Currency Converter Documentation

***Overview***

The program uses a free public currency API to retrieve live exchange rate information. It then takes user input of the currency that is to be converted, the amount and the currency that the amount will be converted to, and then mathematically calculates the value of the currency after the action of exchange by multiplication.

**How it works…**

The program uses a HTML and JavaScript in tandem to take user input and then go through the necessary calculations. On the user side, there is a selection dropdown of all the available currencies to convert between. After which is a user input box for the currency amount, a calculate button, a range slider a swap button and then an output field below.

The program listens for a change in the dropdown selection and a change in the input field. If a change occurs, a function checks if the other necessary fields have a value within them. If they do, then a live exchange will occur with the output being placed in its dedicated field, if a field does not have a value, then nothing will happen. This live check works with an event listener for the input field, with every value change in the field being outputted immediately.

The swap button enables the user to easily switch between two currencies instead of having to go through the process of selecting different options. It works by changing the physical values of these fields along with a temporary variable. Furthermore, the range slider next to this button allows the user to easily change the currency amount between 0 and 100 and is a more tactile option for mobile users.

Once a value has been entered for each of the three fields (two currencies to convert from and to, and one number value) a symbol is displayed next to the amount input field of the currency being converted, and then the output currency has a symbol in the output field. This is done using a dictionary associating currency code to its symbol.

**Challenges**

The dropdown has around 100 different currencies within it and would take up too much space and time to physically list all the selection fields within the HTML so there is a JavaScript section dedicated to the rendering of these fields. This section uses an array of objects and jQuery for the rendering. To create the array of objects, a python program was created that scraped a html page with a list of all the currencies along with their 3-letter-code and the symbol. A for loop would iterate over this list of values and then assort them into objects within a large array. From here another dictionary would need to be created to align currency code with its respective symbol. This was accomplished by editing the original for loop within the python code. Finally, the outputted array and dictionary were copied and pasted into the JavaScript so that they could be interacted with. A blueprint of a selection field was then created with jQuery.

**Links**

* Website Project Link: <https://ezkmd.github.io/API-Project/>
* GitHub File Location Link: https://github.com/EZKMD/Currency-Converter