CHAPTER 6

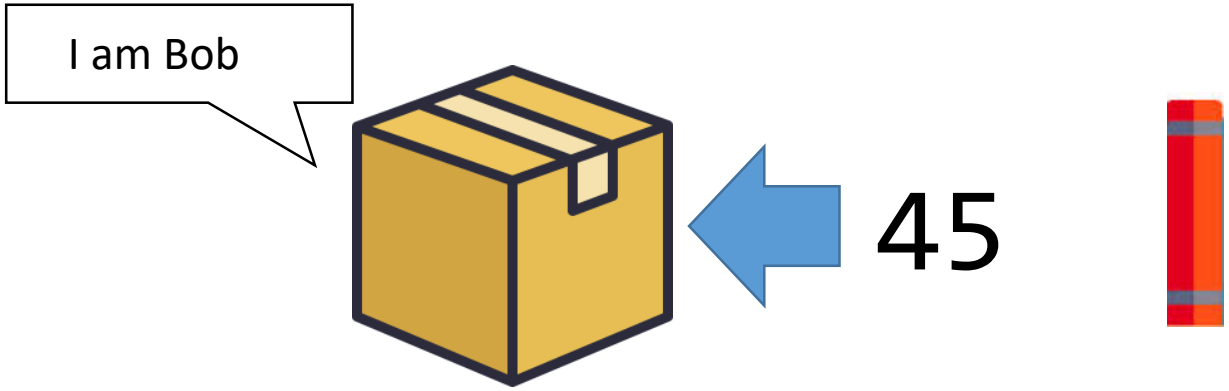
ARRAYS

PART 1

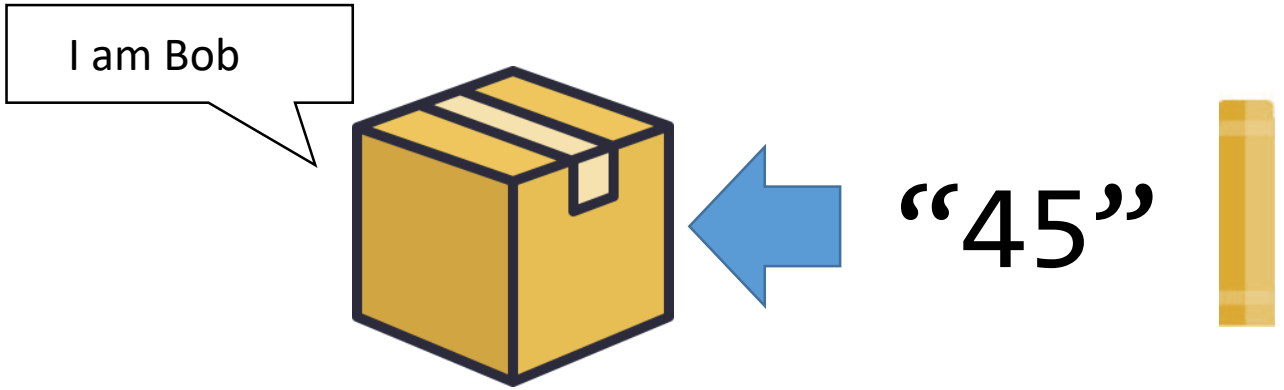
DEFINE, ACCESS, BROWSE

A variable has a name and contain a data

bob = 45



bob = “45”



Simple types of data :

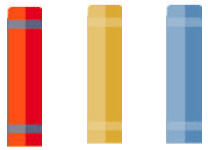
Integer 1 5

Float 1.45

Boolean True

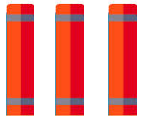
String “blabla”

Array : data containing other data



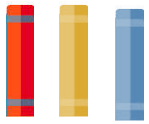
Array [14, “ronan” , 18.4]

Arrays can contains any type of value



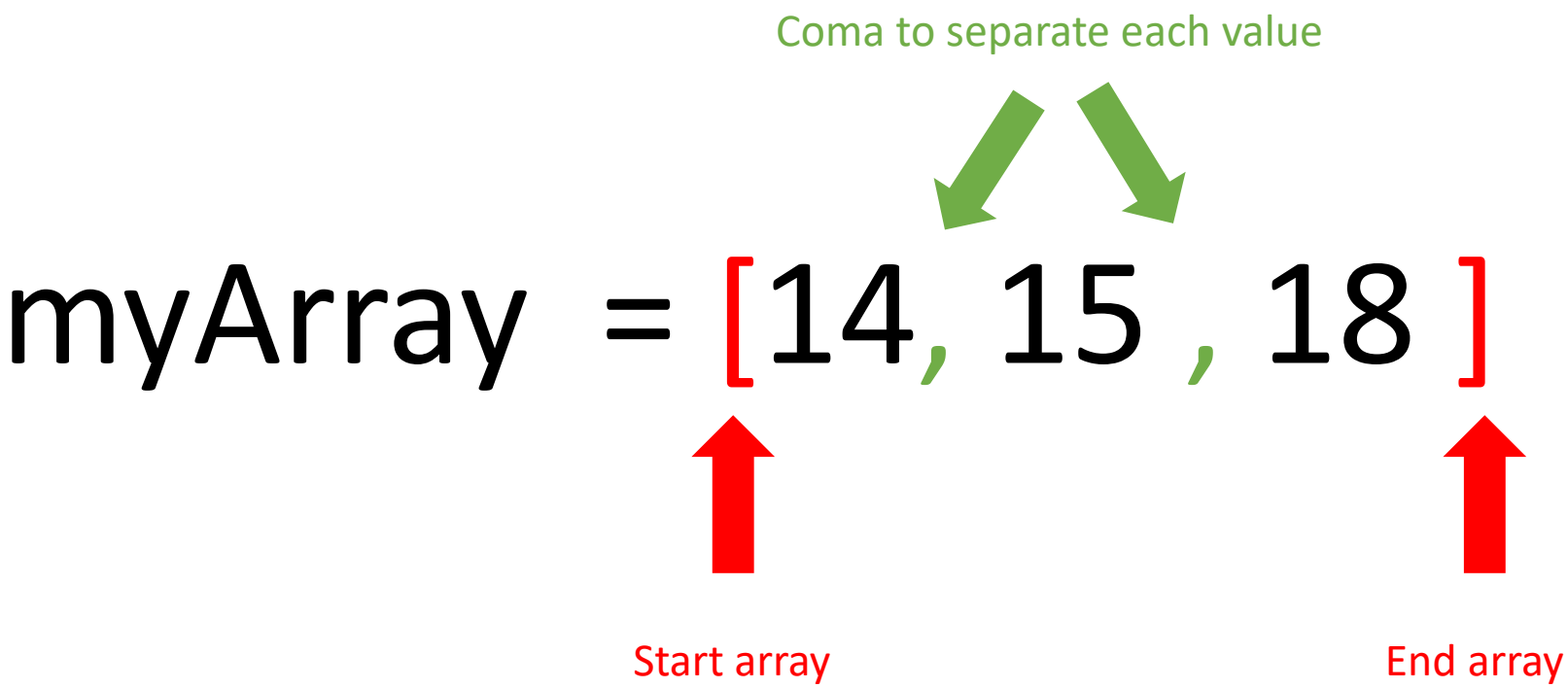
Array of integers [14, 15 , 18]

Array of strings [“banana”, “coconut”]



Array of mixed types [14, “ronan”, True]

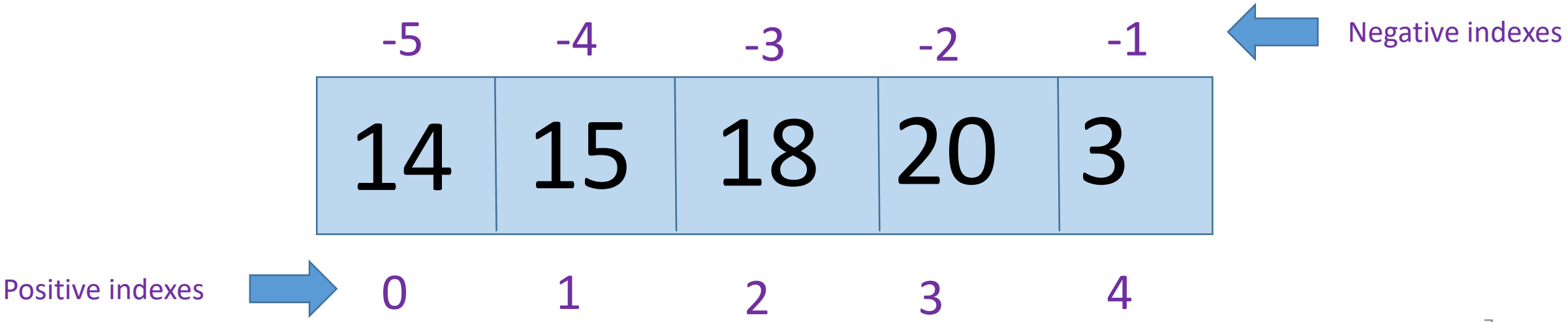
Let’s define an array !



Let's access to array elements !!

```
myArray     = [14, 15 , 18, 20 , 3 ]
myElement = myArray[2]
```

index



What this code will print ?

```
myNumbers = [5, 2, 8]
print( myNumbers[-1] )
```

What this code will print ?

```
myNumbers = [5, 2, 8]
print( myNumbers[3] )
```

What this code will print ?

```
print(len("45"))
print(len([45]))
```

What this code will print ?

```
print(len(45))
```

What this code will print ?

```
print( len("ronan, pnc") )
print( len( ["ronan","pnc"] ) )
```

2 ways to loop on array !!

Using array index

```
array = [1, 2, 3, 4, 5]
for index in range(len(array)):
    value = array[index]
    print("hello " + str(value))
```

More customizable

Using array values

```
array = [1, 2, 3, 4, 5]
for value in array:
    print("hello " + str(value))
```

Shorter way to loop

What this the meaning of this function?

```
def fonction1(myArray):
    m = myArray[0]
    for value in myArray:
    if value > m :
        m = value
    return m
```

What this code will print ?

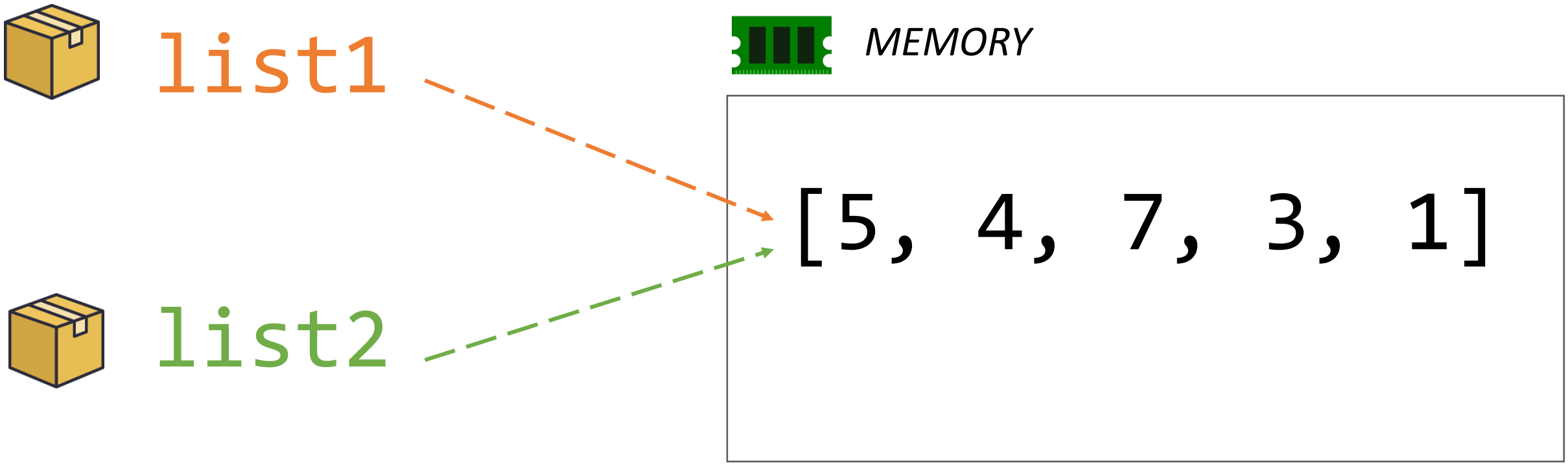
```
list1 = [5, 4, 7, 3, 1]
list2 = list1

list1[0] = 99

print(list1[0])
print(list2[0])
```

And why ?!!

list1 and list2 are referring to The same value in memory !!



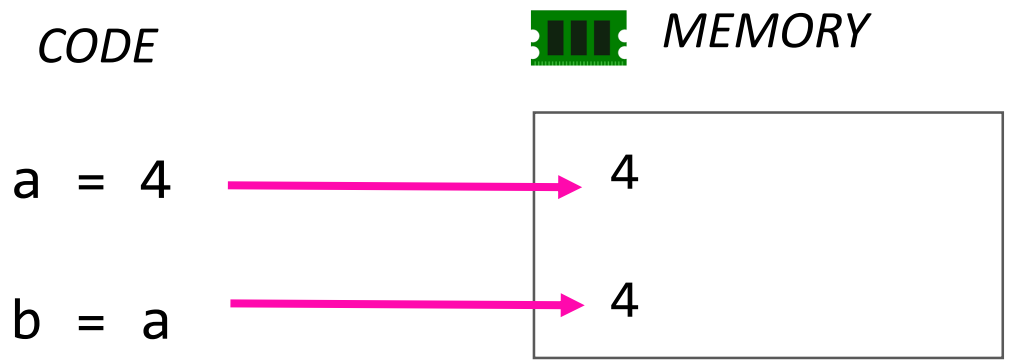
What this code will print ?

```
a = 5
b = a
a = 7
print(b)
```

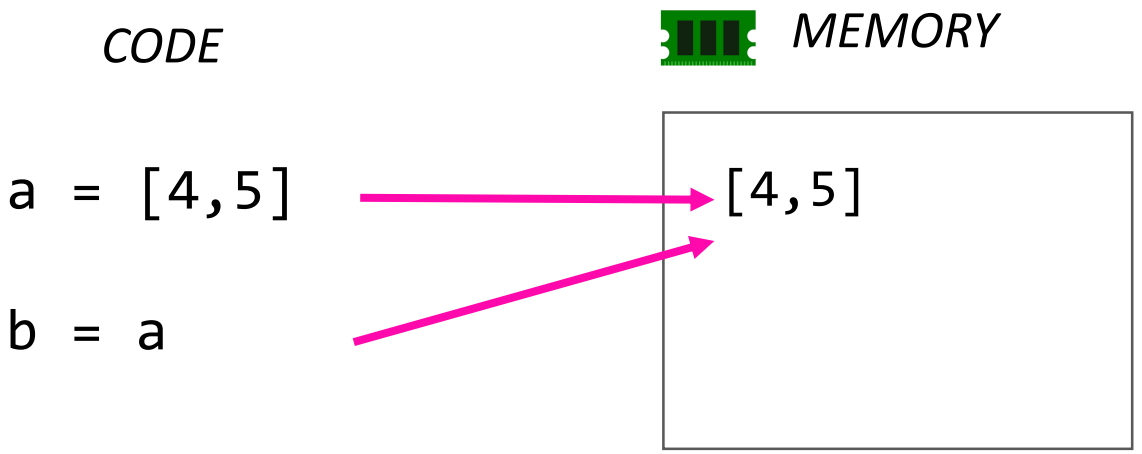
And why ?!!

Make the difference !

Integer, string, boolean
→ We duplicate the value
In memory



Array
→ We refer to the same value
In memory



What this code will print ?

```
a = [18,24]
b = a
a[1]=3
print(b[1])
```

And why ?!!