💡 Functions

👋 Heads Up! This content is intended to be used in a facilitated session with mentors. Feel free to browse the materials here, but be aware that if you choose to work through this material in advance, you will still be expected to start from scratch and follow along with the rest of the class.

Functions

Learning Objectives:

- Be able to write and call a function.
- Understand variable scope.
- Understand the purpose of a function.

Introduction

Give a (brief) verbal description of what a function is. For example:

- Functions are blocks of code that we can multiple times. We call a function, and provide arguments or parameters. A function usually returns some value.
- Functions provide the means to separate logic into individual blocks, helping us to make our code more dynamic, and easy to maintain.

Functions

Demonstrate:

- How to write and call a function.

Create a new file called: `functions_playground.py`

Walk through (and have the students follow along on their own computers) an example to demonstrate the ideas listed above, for example:

```
# Demonstrate a function
def create_greeting(name):
      greeting = f"Hello, {name}!"
      return greeting


print(create_greeting("Chilli"))
print(create_greeting("Ivy"))
print(create_greeting("Remus"))
```

Set a small challenge similar to the example you walked through, some ideas:

- Create another function that takes an integer as a parameter and returns that integer multiplied by 3.

Demonstrate:

- That variables created in a function exists only in that function

Walk through (and have the students follow along on their own computers) an example to demonstrate the ideas listed above, for example:

```
# Demonstrate another function

def convert_cm_to_in(length_cm):
      length_in_inches = length_cm / 2.54
      return length_in_inches

print(convert_cm_to_in(20))


# Demonstrate that variables created in a
# function exists only in that function

def convert_cm_to_in(length_cm):
      length_in_inches = length_cm / 2.54
      return length_in_inches

# print(length_in_inches) # does not exist in this scope
length_in_cms = 20
print(convert_cm_to_in(length_in_cms))
```

Set a small challenge similar to the example you walked through, some ideas:

- Write a function that converts inches to centimeters.

Demonstrate:

- A function with multiple parameters

Walk through (and have the students follow along on their own computers) an example to demonstrate the ideas listed above, for example:

```
def calculate_mean(a, b):
      total = a + b
      mean = total / 2
      return mean

print(calculate_mean(3, 4))
```