**Software Design Sepcification - Purchasing Power Parity Calculator**

1. **Introduction**

The purpose of this software design specification is to define the requirements and design for a purchasing power parity calculator, which will allow users to compare the purchasing power of different currencies. The calculator will be implemented using HTML, CSS, and JavaScript.

1. **Requirements**

The following are the requirements for the purchasing power parity calculator -

* The calculator should allow users to input two country names (source and target) and their current salary in the source country.
* The calculator should calculate the purchasing power parity between the two countrie’s currencies, using the following formula:

exchangeRateRatio = currencyRate[to] / currencyRate[from]

exchangeRateFactor = (PPP[to] / PPP[from]) / exchangeRateRatio

convertedSalary = salary \* exchangeRateRatio \* exchangeRateFactor

* The calculator should display the converted salary value to the user.

1. **Architecture**

The purchasing power parity calculator will consist of a HTML file, which will contain the user interface and a link to the JavaScript code. The user interface will consist of the following components:

* 3 input fields for the country names and current salary.
* 1 output field to display the converted salary value.

The JavaScript code will handle the following tasks:

* Defining the API key for currency conversion API
* Define an asynchronous function to convert salary to another currency based on the selected countries.
* Fetch the exchange rate data for the currencies
* Calculate the conversion factor based on purchasing power parity
* Calculate the new salary in the target country currency
* Add an event listener to the salary input field to trigger the conversion function when the Enter key is pressed

1. **Implementation Details**

The purchasing power parity calculator will be implemented using HTML, CSS, and JavaScript. The HTML code will define the user interface components and their layout, while the CSS code will be used to style the user interface. The JavaScript code will handle the user input, calculation, and result display.

The JavaScript code will be organized into the following functions:

* convertedData(): This function will retrieve the input values from the user interface and return them as an object.
* toCurrency(): This function will fetch the PPP value using the source country name and same happens for the target country as well.
* const finalSalary: This variable will display the converted salary value in the result field.

The JavaScript code will be written in a modular, maintainable way, using best practices such as avoiding global variables and using appropriate data structures.

1. **Testing Requirements**

The purchasing power parity calculator will be tested using the following test cases:

**Input validation:** Test that the calculator handles invalid input values correctly, such as non-numeric exchange rates or invalid currency codes.

**Calculation accuracy:** Test that the calculator calculates the converted salary value correctly, using known exchange rates and currency codes.

**User interface functionality:** Test that the user interface components work as expected.

1. **Conclusion**

This software design specification defines the requirements and design for a purchasing power parity calculator, which will be implemented using HTML, CSS, and JavaScript. The calculator will allow users to compare the purchasing power of different currencies by calculating the PPP value based on user input. The JavaScript code will be modular, maintainable, and tested using appropriate test cases.