

Hello Python!


INTRODUCTION TO PYTHON



Hugo Bowne-Anderson

Data Scientist at DataCamp

How you will learn





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←

Course Outline

→

Daily XP 0



Exercise

Calculations with variables

Remember how you calculated the money you ended up with after 7 years of investing \$100? You did something like this:

```
100 * 1.1 ** 7
```

Instead of calculating with the actual values, you can use variables instead. The `savings` variable you've created in the previous exercise represents the \$100 you started with. It's up to you to create a new variable to represent `1.1` and then redo the calculations!

Instructions100 XP

- Create a variable `growth_multiplier`, equal to `1.1`.
- Create a variable, `result`, equal to the amount of money you saved after `7` years.
- Print out the value of `result`.

Take Hint (-30 XP)

script.py

```
1 # Create a variable savings
2 savings = 100
3
4 # Create a variable growth_multiplier
5 growth_multiplier = 1.1
6
7 # Calculate result
8 result = savings *
9
10 # Print out result
11
12
13
```

↺

Run Code

Submit Answer

IPython Shell

Slides

In [1]:


Python



- General purpose: build anything
- Open source! Free!
- Python packages, also for data science
 - Many applications and fields
- Version 3.x - <https://www.python.org/downloads/>

IPython Shell

Execute Python commands

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Daily XP 100

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IPython Shell

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In [1]:

IPython Shell

Execute Python commands





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≡ Course Outline

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In [1]:

IPython Shell





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IPython Shell

Slides

In [1]:

Python Script

- Text files - `.py`
- List of Python commands
- Similar to typing in IPython Shell

The screenshot shows the DataCamp interface for an exercise titled "Calculations with variables". The exercise instructions are on the left, and the code editor and IPython Shell are on the right.

Exercise: Calculations with variables

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[Take Hint \(-30 XP\)](#)

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IPython Shell

In [1]:

Python Script

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Exercise

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Take Hint (-30 XP)

script.py

1

Run Code

Submit Answer

Python Shell

Slides

In [1]:

Python Script

The screenshot shows a DataCamp exercise interface. On the left, the exercise title is "Calculations with variables". The instructions state: "Remember how you calculated the money you ended up with after 7 years of investing \$100? You did something like this: `100 * 1.1 ** 7`". It then explains that instead of using actual values, variables can be used. The `savings` variable represents the \$100, and a new variable is needed to represent 1.1. The instructions list three tasks: 1. Create a variable `growth_multiplier` equal to 1.1. 2. Create a variable `result` equal to the amount of money saved after 7 years. 3. Print out the value of `result`. A "Take Hint (-30 XP)" button is at the bottom of the instructions. On the right, there is a code editor with a file named `script.py` containing a single line with a cursor. Below the editor are buttons for "Run Code" and "Submit Answer". At the bottom of the interface is a "Python Shell" area with a prompt `In [1]:`.

- Use `print()` to generate output from script

DataCamp Interface

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IPython Shell

Slides

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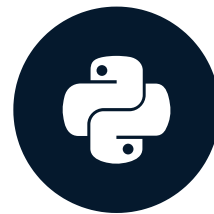
In [1]:

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INTRODUCTION TO PYTHON

Variables and Types

INTRODUCTION TO PYTHON



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Data Scientist at DataCamp

Variable

- Specific, case-sensitive name
- Call up value through variable name
- 1.79 m - 68.7 kg

```
height = 1.79  
weight = 68.7  
height
```

```
1.79
```

Calculate BMI

```
height = 1.79  
weight = 68.7  
height
```

```
1.79
```

$$\text{BMI} = \frac{\text{weight}}{\text{height}^2}$$

```
68.7 / 1.79 ** 2
```

```
21.4413
```

```
weight / height ** 2
```

```
21.4413
```

```
bmi = weight / height ** 2  
bmi
```

```
21.4413
```

Reproducibility

```
height = 1.79  
weight = 68.7  
bmi = weight / height ** 2  
print(bmi)
```

21.4413

Reproducibility

```
height = 1.79  
weight = 74.2 # <-  
bmi = weight / height ** 2  
print(bmi)
```

```
23.1578
```

Python Types

```
type(bmi)
```

```
float
```

```
day_of_week = 5  
type(day_of_week)
```

```
int
```


Python Types (2)

```
x = "body mass index"  
y = 'this works too'  
type(y)
```

str

```
z = True  
type(z)
```

bool

Python Types (3)

```
2 + 3
```

```
5
```

```
'ab' + 'cd'
```

```
'abcd'
```

- Different type = different behavior!