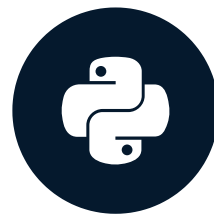


Introduction to Python for Finance

INTRODUCTION TO PYTHON FOR FINANCE



Adina Howe
Instructor

Why Python for Finance?

- Easy to Learn and Flexible
 - General purpose
 - Dynamic
 - High-level language
- Integrates with other languages
- Open source
 - Accessible to anyone




Python Shell

```
In [1]:
```

Calculations in IPython

```
In [1]: 1 + 1
```

```
2
```



←

≡ Course Outline

→

●

📺

⚠

Exercise

<

DataCamp's exercise introduction.

Instructions

100 XP

DataCamp's exercise instructions.

💡 Take Hint (-30 XP)

script.py

Light Mode

1

Commands here will be saved as a Python Script.

↺

Run Code

Submit Answer

IPython Shell

▼

In [1]: 1 + 1

Out[1]: 2

In [2]: 2 ** 3

Out[2]: 8

In [3]:

The IPython Shell - commands here can be executed interactively.

Common mathematical operators

Operator	Meaning
+	Add
-	Subtract
*	Multiply
/	Divide
%	Modulus (remainder of division)
**	Exponent

Common mathematical operators

```
In [1]: 8 + 4
```

```
Out [1]: 12
```

```
In [2]: 8 / 4
```

```
Out [2]: 2
```

Let's practice!

INTRODUCTION TO PYTHON FOR FINANCE

Comments and variables

INTRODUCTION TO PYTHON FOR FINANCE



Name Surname
Instructor

Any comments?

```
# Example, do not modify!  
print(8 / 2 )  
print(2**2)  
  
# Put code below here  
print(1.0 + 0.10)
```

Outputs in IPython vs. script.py

IPython Shell

```
In [1]: 1 + 1
```

```
Out[1]: 2
```

```
In [1]: print(1 + 1)
```

```
2
```

script.py

```
1 + 1
```

```
# No output
```

```
print(1 + 1)
```

```
<script.py> output:  
2
```

Variables

Variable names

- Names can be upper or lower case letters, digits, and underscores
- Variables *cannot* start with a digit
- Some variable names are *reserved* in Python (e.g., **class** or **type**) and should be avoided

Variable example

```
# Correct
```

```
day_2 = 5
```

```
# Incorrect, variable name starts with a digit
```

```
2_day = 5
```

Using variables to evaluate stock trends

$$\text{Price to earning ratio} = \frac{\text{Market price}}{\text{Earnings per share}}$$

```
price = 200
earnings = 5
pe_ratio = price / earnings
print(pe_ratio)
```

40

Let's practice!

INTRODUCTION TO PYTHON FOR FINANCE

Variable Data Types

INTRODUCTION TO PYTHON FOR FINANCE



Adina Howe
Instructor

Python Data Types

Variable Types	Example
Strings	'hello world'
Integers	40
Floats	3.1417
Booleans	True or False

Variable Types

Variable Types	Example	Abbreviations
Strings	'Tuesday'	<code>str</code>
Integers	40	<code>int</code>
Floats	3.1417	<code>float</code>
Booleans	True or False	<code>bool</code>

What data type is a variable: `type()`

To identify the type, we can use the function `type()` :

```
type(variable_name)
```

```
pe_ratio = 40  
print(type(pe_ratio))
```

```
<class 'int'>
```

Booleans

operators	descriptions
<code>==</code>	equal
<code>!=</code>	does not equal
<code>></code>	greater than
<code><</code>	less than

Boolean Example

```
print(1 == 1)
```

```
True
```

```
print(type(1 == 1))
```

```
<class 'bool'>
```

Variable manipulations

```
x = 5  
print(x * 3)
```

15

```
print(x + 3)
```

8

```
y = 'stock'  
print(y * 3)
```

'stockstockstock'

```
print(y + 3)
```

TypeError: must be str, not int

Changing variable types

```
pi = 3.14159  
print(type(pi))
```

```
<class 'float'>
```

```
pi_string = str(pi)  
print(type(pi_string))
```

```
<class 'str'>
```

```
print('I love to eat ' + pi_string + '!')
```

```
I love to eat 3.14159!
```

Let's practice!

INTRODUCTION TO PYTHON FOR FINANCE