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

This week we went over:

Basic building blocks of Programs – chapter 7 in Practical Computing for Biologists

Started on Beginning python programming Chapter 8

**Part I: Short Answer**

1. *Name one of the basic building blocks of programming and a small definition.*

Function: a small program that performs a specific task

1. *Match the data type to the appropriate data*

string ‘I am a programmer’

integer 123

boolean True

floating point 34.63221

1. *What would I get if I did tried to add these to numbers together 123 and 5.*

*a) if the numbers were formatted as strings*

“1235”

*b) if they were formatted as integers*

11

1. *Lists are one dimensional arrays and are a series of items also called vectors. From the following list what would the question apple\_list[3] return?*

*Remember we refer to items in a list by their position. Hint – remember how computers count.*

apple\_list=[‘banana’,’pear’,’kumquat’,’pomegranate’,’passion fruit’]

apple\_list[3] will return ‘pomegranate’

1. *Name a difference between lists and dictionaries?*

A list is a one dimensional array.

A dictionary is an associative array, where values are accessed via keys.

1. *What would you get from this question from this dictionary: apple\_dict[‘pear’]*

fruit\_dict = {}

fruit\_dict[‘apple’]=10

fruit\_dict[‘pear’] = 3

fruit\_dict[‘walnut’]=216

fruit\_dict[‘pear’] will return 3

1. *In python what does the function .replace() do?*

The python method *.replace()* allows you to replace a character or characters in a string with different character or characters.

1. *How do you print something in python? For example write a print statement to print “hello world!”*

print(“hello world!”)

**Part II: Practice**

\*\* for bonus points put your scripts up on github and just 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.*
2. *Create a python script,* ***with documentation****, that would take this number 112345678911234566 and count the number of 2s in the string. What is the name of the script?*

Script name: number-count.py

1. *Create a python script,* ***with documentation****, that would take a sentence from user input, turn it all to lowercase letters and remove the spaces and count the length. You choose the sentence. What is the name of the script?*

Script name: sentence-change.py

Input Sentence used to test: Hello World