

# CSC108H Lecture 6

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# Getting Help

- ▶ There are two help-related Python functions
- ▶ `dir`: tells you the functions in a module; e.g.
  - ▶ `dir(__builtins__)` tells you what is built-in to Python
  - ▶ `dir (math)` tells you what is in the `math` module (assuming you've done `import math`)
- ▶ `help`: gives you details about a function or module; e.g.
  - ▶ `help (abs)`
  - ▶ `help (math)`
- ▶ Ignore the stuff that starts and ends with `--`

# Design Recipe

Our design recipe results in a docstring in triple quotes associated with each function. It is displayed when `help` is used on our function!

The steps:

- ▶ Example
- ▶ Type contract
- ▶ Header
- ▶ Description
- ▶ Body
- ▶ Test

# ConceptTest

One of the components of this function is inconsistent with the rest. Which is it?

```
def sum_eleven(num1, num2, num3):  
    '''(int, int, int) -> bool  
    Return True iff num1, num2, and num3 sum to 11.  
    >>>sum_eleven (4, 5, 2)  
    11  
    '''  
    return num1 + num2 + num3 == 11
```

- ▶ A. Example
- ▶ B. Type contract
- ▶ C. Header
- ▶ D. Description
- ▶ E. Body

# ConcepTest

One of the components of this function is inconsistent with the rest. Which is it?

```
def rightmost_digit(a):  
    '''(int) -> bool  
    Return the rightmost digit of a.  
    >>>rightmost_digit (14)  
    4  
    '''  
    return a % 10
```

- ▶ A. Example
- ▶ B. Type contract
- ▶ C. Header
- ▶ D. Description
- ▶ E. Body

## Example 1

Small chocolate bars cost 1 dollar and large chocolate bars cost three dollars. Write a function that takes two parameters representing the number of small chocolate bars and number of large chocolate bars, and returns the total dollar cost. Let's follow the design recipe!

## Example 2

A student is eligible for PEY if their CGPA is at least 2, they are in year 2 or year 3, and they are registered full-time.

```
def pey_eligible(cgpa, year, full_time):  
    '''(float, int, bool) -> bool  
    Given a CGPA, year, and whether they are full-time,  
    return True iff the student is eligible for PEY.  
    '''
```

Let's add the missing pieces of the design recipe!

## ConcepTest (Example 3)

At a pizzeria, adults order two slices, boys order three slices, and girls order one slice. Each pizza has eight slices. Write a function that takes three parameters representing the number of adults, boys, and girls, and returns the required number of pizzas.

Which example is correct?

▶ A.

```
>>> num_pizzas(1, 2, 3)
2
```

▶ B.

```
>>> num_pizzas(1, 2, 3)
1
```

▶ C.

```
>>> num_pizzas(1, 2, 3)
9
```

▶ D.

```
>>> num_pizzas(1, 2, 3)
6
```



## Example 3

At a pizzeria, adults order two slices, boys order three slices, and girls order one slice. Each pizza has eight slices. Write a function that takes three parameters representing the number of adults, boys, and girls, and returns the required number of pizzas.

Follow the design recipe!

One way to do this: `math.ceil`.

Another way: integer division.