Sobhan sanati

Summations

Sigma , a summation is expressed as sigma and adds the element together

For example if we want to iterate the number 1 through 5 and then multiply each by 2 and sum them, here is how I would express that using a summation

Now we want to perform that in python File(No.1)

Now we set an variable

After that as we said we want to multiply each by 2

* i is a placeholder variable representing each consecutive index value we are iterating in the loop which we multiply by 2 and then sum all together.

When we iterating a data you may see variables like xi indicating an element in collection at index i

It is also common to see n represent the number of item in a collection like the number of records in dataset lets see an example where we iterate a collection of number of size n multiply each on by 10 and sum them File (No.1)

We use here an index i and maximum value n to express each iteration feeding into sum

We use sympy module or library to graph function , actually is symbolic math library.

In sympy library we use sum function for summation operating

After that , we use the subs() function to specify n as 5 which will then iterate and sum all i elements from 1 through 5

You could see the example in the File (No.2)

(No.2):

We use the doit function here cause sympy library are lazy to calculate automatically or get simplified so we use doit function to execute the expression

As we see in the result we got 30

The end

\*make sure that you have checkout the files in folder those are important \*