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Python For Data Science Cheat Sheet

Python Basics

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Variables and Data Types

Variable Assignment

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

Calculations With Variables

<pre>>>> x+2 7 >>> x-2 3 >>> x*2 10 >>> x**2 25 >>> x%2 1 >>> x/float(2) 2.5</pre>	<div>Sum of two variables</div> <div>Subtraction of two variables</div> <div>Multiplication of two variables</div> <div>Exponentiation of a variable</div> <div>Remainder of a variable</div> <div>Division of a variable</div>
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Types and Type Conversion

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

Asking For Help

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

Strings

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

String Operations
>>> my_string * 2
'thisStringIsAwesomethisStringIsAwesome'
>>> my_string + 'IsAwes!'
'thisStringIsAwesomethisIsAwes!'
>>> 'm' in my_string
True
```

String Operations

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

String Methods
>>> my_string.upper()
>>> my_string.lower()
>>> my_string.count('u')
>>> my_string.replace('m', 'i')
>>> my_string.strip()
```

String to uppercase

String to lowercase

Count String elements

Replace String elements

Strip whitespace from ends

Lists

```
>>> a = 'list'
>>> b = 'index'
>>> my_list = ['mp', 'list', a, b]
>>> my_list2 = [[4,5,6,7], [3,4,5,6]]

Selecting List Elements
Subset
>>> my_list[1]
>>> my_list[-3]
>>> my_list[1:3]
>>> my_list[1:]
>>> my_list[:3]
>>> my_list[::1]
>>> my_list2[1][0]
>>> my_list2[1][1:2]

List Operations
>>> my_list + my_list
['mp', 'list', 'list', 'mp', 'list', 'mp', 'list', 'list', 'mp', 'list']
>>> my_list * 2
['mp', 'list', 'mp', 'list', 'mp', 'list', 'list', 'mp']
>>> 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

Also see Numpy Arrays

Index starts at 0

Libraries

Import libraries

```
>>> import numpy
>>> import numpy as np
>>> from math import pi
```

Install Python

ANACONDA

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Numpy Arrays

```
>>> 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
Subset
>>> my_array[1]
>>> my_array[0:2]
>>> my_array[::2]
>>> my_2darray[1,0]
>>> my_2darray[0:2,1]

Numpy Array Operations
>>> my_array > 3
array([False,  False,  False,  True])
>>> my_array + 2
array([3, 4, 5, 6])
>>> my_array * np.array([5, 6, 7, 8])
array([5, 6, 10, 32])

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.corrcoeff()
>>> 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

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