

Python For Data Science Cheat Sheet

Python Basics

Learn More Python for Data Science [Interactively](#) at www.datacamp.com



Variables and Data Types

Variable Assignment

```
>>> x=5  
>>> x  
5
```

Calculations With Variables

	Sum of two variables
>>> x+2 7	Subtraction of two variables
>>> x-2 3	Multiplication of two variables
>>> x*2 10	Exponentiation of a variable
>>> x**2 25	Division of a variable
>>> x%2 1	Division of a variable
>>> x/float(2) 2.5	Division of a variable

Types and Type Conversion

str()	'5', '3.45', 'True'	Variables to strings
int()	5, 3, 1	Variables to integers
float()	5.0, 1.0	Variables to floats
bool()	True, True, True	Variables to booleans

Asking For Help

```
>>> help(str)
```

Strings

```
>>> my_string = 'thisStringIsAwesome'  
>>> my_string  
'thisStringIsAwesome'
```

String Operations

```
>>> my_string * 2  
'thisStringIsAwesomethisStringIsAwesome'  
>>> my_string + 'Innit'  
'thisStringIsAwesomeInnit'  
>>> 'm' in my_string  
True
```

Lists

```
>>> a = 'is'  
>>> b = 'nice'  
>>> my_list = ['my', 'list', a, b]  
>>> my_list2 = [[4,5,6,7], [3,4,5,6]]
```

Selecting List Elements

Index starts at 0

Subset

```
>>> my_list[1]  
>>> my_list[-3]
```

Slice

```
>>> my_list[1:3]  
>>> my_list[1:]
```

```
>>> my_list[:3]  
>>> my_list[:]
```

Subset Lists of Lists

```
>>> my_list2[1][0]  
>>> my_list2[1][:2]
```

Select item at index 1
Select 3d last item

Select items at index 1 and 2
Select items after index 0

Select items before index 3

Copy my_list

```
my_list[list][itemOfList]
```

List Operations

```
>>> my_list + my_list  
['my', 'list', 'is', 'nice', 'my', 'list', 'is', 'nice']  
>>> my_list * 2  
['my', 'list', 'is', 'nice', 'my', 'list', 'is', 'nice']  
>>> my_list2 > 4  
True
```

List Methods

```
>>> my_list.index('a')  
>>> my_list.count('a')  
>>> my_list.append('!')  
>>> my_list.remove('!')  
>>> del(my_list[0:1])  
>>> my_list.reverse()  
>>> my_list.extend('!')  
>>> my_list.pop(-1)  
>>> my_list.insert(0, '!')  
>>> my_list.sort()
```

Get the index of an item
Count an item
Append an item at a time
Remove an item
Remove an item
Reverse the list
Append an item
Remove an item
Insert an item
Sort the list

Index starts at 0

String Operations

```
>>> my_string[3]  
>>> my_string[4:9]
```

String Methods

```
>>> my_string.upper()  
>>> my_string.lower()  
>>> my_string.count('w')  
>>> my_string.replace('e', 'i')  
>>> my_string.strip()
```

String to uppercase
String to lowercase
Count String elements
Replace String elements
Strip whitespace from ends

Index starts at 0

Index starts at 0

Libraries

Libraries

Import libraries

```
>>> import numpy  
>>> import numpy as alias  
Selective import  
>>> from math import pi
```

pandas Data analysis

learn Machine learning

NumPy Scientific computing

matplotlib 2D plotting

Install Python



Leading open data science platform
powered by Python



Free IDE that is included
with Anaconda



Create and share
documents with live code,
visualizations, text, ...

Numpy Arrays

Also see Lists

```
>>> my_list = [1, 2, 3, 4]  
>>> my_array = np.array(my_list)
```

Selecting Numpy Array Elements

Index starts at 0

Subset

```
>>> my_array[1]
```

Select item at index 1

Slice

```
>>> my_array[0:2]
```

Select items at index 0 and 1

Subset 2D Numpy arrays

```
>>> my_array[:,0]
```

my_array[rows, columns]

Numpy Array Operations

```
>>> x = my_list > 3  
>>> x  
array([False, False, False, True], dtype=bool)  
>>> my_array * 2  
array([2, 4, 6, 8])  
>>> my_array + np.array([5, 6, 7, 8])  
array([6, 8, 10, 12])
```

Numpy Array Functions

```
>>> my_array.shape  
>>> np.append(other_array)  
>>> np.insert(my_array, 1, 5)  
>>> np.delete(my_array, [1])  
>>> np.mean(my_array)  
>>> np.median(my_array)  
>>> my_array.corrcoef()  
>>> np.std(my_array)
```

Get the dimensions of the array
Append items to an array
Insert items in an array
Delete items in an array
Mean of the array
Median of the array
Correlation coefficient
Standard deviation

