D3 (Data Driven Document)

Data Driven Document is used to create custom interactive data visualization in the web browser using HTML, CSS, SVG and JavaScript  
D3 workers on all browsers except IE8 and lower

Massive amount of data is generated today; communicating this information is getting difficult. Visual representation of data is most effective which means conveying meaningful information. D3 is used to create custom interactive data visualization. The main focus of D3 is interaction, transition and transformation

**DOM:**   
When we write HTML code in our page, it gets convert to a hierarchy structure. Every tag in HTML gets converted to an element in the DOM with a parent-child hierarchy. It makes our HTML more logically structured. Once DOM is formed, it makes it easier to manipulate (add/change/remove) the elements on the page

**Select DOM elements:**  
manipulate DOM elements in the HTML document, for that first we have to select a particular element or group of elements and then manipulate those elements using various D3 methods  
Select methods are select() and selectAll()  
DOM manipulation methods are:   
text(): get/set the content of the selected element  
append(): to create a new DOM element and it is add to the end of the selected element  
insert(): to create a new DOM element and insert it in the selected element  
**difference between append() & insert()**insert() method we can pick where the element to be added to the list. Whereas append() method we cannot pick where the element to be added to the list

**Function of data**In the DOM Manipulation, we learned so many methods like append(), insert(), text(), att() etc, Each of this functions can take a constant value or function as a parameter. This function is a function of data. So each of these methods will be called for each of our data values bound to the DOM

Data Binding:  
Here we bind data to DOM elements and create new elements based on our data  
In data binding we use methods like data(), enter(), exit() and datum()  
**data()**  
is used to join specified array of data to the selected DOM elements and return the updated selection. We can pass two types of values to the data() function like an array of data (numbers or objects) or a function of data

**enter()**enter() method creates placeholder references corresponding to the number of data values. The output of the enter() method can be fed to append method and the append() method will create DOM elements for which there are no corresponding DOM elements on the page   
**exit()**  
While enter() method is used to add reference nodes and the exit() method to delete the reference nodes  
**Datnum()**  
it is used for static visualization which does not need updates. It binds data directly to an element