")
selection.remove()	Removes the selection from the DOM	d3.select("rect").remove()
selection.text()	Sets the text content of the selection	d3.select("#tooltip").text("")
selection.attr()	Set an HTML attribute value on the selection	d3.selectAll("circle").attr("r", 10)
selection.style()	Set an inline CSS style on the selection	d3.selectAll("circle").style("fill", "teal")
selection.classed()	Adds or removes a class from the selection	d3.select("circle").classed("highlight", true)

Data

selection.data()	Binds an array of data values to the selection	d3.selectAll("circle").data(dataset).enter()…
selection.enter()	Returns a selection of "new" placeholder elements	d3.selectAll("circle").data(dataset).enter()…

Use anonymous functions to access data values bound to elements via d.

```
d3.selectAll("rect")
  .attr("height", function(d) {
      return d.value;  // Set the height to 'value'
  });
```

Optionally, include i to get the index value of each element in the selection.

```
d3.selectAll("rect")
  .attr("x", function(d, i) {
      return i * 10;  // Move each rect to the right
  });
```

Transitions

selection.transition()	Initiates a new transition	d3.selectAll("circle").transition().attr("cx", …
selection.duration()	Sets the transition duration, in milliseconds	d3.selectAll("circle").transition().duration(2000)…

Scales

`d3.scale.linear()`	Creates a new linear scale function	`var xScale = d3.scale.linear()`
`scale.domain()`	Sets the scale's input domain	`.domain([ 0, 2000 ])`
`scale.range()`	Sets the scale's output range	`.range([ 0, width ]);`
`d3.min()`	Returns the smallest value in an array	`d3.min([ 10, 20, 70, 35 ])  // Returns 10`
`d3.max()`	Returns the largest value in an array	`d3.max([ 10, 20, 70, 35 ])  // Returns 70`

Axes

`d3.svg.axis()`	Creates a new axis generator function	`var xAxis = d3.svg.axis()`
`axis.scale()`	Specifies the scale to be used with this axis	`.scale(xScale)`
`axis.orient()`	Specifies the orientation for this axis	`.orient("bottom")`
`axis.ticks()`	Suggests a number of ticks for this axis	`.ticks(5);`
`selection.call()`	Calls a method; used to generate an axis	`svg.append("g").call(xAxis);`

Interactivity

`selection.on()` — Binds an event listener to a selection

```
d3.select("#button").on("click", function() { … });
```

Within an anonymous function, `this` refers to "the element being acted upon."

```
d3.selectAll("rect")
  .on("mouseover", function() {
     d3.select(this).classed("highlight", true);
  });
```

Other Useful JavaScript

`Math.random()`	Returns a random value between 0.0 and 1.0	`Math.random() * 100  // Could return 61.87844036612…`
`Math.floor()`	Rounds down to the nearest integer	`Math.floor(61.87844036612)  // Returns 61`
`array.push()`	Appends a new value to an existing array	`var numbers = [ 2, 3, 4, 5 ];`
		`numbers.push(6);  // Now numbers is [ 2, 3, 4, 5, 8 ]`