## 15-110 recitation 06

## Recap

- lists- indexing, len, max, sum, splicing, iterating
- List aliasing
- Sort, append, remove
- 2D lists

#### Reminders!

**HW 3 Check-in #2** due Monday! Submit Exam Regrade Requests over Gradescope!

# **Problems**

**Problem** 

### debug lists

```
Identify the bug in the following functions and describe how to fix them.
# The following function returns a string that is the
# concatenation of all the strings in a list
def f1(string list):
   big string = ""
   for string elem in range(0,len(string list)):
      big string = big string + string elem
   return big string
# The following function return a list that contains all the
\# non-negative integers less than n that are a multiple of k
def f2(n, k):
   multiple list = []
   for i in range (0, n):
        if (i % k == 0):
            multiple list.append([i])
   return multiple list
# The following function take a list of integers as input
# to the function, and will return a list that has all
# the even elements removed.
def f3(integer list):
    for element index in range(0,len(integer list)):
        if (integer list[element index] % 2 == 0):
            integer list.pop(element index)
   return integer list
```

Bug/Fix in f1:		
Bug/Fix in f2:		
Bug/Fix in f3:		

## list aliasing

What is a after the code is executed?

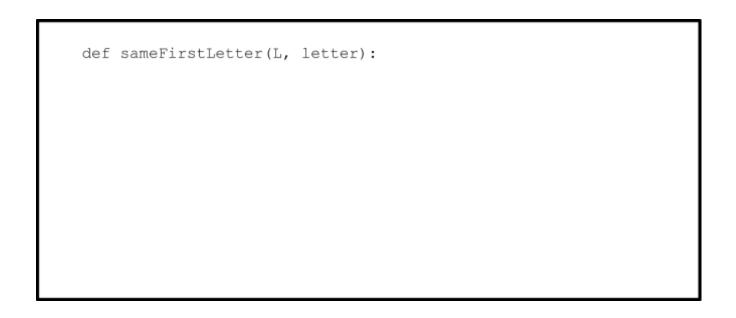
What is b after the code is executed?		
What is b after the code is executed.		

#### same first letter

Problem

Given a list of students in the class, write a function that returns the names of students who have the same first letter in their name.

Variation: the number of students who have names that start with a particular letter



#### 2D lists rundown

```
Problem

a = [ [ 2, 3, 5] , [ 1, 4, 7 ] ]

How many rows are in a?

# dimensions
rows = len(a)
cols = len(a[0])

for row in range(rows):
    for col in range(cols):
        a[row][col] += 1 <- how many times will this line be run?

What is a?
```

# 2D aliasing

Problem	rows = 3 cols = 2			
	a = [ [0] * cols ] * rows			
	What is a?			
	a[0][0] = 42			
	What is a?			
	<pre>def make2dList(rows, cols, defaultValue=0):     a=[]     for row in range(rows):         a.append([defaultValue]*cols)     return a</pre>			
	rows = 3 cols = 2			
	a = make2dList(rows, cols, 0)			
	a[0][0] = 42			
	What is a?			