


Hello Python!

INTRODUCTION TO PYTHON



Hugo Bowne-Anderson
Data Scientist at DataCamp

How you will learn

datacamp

← 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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↺

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IPython Shell

Slides

In [1]:

IPython Shell

Execute Python commands

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≡ Course Outline

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Daily XP 100

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IPython Shell

Slides

In [1]:

IPython Shell





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Course Outline

→

Daily XP 100



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Submit Answer

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 ask the user to calculate the amount of money saved after 7 years of investing \$100 at a 10% annual growth rate, using variables instead of hard-coded values. The instructions specify creating a variable `growth_multiplier` set to 1.1, a variable `result` representing the final amount, and printing the value of `result`. A "Take Hint (-30 XP)" button is available.

The code editor shows a Python script named `script.py` with the following code:

```
1 # Create a variable savings
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3
4 # Create a variable growth_multiplier
5 growth_multiplier = 1.1
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8 result = savings * growth_multiplier ** 7
9
10 # Print out result
11 print(result)
12
13
```

Below the code editor is the IPython Shell, which is currently empty and shows the prompt `In [1]:`. The interface also includes a "Run Code" button and a "Submit Answer" button.

Python Script

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Exercise

Calculations with variables

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Take Hint (-30 XP)

script.py

1

Run Code

Submit Answer

IPython Shell

Slides

In [1]:

Python Script

The screenshot shows the DataCamp web interface. On the left, the exercise title is "Calculations with variables". Below it, a text block explains the task: "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 snippet `100 * 1.1 ** 7`. Below this, instructions state: "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 bullet points:

- 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`.

At the bottom of the instructions is a button that says "Take Hint (-30 XP)".

On the right side of the interface, there is a code editor window titled "script.py" with a line number "1" and a cursor. Below the editor are three buttons: a circular arrow icon, "Run Code", and "Submit Answer". At the bottom of the interface is an "IPython Shell" window with the prompt "In [1]:".

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

DataCamp Interface

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7 # Calculate result
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Run Code

Submit Answer

IPython Shell

Slides

In [1]:

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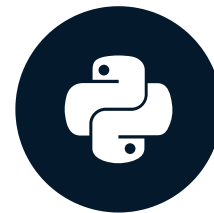
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Let's practice!

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Variables and Types

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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!

Let's practice!

INTRODUCTION TO PYTHON