**Programming Exercises Part II: Name: Ryan Kyger**

This week we went over:

Loops, Lists and Dictionaries and Files. Chapters 9 and part of 10 in Practical Computing for Biologists.

**Part I: Short Answer**

1. *Name one place you can go to get help with python?*

The python.org documentation pages for python 3.

1. *What is an if statement and when would you use one?*

An if statement allows you to test if something is TRUE or FALSE.

You would use an if statement to perform a specific task or tasks based on whether a condition is TRUE or FALSE.

1. *From this list: container\_list = [‘can’,’jar’,’hat’]. What would be returned from this: container\_list[0,2]. Hint: Remember one number is inclusive and one exclusive.* ***[0:2]***

*['can', 'jar']*

1. *From what we learned in class how would you turn a list into a string?*

my\_list = [‘a’, ‘b’, ‘c’]

string\_list = ‘’.join(my\_list)

1. *What is the difference between an if statement and a while loop?*

An if statement allows you to test if something is TRUE or FALSE.

A while loop is loop that will keep running a specific task for as long as a specific condition is TRUE.

1. *What would you get if you typed in fruit\_dict.keys() after entering this dictionary:*

*fruit\_dict = {}*

*fruit\_dict[‘apple’]=10*

*fruit\_dict[‘pear’] = 3*

*fruit\_dict[‘walnut’]=216*

dict\_keys(['apple', 'pear', 'walnut'])

**Part II: Practice**

\*\* for bonus points put your scripts and pseudocode up on github and send me the link!

1. *As part of this exercise please practice in python. Practice print statements, adding input from the command line and making and editing variables of different types. Add in practicing if statements, for and while loops and dictionaries.*
2. *Write the pseudocode to do the following. Create a list of numbers (any numbers you like). Then loop through the items in the list adding 1 to every number and print those numbers.*

pseudo-code:

1. make list of numbers

2. loop though each number in list

3. add one to each number

4. print out new numbers

1. *Write the script with documentation to do number 2.*

script name: add-one.py

1. *Write the pseudocode to do the following. Create a dictionary of animals and their sizes (make up whatever you want... NO SNAILS!). Print out the keys of the dictionary. Make a list of all the animals and then write an if else statement to print out the animal name and the word “big” if the weight is over 20 grams and the word “small” if the weight is less than 20 grams.*

pseudo-code:

1. make dictionary of animal and their sizes

2. print the keys of the dictionary

3. loop trough each key-value pair in dictionary

4. print “Big” if size is bigger than 20

5. print “Small” if size is less than 20

script name: animal-dict.py