INTRODUCTION TO map(), filter() and reduce()

1. map()
   1. Applies a given function to all iterables and returns a new list.
2. filter()
   1. Creates an output list consisting of values for which the functions returns true.
3. reduce()
   1. Applies a given function to iterables and returns a single value.

THE map() function

* Syntax:
  + Output = map(lambda x: x+3, [1,2,3,4])
  + Output: [4,5,6,7]

The filter() function:

* Syntax:
  + Used to filter the given iterables list, sets, etc. with the help another function passed as argument to test all elements to be true or false.
  + Output = filter(lambda x: (x>=3), [1,2,3,4])
  + Output: [3,4]

The reduce() function:

* Applies some other function to a list of elements that are passed as a parameter to it and finally returns a single value.
* Syntax:
  + Output = reduce(lambda x,y: x+y, [1,2,3,4])
  + Output: 10

Filter() within map():

* Syntax:
  + C = map (lambda x: x+x, filter(lambda x: (x>=3), (1,2,3,4)))
  + Output: (6,8)

Map() within filter():

* Syntax:
  + C = filter(lambda x: (x>=4), map(lambda x: x+x, [1,2,3,4,5,6]))
  + Output: (4, 6, 8, 10, 12)

Map() and filter() within reduce():

* Syntax:
  + c =reduce(lambda x,y: x+y, map (lambda x: x+x, filter(lambda x: (x>=3), (1,2,3,4))))
  + print(c)
  + Output: 14