

# KEY\_Practice08\_Functions\_and\_Methods

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## 1 Practice with functions and methods!

**Remember:** \* Functions and methods take an input, do something with the input, and return an output \* Functions can take arguments that modify the output of the function \* Methods are specific to certain object types

Let's use the functions we learned on a new list of numbers:

```
[2]: # make list of numbers
numbers = [-1.98109433, 0.4853873, -0.36403664, -0.59780583, 0.11605985, -0.
→0.03363619,
0.07866253, -0.91272715, -0.17107551, -0.18762688, 1.72405448, 1.45011427,
1.78252183, 0.33430701, -0.65456432, -0.75685282, 0.6597416, 0.31665978,
-0.89478975, 0.32167438, 1.04937506, -1.22575797, -0.53536782, -0.95484705,
-1.18471148, 0.39326952, -1.46043887, -0.6158524, -1.38622398, -0.08476239]

# print numbers
print(numbers)
```

```
[-1.98109433, 0.4853873, -0.36403664, -0.59780583, 0.11605985, -0.03363619,
0.07866253, -0.91272715, -0.17107551, -0.18762688, 1.72405448, 1.45011427,
1.78252183, 0.33430701, -0.65456432, -0.75685282, 0.6597416, 0.31665978,
-0.89478975, 0.32167438, 1.04937506, -1.22575797, -0.53536782, -0.95484705,
-1.18471148, 0.39326952, -1.46043887, -0.6158524, -1.38622398, -0.08476239]
```

How many elements are in numbers?

```
[3]: # print length of numbers
len(numbers)
```

[3]: 30

What is the sum of numbers?

```
[4]: # get the number of elements in numbers
sum(numbers)
```

[4]: -5.29034377

What about the minimum and maximum values in numbers?

```
[5]: # command Python to print the minimum of numbers
print(min(numbers))
# command Python to print the maximum of numbers
```

```
print(max(numbers))
```

-1.98109433

1.78252183

Get the absolute value the first element in numbers.

```
[6]: # get the absolute value  
abs(numbers[0])
```

[6]: 1.98109433

Find the mean of numbers and save it to avg.

```
[7]: # get mean of numbers and save to avg  
avg = sum(numbers)/len(numbers)  
  
# print avg  
print(avg)
```

-0.17634479233333333

Round avg to 2 decimal places:

```
[8]: # command Python to round the first element in numbers  
round(avg,2)
```

[8]: -0.18

**Challenge:** Let's work with our animals list:

```
[9]: # command Python to make a list of animals  
animals = [['cat','dog','elephant'],  
           ['fish','seahorse','whale'],  
           ['robin', 'cardinal', 'bat']]  
  
# command Python to print animals  
print(animals)
```

```
[['cat', 'dog', 'elephant'], ['fish', 'seahorse', 'whale'], ['robin',  
'cardinal', 'bat']]
```

What is the max of animals? Does this make sense?

```
[10]: # command Python to get the max of animals  
print(max(animals))
```

```
['robin', 'cardinal', 'bat']
```

What is the maximum of the land animals?

```
[20]: # command Python to get the maximum of the land animals  
max(animals[0])
```

[20]: 'elephant'

What is the maximum of cat in the animals list? Use indexing to get cat.

```
[21]: # print the max of cat  
max(animals[0][0])
```

```
[21]: 't'
```

Nice job! You just practiced: \* Using functions \* Indexing lists \* Saving things to variables