

Inspecting Lists (1)

```
#-----
def Total( numbers ) :

    # The sum of the elements in the numeric list 'numbers',
    # or 0 if this list is empty
    # [ Python builtin: sum( numbers ) ]

    total = 0

    for number in numbers :
        total += number

    return total

#-----

def Average( numbers ) :

    # The average of the elements in the numeric list 'numbers';
    # if this list is empty, issue an error message and return 'None'

    if numbers == [ ] :
        print( "Average : argument list is empty" )
        return None

    return Total( numbers ) / len( numbers )

#-----

def Maximum( lst ) :

    # The largest element in the list 'lst';
    # if this list is empty, issue an error message and return 'None'
    # [ Python builtin: max( lst ) ]

    if lst == [ ] :
        print( "Maximum : argument list is empty" )

    maximum = None

    for element in lst :
        if maximum == None or element > maximum :
            maximum = element

    return maximum

#-----
```

```
>>> Total( [ 3, 1, 5, 2 ] )
11

>>> Total( [ 1.5, -2.0, 4.6 ] )
4.1

>>> Total( [ ] )
0

>>> sum( [ 3, 1, 5, 2 ] )
11

>>> sum( [ ] )
0

>>> Average( [ 1, 2, 3, 4 ] )
2.5

>>> Average( [ 7, 7, 7 ] )
7.0

>>> Average( [ 1.5, 2.7, 5.3, 4.8 ] )
3.575

>>> Average( [ ] )
Average : argument list is empty

>>> Maximum( [ 5, 2, 4, 7, 1, 8, 3 ] )
8

>>> Maximum( [ "cat", "mouse", "elephant" ] )
'mouse'

>>> Maximum( [ 123 ] )
123

>>> Maximum( [ ] )
Maximum : argument list is empty

>>> max( [ 5, 2, 4, 7, 1, 8, 3 ] )
8

>>> max( [ "cat", "mouse", "elephant" ] )
'mouse'

>>> max( [ ] )
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ValueError: max() arg is an empty sequence
```