Tutorials to learn D3.js:

**Tutorial 3 Basic SVG Shapes:**

https://www.youtube.com/watch?v=TR39nfAW1dw&list=PL6il2r9i3BqH9PmbOf5wA5E1wOG3FT22p&index=3

SVG: Scalable Vector Graphics - use to make 2d images

**Tutorial 4 Visualizing Data:**

https://www.youtube.com/watch?v=4haBbPEClP4&index=4&list=PL6il2r9i3BqH9PmbOf5wA5E1wOG3FT22p

"In the HTML DOM (Document Object Model), everything is a node:

The document itself is a document node

All HTML elements are element nodes

All HTML attributes are attribute nodes

Text inside HTML elements are text nodes

Comments are comment nodes

"

The DOM is a W3C (World Wide Web Consortium) standard.

The DOM defines a standard for accessing documents:

"The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."

The W3C DOM standard is separated into 3 different parts:

Core DOM - standard model for all document types

XML DOM - standard model for XML documents

HTML DOM - standard model for HTML documents

**Tutorial 5 Scales:**

https://www.youtube.com/watch?v=iMYkVLWc3y0&list=PL6il2r9i3BqH9PmbOf5wA5E1wOG3FT22p&index=5

Scales: let you scale stuff

Note how the widthScale is a variable but is USED AS A FUNCTION?! Whaaa..same for color->color(d)

Anonymous function: function without name (often invoked within other functions as arguments)

**Tutorial 6: Groups and Axes**

- d3.svg.axis() creates an axis

- .append("g") - groups everything together in a container (ex: we grouped the rects in the body)

- appending to canvas, creates a new group within the canvas

**Tutorial 7: Enter, Update, Exit**

**Why use these!?**

**-** so you don’t have to have for loops and conditionals to bind data to visuals

- has value when making things dynamic, by “Reselecting” elements, thus minimizing DOM changes

https://www.youtube.com/watch?v=OZXYk\_bgQGQ&index=6&list=PL6il2r9i3BqH9PmbOf5wA5E1wOG3FT22p#t=12.808934

ALSO: https://bost.ocks.org/mike/join/ <-- NOTE: uses "elements" to refer to circles (DOM elements)

http://www.w3schools.com/jsref/dom\_obj\_all.asp

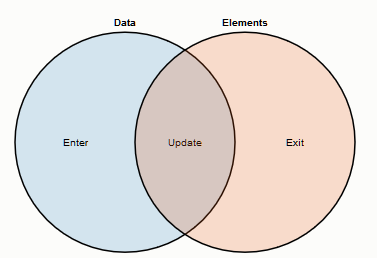
Consider three possiblities:

DOM elements < data elements (enter )(DOM elements being the shapes we added, the rects)

DOM elements > data elements (exit)

DOM elements = data elements (update)

visual of this , left being data> elements case -- > goes to Enter:



datum: piece of data (element in this case)

**Selection:** A **selection** is an array of elements pulled from the current document. D3 uses [CSS3](http://www.w3.org/TR/css3-selectors/) to select elements. For example, you can select by tag ("div"), class (".awesome"), unique identifier ("#foo"), attribute ("[color=red]"), or containment ("parent child")

**-**Thinking with joins means declaring a relationship between a selection (such as "circle") and data, and then implementing this relationship through the three *enter*, *update* and *exit* states.

\*\*\* NOTE THERE IS NO .update()!!! You update existing DOM elements with data via just

