Phyton For Data Science
Cheat-Sheet Phyton Basic

BecomingHuman.AI

DataCamp

Variables and Data Types

Variable Assignment
```
>>> x=5
>>> x
5
```

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

Calculations With Variables

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)
```

Lists   Also see NumPy Arrays
```
>>> 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]              Select item at index 1
>>> my_list[-3]             Select 3rd last item
```
Slice
```
>>> my_list[1:3]           Select items at index 1 and 2
>>> my_list[1:]            Select items after index 0
>>> my_list[:3]            Select items before index 3
>>> my_list[:]             Copy my_list
```
Subset Lists of Lists
```
>>> my_list2[1][0]         my_list[list][itemOfList]
>>> my_list2[1][:2]
```

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)          Get the index of an item
>>> my_list.count(a)          Count an item
>>> my_list.append('!')       Append an item at a time
>>> my_list.remove('!')       Remove an item
>>> del(my_list[0:1])         Remove an item
>>> my_list.reverse()         Reverse the list
>>> my_list.extend('!')       Append an item
>>> my_list.pop(-1)           Remove an item
>>> my_list.insert(0,'!')     Insert an item
>>> my_list.sort()            Sort the list
```

Numpy Arrays   Also see Lists
```
>>> my_list = [1, 2, 3, 4]
>>> my_array = np.array(my_list)
>>> my_2darray =
np.array([[1,2,3],[4,5,6]])
```

Selecting Numpy Array Elements   Index starts at 0

Subset
```
>>> my_array[1]              Select item at index 1
2
```
Slice
```
>>> my_array[0:2]           Select items at index 0 and 1
array([1, 2])
```
Subset 2D Numpy arrays
```
>>> my_2darray[:,0]         my_2darray[rows, columns]
array([1, 4])
```

Numpy Array Operations
```
>>> my_array > 3
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 Operations
```
>>> my_array.shape          Get the dimensions of the array
>>> np.append(other_array)  Append items to an array
>>> np.insert(my_array, 1, 5)  Insert items in an array
>>> np.delete(my_array,[1])    Delete items in an array
>>> np.mean(my_array)          Mean of the array
>>> np.median(my_array)        Median of the array
>>> my_array.corrcoef()        Correlation coefficient
>>> np.std(my_array)           Standard deviation
```

Strings   Also see NumPy Arrays
```
>>> my_string = 'thisStringIsAwesome'
>>> my_string
'thisStringIsAwesome'
```

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

String Operations   Index starts at 0
```
>>> my_string[3]
>>> my_string[4:9]
```

String Methods
```
>>> my_string.upper()          String to uppercase
>>> my_string.lower()          String to lowercase
>>> my_string.count('w')       Count String elements
>>> my_string.replace('e', 'i')  Replace String elements
>>> my_string.strip()          Strip whitespaces
```

Libraries

Import libraries
```
>>> import numpy
>>> import numpy as np
```
Selective import
```
>>> from math import pi
```

Install Python

ANACONDA — Leading open data science platform powered by Pytho

SPYDER — Free IDE that is included with Anaconda

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