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 ceratin object types

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

[1]:
```
# make list of numbers
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]

# 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`?

[2]:
```
# print length of numbers
len(numbers)
```

[2]:
```
30
```

What is the sum of `numbers`?

[3]:
```
# get the number of elements in numbers
sum(numbers)
```

[3]:
```
-5.29034377
```

What about the minimum and maximum values in `numbers`?

[4]:
```
# 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`.

[5]:
```
# get the absolute value
abs(numbers[0])
```

[5]: `1.98109433`

Find the mean of numbers and save it to `avg`.

[6]:
```
# 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:

[7]:
```
# command Python to round the first element in numbers
round(avg,2)
```

[7]: `-0.18`

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

[8]:
```
# 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?

[9]:
```
# command Python to get the max of animals
print(max(animals))
```

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

What is the maximum of the land animals?

[10]:
```
# command Python to get the maximum of the land animals
max(animals[0])
```

[10]:
```
'elephant'
```

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

[11]:
```
# print the max of cat
max(animals[0][0])
```

[11]:
```
't'
```

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