



Hello Python!



What you will learn

- Python
- Specifically for Data Science
- Store data
- Manipulate data
- Tools for data analysis





How you will learn





Python

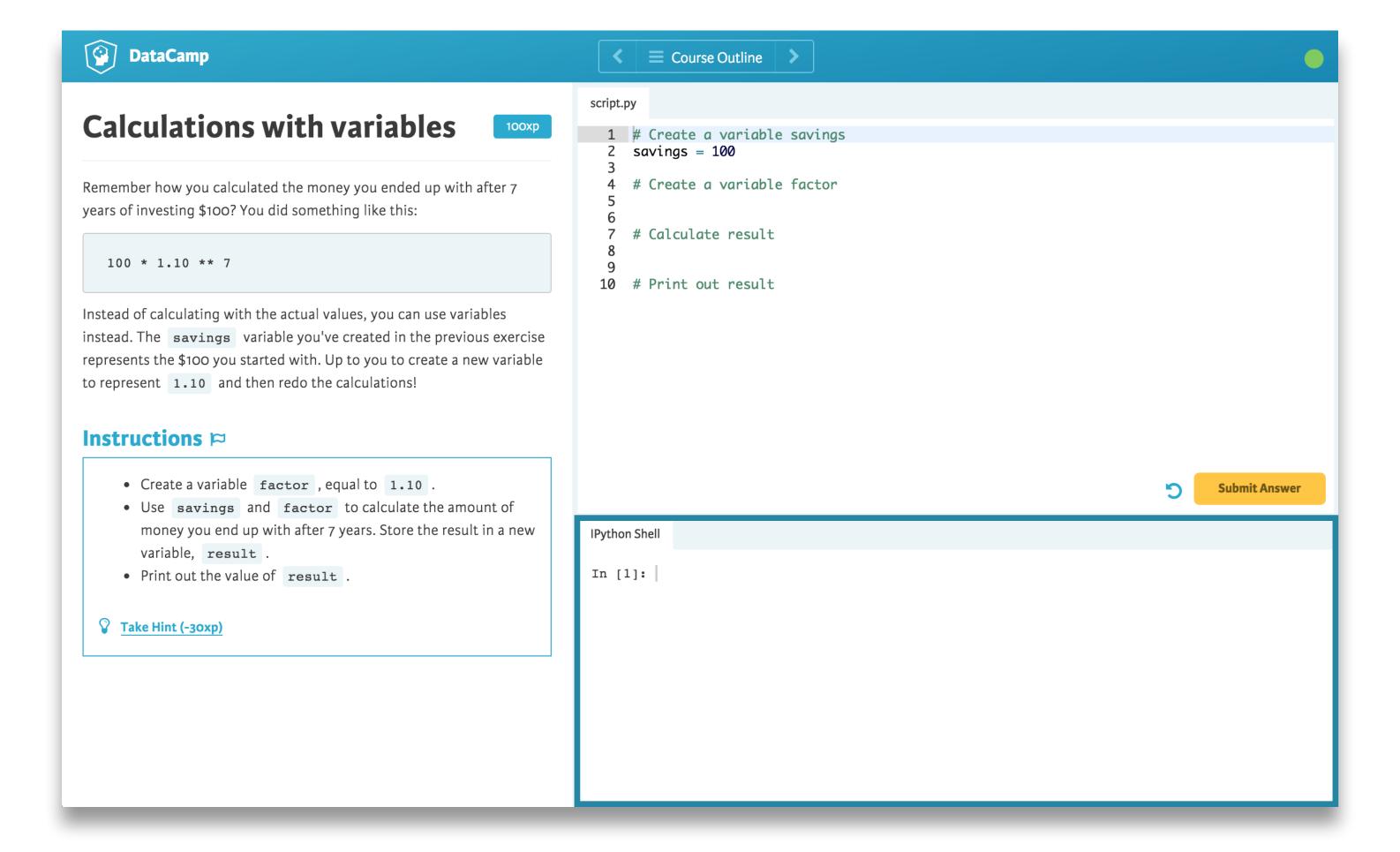
- Guido Van Rossum
- General Purpose: build anything
- Open Source! Free!
- Python Packages, also for Data Science
 - Many applications and fields
- Version 3.x https://www.python.org/downloads/





IPython Shell

Execute Python commands





IPython Shell





Python Script

- Text Files .py
- List of Python Commands
- Similar to typing in IPython Shell



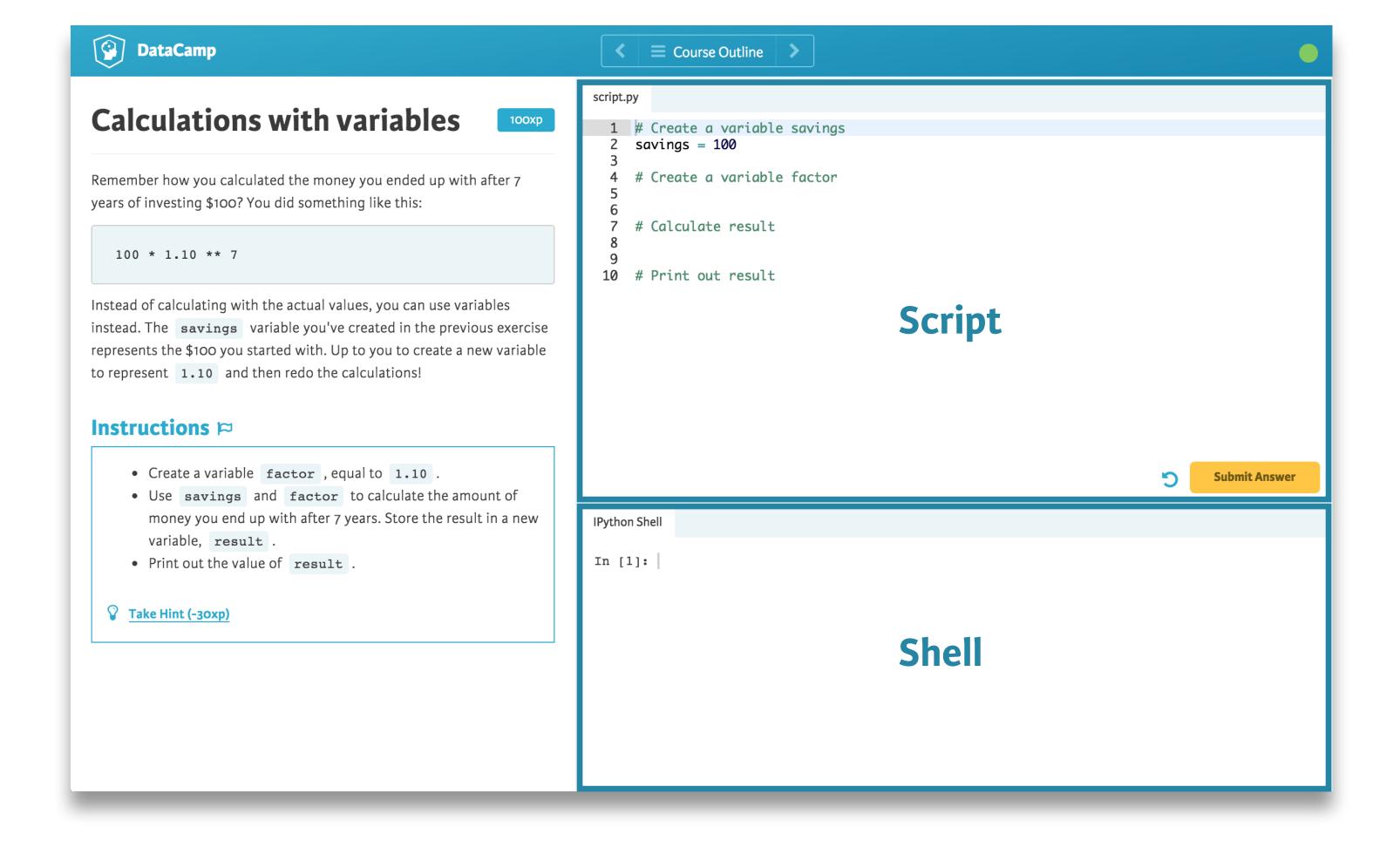


Python Script





DataCamp Interface







Let's practice!





Variables and Types



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Variable

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

```
In [1]: height = 1.79
In [2]: weight = 68.7
In [3]: height
Out[3]: 1.79
```



Calculate BMI

```
In [1]: height = 1.79
                                         BMI = \frac{weight}{}
In [2]: weight = 68.7
In [3]: height
Out[3]: 1.79
In [4]: 68.7 / 1.79 ** 2
Out[4]: 21.4413
In [5]: weight / height ** 2
Out[5]: 21.4413
In [6]: bmi = weight / height ** 2
In [7]: bmi
Out[7]: 21.4413
```





Reproducibility

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

```
Output: 21.4413
```





Reproducibility

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

```
Output: 23.1578
```





Python Types

```
In [8]: type(bmi)
Out[8]: float
In [9]: day_of_week = 5
In [10]: type(day_of_week)
Out[10]: int
```



Python Types (2)

```
In [11]: x = "body mass index"
In [12]: y = 'this works too'
In [13]: type(y)
Out[13]: str
In [14]: z = True
In [15]: type(z)
Out[15]: bool
```





Python Types (3)

```
In [16]: 2 + 3
Out[16]: 5

Different type = different behavior!

In [17]: 'ab' + 'cd'
Out[17]: 'abcd'
```





Let's practice!