CA1 –Building a Chart Classes in JavaScript

1. **Variables**:

Variables are useful for storing values. For the Project this is used to translate the parameters form the constructor to a usable variable. In the constructor the variables must be placed in a this.variable in order for the values to be called.



1. **Loops**.

«For» Loops is being used in the project to create a repetition of bars by calling on the values in the arrays of the data and giving it height based on the **total** or **max value** chosen from the data.



This can also apply to making stacked or 100% stacked bar charts by sorting the values in the nested arrays and stacking them based on the sum of each array or the **max value** of the all the arrays.

Loops is useful to displaying the indicators like ticks on the X and or Y axis which uses the calculated variables like **tickSpacing** and **tickIncrements**. This also is good for displaying what the data and bar represents by calling in the name or code from the database under on what bar is being displayed. 

1. **Functions.**

Functions is used in the project as a way of dividing up the workspace and can help with any issues. This is useful especially when making a Classes and making a render and helping to update the charts.



These function ca called up by in the sketch which modifies the function like the constructor. We used it to generate many aspects of the chart like ticks, bars, texts, etc. To render this, we needed to place the all the function in one new Function called render and call this in the sketch. We also used the functions as a way of calculating by calling the function and giving it a parameter to calculate.



1. **Arrays.**

Arrays is used to house the data and is identified by an index which can be called to be implemented as variables to make some charts and bars.

We created an array that has objects and nested array to provide data for the charts. For the project I implemented some solar energy data based on Investment from 2015-2020, generation and consumption.



However, for the CA we used a CSV file to house the data and call this in a data.js pushing it in an array which automatically places the data in objects and nested arrays. For the table to work the csv file must be preloaded which loads the file before the browser fully loads.

1. **Classes.**

It’s used to name and creates a class to make a template for the objects going to be used in the sketch file. Classes is placed on a separate file from the sketch which can be used in another project. The Classes can be called by its class name.



In the Sketch the calling after calling the class we added the parameters, data, and statements for the objects that is based on what is stated in the constructor and becomes a variable which can be used on the functions.



This Variables are then needed to be placed in a this.variable in order for the functions to be able to use the variables.

1. **Manipulating Text.**

Manipulating Text was very useful for the projects when dealing with CSV files. The CSV files give out the data as text when some are needed to be an Integer or a Float. We changed it after the data was pushed and only changed the part of the data needed for the project. For my

