# Lab 3.04 - Aliasing & Scope

## In Your notebook

### Aliasing

1. Will updating b affect a? Explain why or why not.

a = [1, 2, 4]  
 b = a

1. Predict what my\_list list will print out when this code is run. If you are not sure, test the code by copying and running it.

# input: a list of ints # output: an int **def** update\_list(a\_list): a\_list[3] = "yo" b = a\_list[4] b = 100 my\_list = [1, 2, 3, 4, 5] update\_list(my\_list) print(my\_list)

### Scope

1. Draw a stack diagram for the following:

var\_1 = "kittens" var\_2 = "cookies" # input: a string # output: a string **def** my\_function(my\_favorite\_things): song\_lyrics = "raindrops on roses, " combined\_song = song\_lyrics + my\_favorite\_things **return** combined\_song # input: a string # output: a string **def** my\_function\_2(item, item2): full\_lyrics = item + " on " + item2 full\_song = my\_function(full\_lyrics) **return** full\_song my\_song = my\_function\_2(var\_1, var\_2)

## Complete the following on your own:

1. Write down what (if anything) is wrong with the following code.
2. If there is an issue, write out how to fix it.
3. If you are unsure, copy and run the code and fix it

### Problem 1

var\_1 = 'cat' var\_2 = 'dog' **def** print\_out\_my\_favorite(favorite\_pet): **if** favorite\_pet == var\_1: print("My favorite pet is the cat.") **if** favorite\_pet == var\_2: print("My favorite pet is the dog.") var\_1 = 'dog' var\_2 = "cat" print\_out\_my\_favorite(var\_1) print("var\_1:" + var\_1 + " var\_2:" + var\_2)

### Problem 2

var\_1 = 'cat' var\_2 = 'dog' **def** print\_out\_my\_favorite(favorite\_pet): var\_1 = 'dog' var\_2 = 'cat' **if** favorite\_pet == var\_1: print("My favorite pet is the cat.") **if** favorite\_pet == var\_2: print("My favorite pet is the dog.") print\_out\_my\_favorite(var\_1) print("var\_1:" + var\_1 + " var\_2:" + var\_2)

### Problem 3

var\_1 = 'cat' var\_2 = 'dog' **def** print\_out\_my\_favorite(favorite\_pet): **if** favorite\_pet == var\_1: print("My favorite pet is the cat.") **if** favorite\_pet == var\_2: print("My favorite pet is the dog.") print\_out\_my\_favorite(var\_1) print("var\_1:" + var\_1 + " var\_2:" + var\_2)

## In your console

### Write a program using the following specifications:

1. Program includes a global variable, my\_num.
2. Create three functions that update my\_num
3. add2: this function adds 2 to my\_num
4. multiply\_num: this function takes in a parameter, multiplier, and multiplies my\_num by that parameter
5. add2\_and\_multiply: this function takes in a parameter, multiplier, and calls add2, then calls multiply\_num.

### Complete the program

Write the following code in the main part of the program:

1. set my\_num to some initial value you choose
2. print my\_num
3. call add2\_and\_multiply() with some argument you choose
4. print the final value of my\_num
5. Confirm that the printed values match what you expected