365 DataScience Defining functions in Python - the Fibonacci sequence

Step 1 Create a function that performs a task without returning a value

```
# A function is a block of organized, reusable code that is called to p
erform a single, related action.

# Define a simple function that takes a string as an argument and print
s out a 'Hello ...!' message
# given a name.
# We have set a default value for the argument 'name'.
# If the user calls the function without providing a value for the argu
ment, the function will print out
# 'Hello Alice!'
def hello(name = 'Alice'):
    print(f'Hello {name}!')
```

Step 2 Call the function

```
# Call the function without an argument
hello()

# Call the function by providing an argument
hello('Bob')
```

Step 3 Create a function that performs a task and returns a value

```
# Create a function that returns the n-th Fibonacci numbers.
# Write a docstring explaining the use of the function.

def fib(n):

    ''' Calculates and returns the n-th Fibonacci number. '''

    a = 0
    b = 1

    for i in range(n):
        a, b = b, a+b

    return a
```

Step 4 Call the function

```
# Return the 10th Fibonacci number
fib(10)
```

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