



Lists

- A list is an **ordered** collection of values. To create a new list from scratch, we use [square brackets].

```
In [16]: mixed_list = [-2, 2.5, 'michigan', [1, 3], max] # Different types!  
mixed_list
```

```
Out[16]: [-2, 2.5, 'michigan', [1, 3], <function max>]
```

- As you saw in Discussion 1, there are a variety of built-in functions that work with lists.

```
In [17]: max(['hey', 'hi', 'hello'])
```

```
Out[17]: 'hi'
```

function

- To add elements to the end of a list, we use the **append method**.

Note that the **append** method is **destructive**, because it does something other than return an output. We try to avoid destructive operations when possible.

```
In [ ]: mixed_list.append("zebras") # No output, but has a side effect!
```

```
In [ ]: ...
```

method of lists ; uses dot notation





Activity

Suppose we run the cell below.

```
total = 3
def square_and_cube(a, b):
    return a ** 2 + total ** b
```

total = 3

run 1: a = 1, total = 3, b = 2

1² + 3² = 10

Then, suppose we run the cell below twice.

```
total = square_and_cube(1, 2)
```

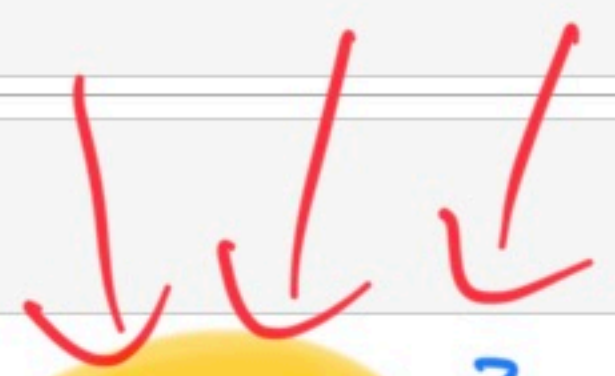
total = 10

What is the value of total? Try and answer without writing any code.

run 2: a = 1

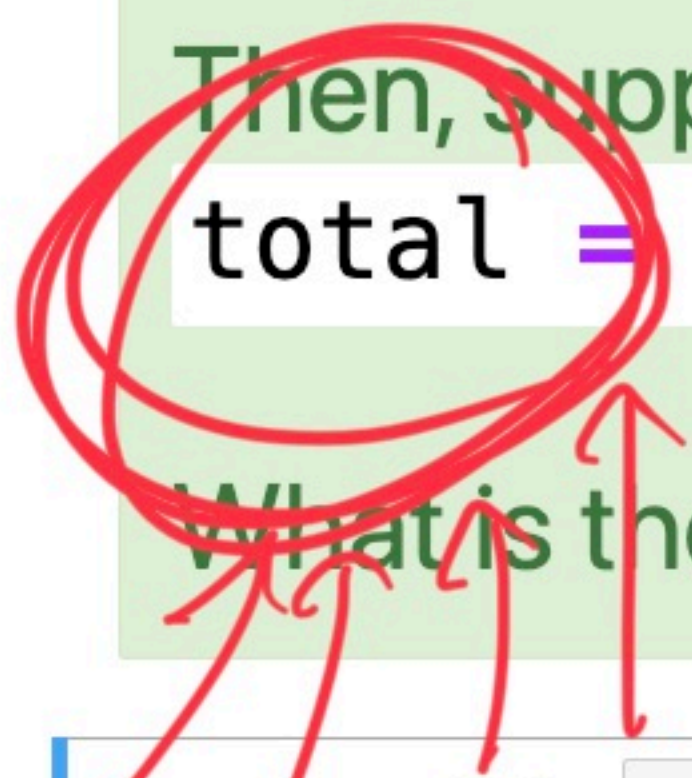
total = 10

b = 2



1² + 10² = 101

total = 101



explicitly reassigning

In []:

In []:





Cell B

```
mystery(creature)
creature
```

Try and answer without writing any code.

```
In [58]: def mystery(vals):
         vals[-1] = 15
         return vals.append('BBB')
```

changes last element to be 15

adds "BBB" to end of list

```
In [59]: hello = [4, 5]
         mystery(hello)
```

None

no return value!
mystery doesn't return anything; it just has side effects

```
In [60]: hello
```

```
Out[60]: [4, 15, 'BBB']
```

Part 1

```
In [ ]: creature = [1, 2, 3]
        mystery(creature)
```

