

# Functions

## Python for Ecologists

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# Functions

- A function takes one or more arguments and returns something
- Can return any type of data structure, including None
- Basic organization of a function:
- `def` some\_function(arg1, arg2):  
    *#some statements*  
    `return` answer

# whitespace and naming

- Whitespace usage is important
  - Indent consistently with 2 or 4 spaces
  - Use spaces instead of tabs, -tt
- Naming conventions
  - lower case words, cannot start with a number
  - use verbs that describe what the function does
  - underscore\_between\_words

```
def some_function(arg1, arg2):  
    #some statements  
    return answer
```

# Example Function

- Argument names can be informative, helping documentation (e.g., `growth_rate` instead of `arg1`)

```
def add_two_numbers(num1, num2):  
    return num1 + num2
```

```
add_two_numbers(6,5)
```

# docstrings

- Triple quoted comment at beginning of functions is accessible as a dunder doc (`.__doc__`) or `help()`

```
def add_two_numbers(num1, num2):  
    """ this function adds two numbers  
    together """  
    return num1 + num2
```

```
help(add_two_numbers)
```

# Types of Arguments

- Required arguments do not have a default
- Keyword arguments can have a default value (and are optional)
- Keyword arguments are differentiated by setting equal to a value in the function argument list

```
def double_it(required1 , keyword2=2):  
    return num1 * num2
```