

# PYTHON FOR DATA SCIENCE CHEAT SHEET

## Python Basics

### Datatypes

- Numbers: a=2(Integer), b=2.0(Float), c=1+2j(Complex)
- String: a="New String"
- List: a=[1,2,3,'Word']
- Sets: a= {2,3,4,5}
- Tuple: a= (1,2,4)
- Dictionary: x= {'a': [1,2], 'b': [4,6]}

### Operators

#### Numeric Operator: (Say, a holds 5, b holds 10)

- a + b = 15
- a - b = -5
- a \* b = 50
- 7.0//2.0 = 3.0, -11//3 = -4
- b/a = 2
- b % a = 0
- a\*\*b = 9765625

#### Comparison Operator:

- (a == b): not true
- (a != b): true
- (a > b): not true
- (a > b): not true
- (a < b): not true
- (a <= b) is true

#### Boolean Operator:

- a and b
- a or b
- not a

### Operations

#### List Operations

- List=[]**: Defines an empty list
- list[i]=a**: Stores a at the ith position
- list[i]**: Retrieves the character at the ith position
- list[i:j]**: Retrieves characters in the range i to j
- list.append(val)**: Adds item at the end
- list.pop([i])**: Removes and returns item at index i

#### String Operations

- String[i]**: Retrieves the character at the ith position
- String[i:j]**: Retrieves characters in the range i to j

#### Dictionary Operations

- dict={}** : Defines an empty dictionary
- dict[i]=a**: stores "a" to the key "i"
- dict[i]**: Retrieves the item with the key "i"
- dict.key**: Gives all the key items
- dict.values**: Gives all the values

### O O P S

#### Inheritance:

A process of using details from a new class without modifying existing class.

#### Polymorphism:

A concept of using common operation in different ways for different data input.

#### Encapsulation:

Hiding the private details of a class from other objects.

### Class/object

**Class:** class Pen:  
pass

**Object:** obj=Pen()

### Flow Control Method

- if-else (Conditional Statement)**  
if price >= 700:  
print("Buy.")  
else:  
print("Don't buy.")
- For loop (Iterative Loop Statement)**  
a="New Text"  
count=0  
for i in a:  
if i=='e':  
count=count+1  
print(count)
- While loop (Conditional Loop Statement)**  
a=0  
i=1  
while i < 10:  
a=a\*2  
i=i+1  
print(a)
- Loop Control: Break, Pass and continue**

### Functions

```
def new_function():  
    print("Hello World")  
  
new_function()
```

### Lambda Function

```
lambda a,b: a+b
```

```
lambda a,b: a*b
```

### Comments

```
# Single Line Comment
```

```
Multi-line comment
```

### Generic Operations

- range(5)**: 0,1,2,3,4
- S=input("Enter:")**
- Len(a)**: Gives item count in a
- min(a)**: Gives minimum value in a
- max(a)**: Gives maximum value in a
- sum(a)**: Adds up items of an iterable and returns sum
- sorted(a)**: Sorted list copy of a
- importing modules**: import random

### File Operations

```
f= open("File Name","opening mode")
```

(Opening modes: r: read, w: write, a: append, r+: both read and write)

### Try & Except Block

**try:**

[Statement body block]

raise Exception()

**except Exception as e:**

[Error processing block]



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