Python For Data Science python Basics Cheat Sheet

Learn Python Basics online at www.DataCamp.com

> Variables and Data Types

Variable Assignment

>>> x=5 >>> x

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
```

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 #Variables to booleans

> Libraries

pandas Numb

NumPy **n**

Scientific computing

matp@:lib

learn

Machine learning

Import Libraries

>>> import numpy
>>> import numpy as np

Selective import

>>> from math import pi

> Strings

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

String Operations

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

String Indexing

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
```

> 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

array([1, 4])

```
>>> 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]
```

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 Functions

```
>>> 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
```

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

>>> my_list[1] #Select item at index 1

Index starts at 0

Subset

```
>>> 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 hefere index 3
```

>>> 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

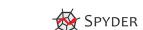
```
>>> my_list.index(a) #Get the index of an item
>>> my_list.count(a) #Count an item
>>> my_list.append('!') #Append an item at a time
>>> my_list.remove('!') #Remove an item
>>> del(my_list[0:1]) #Remove an item
>>> my_list.reverse() #Reverse the list
>>> my_list.extend('!') #Append an item
>>> my_list.pop(-1)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

> Python IDEs (Integrated Development Environment)

ANACONDA.

Leading open data science

platform powered by Python



Asking For Help



Free IDE that is included

with Anaconda

Jupyter
Create and share

documents with live code

>>> help(str)

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