

Function Design Recipe

The Six Steps

1. Examples

- What should your function do?
- Type a couple of example calls.
- Pick a name (often a verb or verb phrase): What is a short answer to "What does your function do"?

2. Type Contract

- What are the parameter types?
- What type of value is returned?

3. Header

- Pick meaningful parameter names.

4. Description

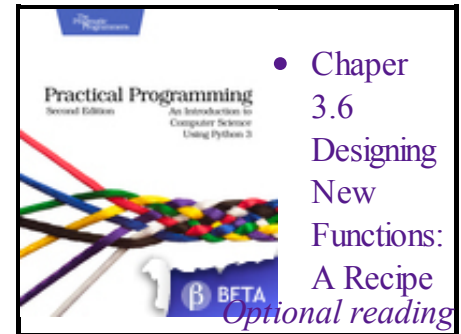
- Mention every parameter in your description.
- Describe the return value.

5. Body

- Write the body of your function.

6. Test

- Run the examples.



Applying the Design Recipe

The problem:

The United States measures temperature in Fahrenheit and Canada measures it in Celsius. When travelling between the two countries it helps to have a conversion function. Write a function that converts from Fahrenheit to Celsius.

1. Examples

```
>>> convert_to_celsius(32)
0
>>> convert_to_celsius(212)
100
```

2. Type Contract

```
(number) -> number
```

3. Header

```
def convert_to_celsius(fahrenheit):
```

4. Description

Return the number of Celsius degrees equivalent to fahrenheit degrees.

5. Body

```
return (fahrenheit - 32) * 5 / 9
```

6. Test

Run the examples.

Putting it all together:

```
def convert_to_celsius(fahrenheit):  
    ''' (number) -> number  
  
    Return the number of Celsius degrees equivalent to fahrenheit degrees.  
  
    >>> convert_to_celsius(32)  
    0  
    >>> convert_to_celsius(212)  
    100  
    '''  
  
    return (fahrenheit - 32) * 5 / 9
```

Jennifer Campbell • Paul Gries
University of Toronto
