Problem to solve

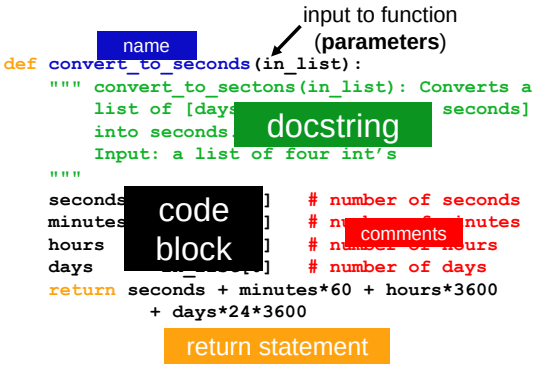
- Given four numbers, days, hours, minutes, and seconds, compute the total number of seconds that is equivalent to them.
- For example, 0 days, 0 hours, 2 minutes, 3 seconds would give 123 seconds. Or 3600 seconds would equal to 0 days, 1 hours, 0 minutes, and 0 seconds.

How to tackle the problem?

- We can use a list to represent the days, hours, minutes, and seconds that are fed to the function.
- The function then should return as the result of computation the total number of seconds.
- We'd like the program run something like

```
>>> convert_to_seconds([0, 0, 2, 3])
123
>>> convert_to_seconds([0, 1, 0, 0])
3600
```

How functions *look*…



How functions *work*…

Assume you have written three functions:

What is **demo(-4)** ?

```
def demo(x):
    return x + f(x)

def f(x):
    return 11*g(x) + g(x//2)

def g(x):
    return -1 * x
```

How functions work…

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def demo(x):
    return x + f(x)

def f(x):
    return 11*g(x) + g(x//2)

def g(x):
    return -1 * x
```

```
demo
  x = -4
  return -4 + f(-4)
```

>>> demo(-4) ?

How functions work…

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def demo(x):
    return x + f(x)

def f(x):
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demo
  x = -4
  return -4 + f(-4)
```

```
f
  x = -4
  return 11*g(x) + g(x//2)
```

>>> demo(-4) ?

How functions work…

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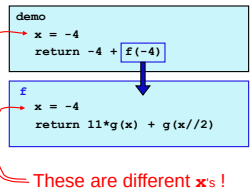


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>>> demo(-4)  ?
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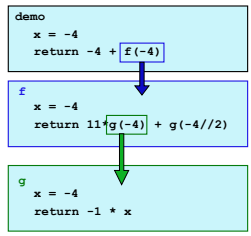


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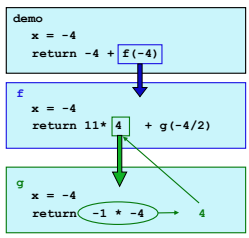


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How functions work…

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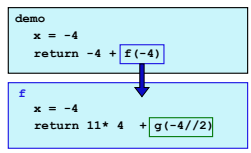


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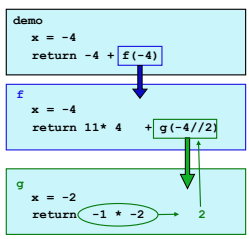


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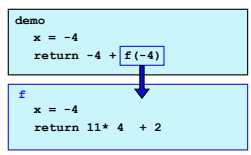


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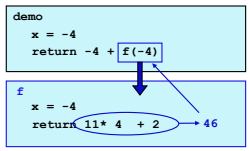


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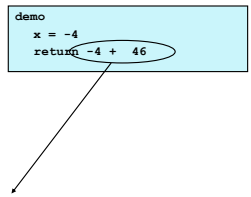


```
>>> demo(-4)
42
```

Function *stack*ing

```
def demo(x):
    return x + f(x)

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def g(x):
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```

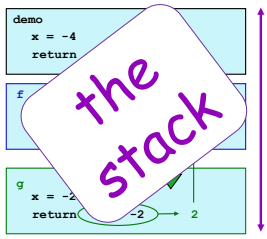

(1) keeps separate variables for each function call…

(2) remembers where to send results back to…

`return` != `print`

```
def dbl(x):
    """ doubles x """
    return 2*x
```

```
>>> answer = dbl(21)
>>> answer
42
```

```
def dblPR(x):
    """ doubles x """
    print (2*x)
```

```
>>> answer = dblPR(21)
42
>>> answer
>>>
```

`print` just prints! It does not return anything

- **Print is for people**

`return` provides the function call's ***value*** …