

Hello Python!

INTRODUCTION TO PYTHON



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How you will learn

Exercise < script.py ⚡ Light Mode

Python as a calculator

Python is perfectly suited to do basic calculations. It can do addition, subtraction, multiplication and division.

The code in the script gives some examples.

Now it's your turn to practice!

Instructions 100 XP

- Print the result of subtracting 5 from 5 under `# Subtraction` using `print()`.
- Print the result of multiplying 3 by 5 under `# Multiplication`.

Take Hint (-30 XP)

```
script.py
1 # Addition and division
2 print(4 + 5)
3 print(10 / 2)
4
5 # Subtraction
6 print(5 - 5)
7
8 # Multiplication
9 
```

Run Code Submit Answer

IPython Shell

In [1]:

Python



- General purpose: build anything
- Open source! Free!
- Python packages, also for data science
 - Many applications and fields

IPython Shell

Execute Python commands

The screenshot shows a Python exercise interface. On the left, there's a sidebar with navigation links: 'Learn / Courses / Introduction to Python' and a 'Course Outline' button. Below that is a section titled 'Exercise' with the sub-section 'Python as a calculator'. It contains text about Python being suited for calculations and some examples. A 'Instructions' section offers 100 XP and lists four tasks: 'Print the sum of 5 + 5.', 'Print the result of subtracting 5 from 5.', 'Multiply 3 by 5.', and 'Divide 10 by 2.'. A 'Take Hint (-30 XP)' button is also present. On the right, the main area is titled 'script.py' and contains the following code:

```
1 # Addition
2
3
4 # Subtraction
5
6
7 # Multiplication
8
9
10 # Division
11
```

Below the code are three buttons: a blue 'Run Code' button, a white 'Submit Answer' button with a green border, and a grey 'Clear' button. At the bottom, there's an 'IPython Shell' tab and an input field labeled 'In [1]:'.

IPython Shell

Execute Python commands

The screenshot shows a Python exercise interface. On the left, there's a sidebar with navigation links: 'Learn / Courses / Introduction to Python'. Below that is a section titled 'Exercise' with a sub-section 'Python as a calculator'. It contains text about Python being suited for basic calculations and examples of addition, subtraction, multiplication, and division. A 'Instructions' section offers 100 XP and a list of tasks: 'Print the sum of 5 + 5.', 'Print the result of subtracting 5 from 5.', 'Multiply 3 by 5.', and 'Divide 10 by 2.'. A 'Take Hint (-30 XP)' button is also present. On the right, the main area is titled 'script.py' and shows the following code:

```
1 # Addition
2
3
4 # Subtraction
5
6
7 # Multiplication
8
9
10 # Division
11
```

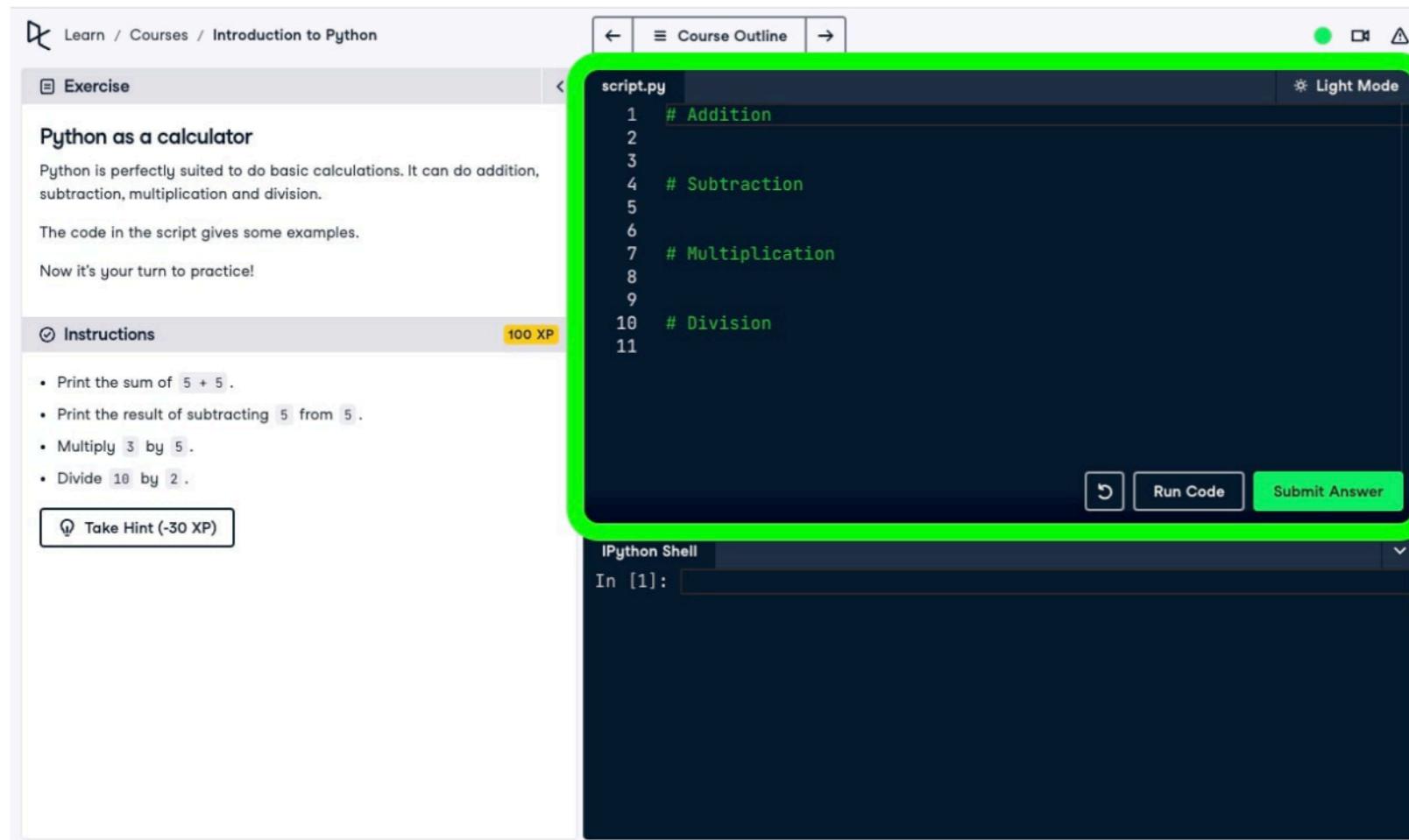
Below the code are buttons for 'Run Code' and 'Submit Answer'. At the bottom, there's an 'IPython Shell' window with the prompt 'In [1]:' followed by a blank input field. This 'IPython Shell' window is highlighted with a thick green border.

IPython Shell

The screenshot shows a Python exercise interface. At the top, there's a navigation bar with 'Learn / Courses / Introduction to Python' and a 'Course Outline' button. Below that is a sidebar with 'Exercise' selected, followed by sections for 'Python as a calculator', 'Instructions' (with 100 XP), and a 'Take Hint (-30 XP)' button. The main area contains a code editor titled 'script.py' with the number '1' at the top left. Below the editor are three buttons: a blue circular icon, 'Run Code', and a green 'Submit Answer' button. At the bottom is an 'IPython Shell' window with the text 'In [1]:' and a small input field.

Python Script

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



The screenshot shows a Python script editor interface. The main area displays a code editor with a dark theme containing the following Python code:

```
script.py
1 # Addition
2
3
4 # Subtraction
5
6
7 # Multiplication
8
9
10 # Division
11
```

The code editor has a green border around it. Below the code editor is an IPython Shell window showing the prompt "In [1]:". At the bottom of the interface, there are buttons for "Run Code" and "Submit Answer".

On the left side of the interface, there is a sidebar with the following sections:

- Exercise**:
 - Python as a calculator**: A brief introduction stating "Python is perfectly suited to do basic calculations. It can do addition, subtraction, multiplication and division."
 - The code in the script gives some examples.
 - Now it's your turn to practice!
- Instructions**:
 - 100 XP
 - A list of tasks:
 - Print the sum of `5 + 5`.
 - Print the result of subtracting `5` from `5`.
 - Multiply `3` by `5`.
 - Divide `10` by `2`.
- Take Hint (-30 XP)**

Python Script

The screenshot shows a Python script exercise interface. At the top, there's a navigation bar with 'Learn / Courses / Introduction to Python' and a 'Course Outline' button. Below that is a toolbar with a 'Light Mode' switch. The main area is divided into sections: 'Exercise' (with 'Python as a calculator' sub-section), 'Instructions' (containing 4 tasks with placeholder values like 4, 5, 3, 10, 2), and an 'IPython Shell' section.

Exercise

Python as a calculator

Python is perfectly suited to do basic calculations. It can do addition, subtraction, multiplication and division.

The code in the script gives some examples.

Now it's your turn to practice!

Instructions 100 XP

- Print the sum of 4 + 5 .
- Print the result of subtracting 5 from 5 .
- Multiply 3 by 5 .
- Divide 10 by 2 .

Take Hint (-30 XP)

script.py

```
1 4
```

Run Code Submit Answer

IPython Shell

```
In [1]:
```

Python Script

The screenshot shows a Python script exercise interface. At the top, there's a navigation bar with 'Learn / Courses / Introduction to Python' and a 'Course Outline' button. A 'Light Mode' switch is also present. The main area is divided into sections: 'Exercise' (containing 'Python as a calculator' text and examples), 'Instructions' (with a '100 XP' badge and a list of tasks: 'Print the sum of 4 + 5.', 'Print the result of subtracting 5 from 5.', 'Multiply 3 by 5.', 'Divide 10 by 2.'), and an 'IPython Shell' section with an input field 'In [1]:'. Below the 'Instructions' section is a 'Take Hint (-30 XP)' button. On the right side of the interface, there are three buttons: 'Run Code', 'Submit Answer' (highlighted in green), and a refresh icon.

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

DataCamp Interface

The screenshot shows the DataCamp Python exercise interface. At the top, there's a navigation bar with the DataCamp logo, 'Learn / Courses / Introduction to Python', and course navigation buttons ('Course Outline', back, forward). A light mode switch is also present.

The main area is divided into several sections:

- Exercise:** A title card for 'Python as a calculator' with a brief description: 'Python is perfectly suited to do basic calculations. It can do addition, subtraction, multiplication and division.' Below this, it says 'The code in the script gives some examples.' and 'Now it's your turn to practice!'
- Instructions:** A section containing a bulleted list of tasks:
 - Print the sum of `5 + 5`.
 - Print the result of subtracting `5` from `5`.
 - Multiply `3` by `5`.
 - Divide `10` by `2`.A button labeled 'Take Hint (-30 XP)' is located below this list.
- Code Editor:** A dark-themed code editor window titled 'script.py' containing the following code:

```
1 # Addition
2
3
4 # Subtraction
5
6
7 # Multiplication
8
9
10 # Division
11
```

Buttons for 'Run Code' and 'Submit Answer' are at the bottom of the editor.
- IPython Shell:** A dark-themed shell window titled 'IPython Shell' with the prompt 'In [1]:'.

Let's practice!

INTRODUCTION TO PYTHON

Variables and Types

INTRODUCTION TO PYTHON



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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