Section Overview

What You Will Learn

- Functions
- Function parameters
- Function documentation
- Returning data from a function

Functions

Part I

Functions

Part II

Functions

- DRY = Don't Repeat Yourself
- Write one time, use many times

Functions

```
def function_name():
    # Code block
```

```
def say_hi():
    print('Hi!')
```

```
def say_hi():
    print('Hi!')

say_hi()
```

```
Hi!
```

```
say_hi()

def say_hi():
    print('Hi!')
```

```
Traceback (most recent call last):
  File "say_hi.py", line 1, in <module>
    say_hi()
NameError: name 'say_hi' is not defined
```

```
def say_hi(name):
    print('Hi {}!'.format(name))

say_hi('Jason')
say_hi('everybody')
```

```
Hi Jason!
Hi everybody!
```

```
def say_hi(name):
    print('Hi {}!'.format(name))

say_hi()
```

```
File "say_hi.py", line 4, in <module>
    say_hi()
TypeError: say_hi() missing 1 required
positional argument: 'name'
```

```
def say_hi(name = 'there'):
    print('Hi {}!'.format(name))

say_hi()
say_hi('Jason')
```

```
Hi there!
Hi Jason!
```

```
def say_hi(first, last):
    print('Hi {} {}!'.format(first, last))

say_hi('Jane', 'Doe')
```

```
Hi Jane Doe!
```

```
def say_hi(first, last):
    print('Hi {} {}!'.format(first, last))

say_hi(first = 'Jane', last = 'Doe')
say_hi(last = 'Doe', first = 'John')
```

```
Hi Jane Doe!
Hi John Doe!
```

```
def say_hi(first, last='Doe'):
    print('Hi {} {}!'.format(first, last))

say_hi('Jane')
say_hi('John', 'Coltrane')
```

```
Hi Jane Doe!
Hi John Coltrane!
```

```
def say_hi(first, last='Doe'):
    """Say hello."""
    print('Hi {} {}!'.format(first, last))

help(say_hi)
```

```
Help on function say_hi in module __main__:

say_hi(first, last='Doe')
    Say hello.
```

```
def odd_or_even(number):
    """Determine if a number is odd or even."""
    if number % 2 == 0:
        return 'Even'
    else:
        return 'Odd'

odd_or_even_string = odd_or_even(7)
print(odd_or_even_string)
```

```
Odd
```

```
def is_odd(number):
    """Determine if a number is odd."""
    if number % 2 == 0:
        return False
    else:
        return True

print(is_odd(7))
```

```
True
```

```
def get_name():
    name = input('What is your name? ')
    return name

def say_name(name):
    print('Your name is {}.'.format(name))

def get_and_say_name():
    """Get and display name"""
    name = get_name()
    say_name(name)

get_and_say_name()
```

```
What is your name? Jason
Your name is Jason.
```

Section Summary

Summary

- A function is a block of reusable code that performs an action and can optionally return data.
- A function must be defined before it is called.

Summary

- The basic syntax for defining a function is:

```
def function_name(parameter_name):
```

- A function can accept parameters. To make a parameter optional supply a default value for that parameter.

Summary

- You can supply a docstring as the first line of your function.
- The return statement exits the function and passes back what follows return.
- Use the built-in help() function to get help with an object. When supplying a function to help() the docstring contained within the function is displayed.