12.7. A function that accumulates

We have used the `len` function a lot already. If it weren't part of python, our lives as programmers would have been a lot harder.

Well, actually, not that much harder. Now that we know how to define functions, we could define `len` ourselves if it did not exist. Previously, we have used the accumlator pattern to count the number of lines in a file. Let's use that same idea and just wrap it in a function definition. We'll call it `mylen` to distinguish it from the real `len` which already exists. We actually *could* call it len, but that wouldn't be a very good idea, because it would replace the original len function, and our implementation may not be a very good one.

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```
def mylen(seq):
    c = 0 # initialize count variable to 0
    for _ in seq:
        c = c + 1    # increment the counter for each item in seq
    return c

print(mylen("hello"))
print(mylen([1, 2, 7]))

```

```
5
3
```

Activity: 1 -- ActiveCode (ac11_5_1)

func-5-1: Rearrange the code statements to match the activecode window above. (This is an exercise in noticing where the indenting and outdenting happens, and where the return statement goes.)

Drag from here *Drop blocks here*

```
def mylen(x):
    c = 0 # initialize count variable to 0
    for y in x:
        c = c + 1    # increment the counter for each item in x
    return c
print(mylen("hello"))
print(mylen([1, 2, 7]))
```

Check | Reset

Perfect! It took you only one try to solve this. Great job!

Activity: 2 -- Parsons (pp11_5_1)

Check your Understanding

1. Write a function named `total` that takes a list of integers as input, and returns the total value of all those integers added together.

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```
def total(lst):
    tot = 0
    for num in lst:
        tot = tot + num
    return tot

y = total([1, 5, 7])

```

Activity: 3 -- ActiveCode (ac11_5_2)

Result	Actual Value	Expected Value	Notes
Pass	15	15	Testing the total function on input [1, 2, 3, 4, 5].
Pass	0	0	Testing the total function on input [0, 0, 0, 0].
Pass	0	0	Testing the total function on input [].
Pass	2	2	Testing the total function on input [2].

You passed: 100.0% of the tests

2. Write a function called `count` that takes a list of numbers as input and returns a count of the number of elements in the list.

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```
def count(lst):
    tot = 0
    for num in lst:
        tot = tot + 1
    return tot
```

Activity: 4 -- ActiveCode (ac11_5_3)

Result	Actual Value	Expected Value	Notes
Pass	0	0	Testing the function count with input []
Pass	6	6	Testing the function count with input [1, 5, 9, -2, 9, 23]

You passed: 100.0% of the tests

You have attempted 5 of 4 activities on this page

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Completed. Well D
12.8. Variables and parameters are local">Next Section - 12.8. Variables and parameters are local

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