

# Python102

Python for Data Science Bootcamp

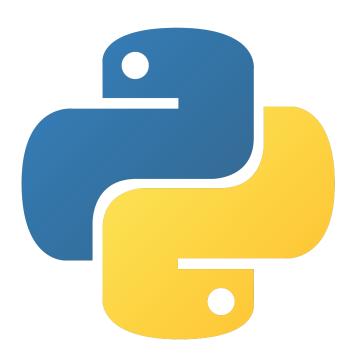
# (3.1) Basics of Python Part 1

AIAT Academy

# Python Basics' Outline (Part 1)



- Interactive Interpreter
- Comments
- Variable and Types
- Numbers and Booleans



### Interactive Interpreter



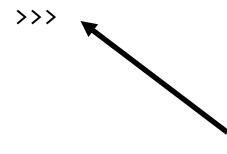
```
terminal$ python3
Python 3.5.0 (v3.5.0:374f501f4567, Sep 12 2015,
11:00:19)
[GCC 4.2.1 (Apple Inc. build 5666) (dot 3)] on darwin
Type "help", "copyright", "credits" or "license" for
more information.
>>>
```

### Interactive Interpreter



```
terminal$ python3
```

```
Python 3.5.0 (v3.5.0:374f501f4567, Sep 12 2015, 11:00:19) [GCC 4.2.1 (Apple Inc. build 5666) (dot 3)] on darwin Type "help", "copyright", "credits" or "license" for more information.
```



We can write a line of Python code here!



# Variables

### Variables



```
x = 2
x * 7
>> 14
x = "Hello, "
x + "Python!"
```

>> "Hello, Python!"

### Variables



```
x = 2
```

x \* 7

Where is a semicolon!

>> 14

```
x = "Hello, "
x + "Python!"
>> "Hello, Python!"
```

Where is data type?

### Variables in C/JAVA and Python



int 
$$x = 0$$
; // In C or JAVA

$$x = 0 \# In Python!!$$

## Variable's naming



• Names are case sensitive and cannot start with a number. They can contain letters, numbers, and underscores.

bob

Bob

\_bob

\_2\_bob\_

bob\_2

BoB

• There are some reserved words:

```
and, assert, break, class, continue, def, del, elif, else, except, exec, finally, for, from, global, if, import, in, is, lambda, not, or, pass, print, raise, return, try, while
```

### Variable's Types



Variables in Python are **Dynamically-typed** 

```
type(1)  # >> <class 'int'>
type("สวัสดีครับ")  # >> <class 'str'>
type(None)  # >> <class 'NoneType'>
```

### Variable's Types



Variables in Python are Dynamically-typed

```
# >> <class 'int'>
type(1)
                      # >> <class 'str'>
type ("สวัสดีครับ")
                      # >> <class 'NoneType'>
type(None)
                      # >> <class 'type'>
type(int)
                      # >> <class 'type'>
type(type(int))
```





```
3  # >> 3 (int)
3.0  # >> 3.0 (float)
```

Python has two numeric types int and float



```
# >> 3 (int)
3.0
               # >> 3.0 (float)
1 + 1
               # >> 2
2 - 1
               # >> 1
100 * 2
               # >> 200
10 / 5
               # >> 2.0
               # >> 2.5
10 / 4
```



```
3
                         # >> 3 (int)
                         # >> 3.0 (float)
3.0
1 + 1
                         # >> 2
                         # >> 1
2 - 1
100 * 2
                         # >> 200
10 / 5
                         # >> 2.0
10 / 4
                         # >> 2.5
7 // 3
                         # >> 2 (integer division) หารปัดเศษ
7 % 3
                         # >> 1 (integer modulus)
2 ** 5
                         # >> 32 (exponentiation)
```





True	#	>>	True
False	#	<b>&gt;&gt;</b>	False

p	q	p^d
T	T	T
T	F	F
F	T	F
F	F	F

Boolean is a subtype of int, where True == 1 and False == 0



True	# >> True
False	# >> False
not True	# >> False
True and False	# >> False
True or False	<pre># &gt;&gt; True (Short-circuit)</pre>
1 == 1	# >> True
2 * 2 == 5	# >> False
1 != 2	# >> True
4 * 3 != 1	# >> False



True False	<pre># &gt;&gt; True # &gt;&gt; False</pre>
not True	# >> False
True and False	# >> False
True or False	<pre># &gt;&gt; True (Short-circuit)</pre>
1 == 1	# >> True
2 * 2 == 5	# >> False
1 != 2	# >> True
4 * 3 != 1	# >> True
1 < 3	# >> False
1 < 5 < 10	# >> True (1 < 5 and 5 < 10



# Comments

#### Comments





# Single line comments start with a '#'

11 11 11

Multiline strings can be written using three "s, and are often used as function and module comments

11 11 11