


Hello Python!

INTRODUCTION TO PYTHON



Hugo Bowne-Anderson
Data Scientist at DataCamp

How you will learn

 DataCamp

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)

Course Outline

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
```

Run Code

Submit Answer

Python Shell

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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In [1]: |

IPython Shell

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IPython Shell

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In [1]: |
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Python Script

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

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In [1]:

Python Script

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script.py

1

Run CodeSubmit Answer

IPython Shell

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:" followed by a code block `100 * 1.1 ** 7`. Below this, it says: "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!"

The instructions section lists three tasks:


- 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`.

Below the instructions is a "Take Hint (-30 XP)" button.

On the right, there is a code editor window titled "script.py" with a single line of code: `1`. Below the code editor are two buttons: "Run Code" and "Submit Answer". At the bottom right, there is an "IPython Shell" window with the prompt `In [1]:`.

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

DataCamp Interface

 DataCamp

Exercise

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IPython Shell

Slides

In [1]:

Let's practice!

INTRODUCTION TO PYTHON

Variables and Types

INTRODUCTION TO PYTHON



Hugo Bowne-Anderson
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!

Let's practice!

INTRODUCTION TO PYTHON