15.2 Lesson Summary - Advanced Charts in Plotly

Plotly provides you with the ability to create box and pie charts. D3 allows you to query Web APIs directly within your JavaScript. JavaScript provides a number of different options for sorting and processing arrays of data.

Concept: Plotly can be used to render **box plots**. For example:

*Plotly.newPlot("plot1", [*

*{*

*y: [1, 2, 3],*

*type:"box",*

*}*

*]);*

* Activity: 01-Ins\_BoxPlot, 02-Stu\_BoxPlot

Concept: **Promises** in JavaScript are used by functions that may take a long time to run, such as database queries or network transactions like API calls. With promises you provide the code to handle any returned data in a callback function within the promise's ***then*** method. Any code after the promise will run immediately while the callback within the *then* method will run only after the promise has completed its task.

Concept: D3's ***json*** method utilizes a promise to retrieve data from a **Web API**. For example:

*const url = "https://api.spacexdata.com/v2/launchpads";*

*d3.json(url).then(function(data) {*

*console.log(data);*

*});*

* Activity: 03-Ins\_D3\_JSON, 04-Stu\_Stocks

Concept: An array's ***slice*** method lets you extract elements from that array. For example:

*var firstTwoNums = numArray.slice(0, 2);*

* Activity: 05-Ins\_Sort\_Slice, 06-Stu\_Sort\_Slice
* Suppl link: <https://www.w3schools.com/jsref/jsref_slice_array.asp>

Concept: An array's ***sort*** method allows you to sort your array. For example:

*var numArray = [1, 2, 3, 7, 8];*

*numArray.sort(function compareFunction(firstNum, secondNum) {*

*return secondNum - firstNum;*

*});*

* Activity: 05-Ins\_Sort\_Slice, 06-Stu\_Sort\_Slice
* Suppl link: <https://www.w3schools.com/jsref/jsref_sort.asp>

Concept: You can use D3 to run code based on a user's interaction with your webpage. For example, to display a message after they click anywhere on your webpage you could use the following code:

*d3.select("body").on("click",function(){*

*alert("You clicked on the webpage!");*

*});*

* Activity: 07-Evr-Events\_Review, 08-Ins\_Dropdown\_Events

Concept: You can create a **pie chart** using Plotly. For example:

*var data = [{*

*values: [14, 37, 9, 4],*

*labels:["Saturn", "Jupiter", "Earth", "Mars"],*

*type: "pie"*

*}];*

*var layout = {*

*height: 600,*

*width: 800*

*};*

*Plotly.newPlot("pie", data, layout);*

* Activity: 09-Stu-Event\_Final