Documentation Add function

The add class is not only made for when an input has the [add] tag. It can also be possible that an operation comes in via a [subtract] operation. This is when adding two numbers is easier than subtracting. Yet it still yields the correct answer back to the terminal. The add class is also used for the multiplication and Karatsuba class.

The class starts with an if-else statement. It starts checking whether the both numbers are positive or both are negative. Otherwise it would be easier to do a subtraction instead of an addition, when one of the numbers is negative it will make a call to the subtract class with as parameters two positive numbers. The second number entered in the function is the from origin negative number.

The main part of the addition is to get the last number of the string. Turn that character into an integer and then it will add both together inclusive the carry. Adding two numbers inclusive the carry can never be greater than 2 times the base. When the result of this addition is greater than one time the base, the base will be subtracted from the result and the carry is set to one, otherwise to zero. The result will be converted to a character and placed at the beginning of the result string. When all numbers from one of the two strings has passed this function, it will continue adding until the carry is set to zero or an addition is made on all characters of the second string.

In case the loop stops because all characters of both strings have passed an addition a final one will be added at the beginning of the result string. In case the loops stops because the carry is set to zero, the remaining part of the longest string, that didn’t got involved in an addition, will just be copied to the beginning of the result string. The sign of the result is set by copying the sign of the inputs. Adding two negative numbers will lead to a negative answer. Adding two positive numbers will lead to a positive answer.