


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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In [1]:

IPython Shell

Execute Python commands





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≡ Course Outline

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Daily XP 100



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In [1]:

IPython Shell

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Daily XP 100

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↺ Run Code Submit Answer

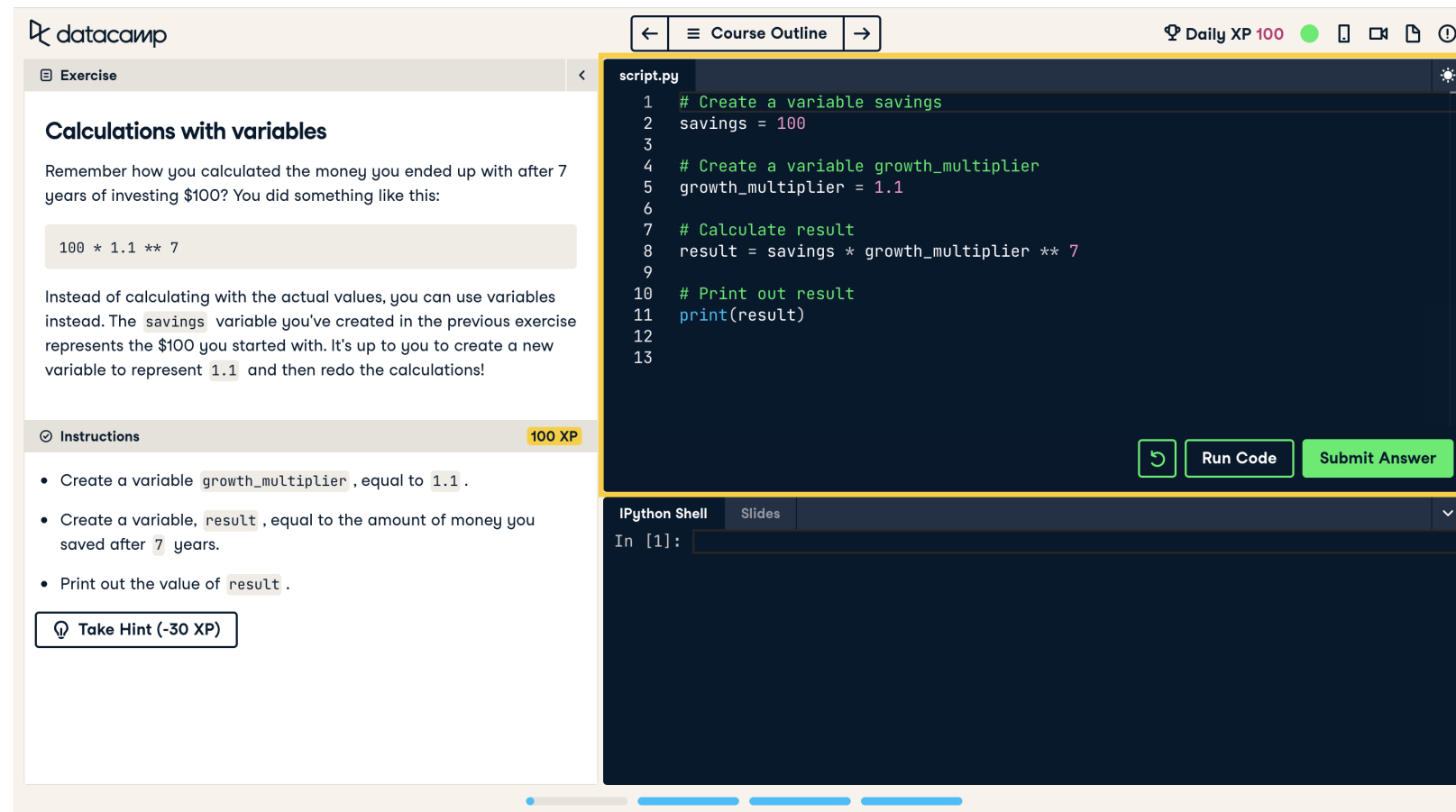
IPython Shell

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` for the final amount, and printing the value of `result`. A "Take Hint (-30 XP)" button is visible.

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

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

Below the code editor is an IPython Shell with a "Slides" tab and a "Run Code" button. The shell shows the prompt `In [1]:`.

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 'Calculations with variables' is displayed. Below the title, 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:'. A code block shows the calculation: `100 * 1.1 ** 7`. Below this, another text block explains that variables can be used instead of actual values. The 'Instructions' section lists three steps: 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 dark theme, showing a file named `script.py` with line 1. Below the editor are buttons for 'Run Code' and 'Submit Answer'. At the bottom of the interface, there is an 'IPython Shell' window with the prompt `In [1]:`.

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

DataCamp Interface

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Run Code

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In [1]:

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INTRODUCTION TO PYTHON

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