Questions from previous exams:

1. Basic data types, keyboard input and conditional statements

* The front tires of a car should both have the same pressure. Also, the rear tires of a car should both have the same pressure (but not neccessarily the same pressure as the front tires.) Write an interactive program that gets from the keyboard the pressure of the four tires and writes a message that says if the inflation is OK or not and also displays the average pressure of all the tires.

Input right front pressure

38

Input left front pressure

38

Input right rear pressure

42

Input left rear pressure

42

num = int(input("Input right front pressure \n"))

num2 = int(input("Input left front pressure \n"))

num3 = int(input("Input right front pressure \n"))

num4= int(input("Input left front pressure \n"))

* For each of the following statements, give the value contained within x and the data type of that value when the statement is executed by the Python interpreter.

Value Data type

1. x= 14/3
   1. 4.666666666666667
2. x= 9%4
   1. 1
3. x = len(“Hello World”)
   1. 11
4. s= ‘hello world’
   1. hello world
5. x = s[6]
   1. w
6. mylist = [“ab”,”CDE”,”x”]

x = len(mylist)

* 3
* Write a series of if statements that will evaluate your grade contained within a variable called semesterGrade and displays your letter grade according to your course syllabus:

**90-100  A     87-89   B+     80-86    B     77-79   C+**   
**70-76 C        below 70 F**

1. For Loops:

* What will be displayed to the screen when the following for loop is executed?

for i in range (5,10,2): #start,stop,step

print ( i)  
 print (“we are here”)

* + Display
    - 5
    - we are here
    - 7
    - we are here
    - 9
    - we are here
* What exactly does the following code display to the screen?

print (' ',end ='')

for i in range (1,5):

print (i, " ",end='')

print ('\n ',end='')

value = 0

for j in range (0,10):

print ('-',end='')

print ()

for x in range (1,3):

print (x,'|',end='')

for y in range (1,5):

print ((value+1) \*y, ' ',end='')

print ()

value = value + 1

1 2 3 4

----------

1 |1 2 3 4

2 |2 4 6 8

* Write a short segment of code that will ask the user for 100 integers. (use a for loop) After all integers have been read, your code should then display the largest integer, the smallest integer and the average of the integers entered from the keyboard.
* Write a program that asks the user to enter a word. The program will then display the word for as many times as it has characters: use a for loop

Enter a word: Hello

Hello

Hello

Hello

Hello

Hello

count = 0

while (count < 5):

count = count + 1

print("Hello")

1. While loops

* What would the output of the following code be when executed?

A = 19

B = 7

while A > B:

print (A,B)

if (A + B) < 24:

B = B + 5

else:

A = A – 2

19 7

17 7

15 7

15 12

13 12

* Write a while loop that prompts the user for a password. If the password entered does not equal “OpenSesame” , display an error message and prompt for the password again. If after 3 tries the user does not enter the right password display, “access is denied”.
* Write a program that asks the user for a starting value and an ending value and then writes all the integers (inclusive) between those two values. Use a while loop.

1. Lists and strings:

* Perform the following using the list and string defined below:

Mylist = [“orange”,”banana”,”apple”,”grape”]

Mystring = “314-800-2346”

1. What does Mylist[2] equal? ‘apple’
2. What does Mystring[2] equal? ‘4’
3. What does the len(Mylist) equal? 4
4. What does len(Mystring) equal? 12
5. Write a for loop that will display the strings in Mylist from last to first. - shows in my notes
6. Write a line of code that appends “pear” to Mylist - shows in my notes
7. Dictionaries:

* Given the following dictionary definitions:

Foo = {1:’B’, 2:’D’, 3:’C’, 4:’A’}

Bar = {A:’3’,’B’:1,’C’:2,’D’:4}

Give the resulting value for each of the following expressions: 12 points

Foo[Bar[‘A’]]

Foo[Bar[‘B’]]

Bar[Foo[1]]

Bar[Foo[2]]

* Use a for loop to display the key/value pairs in the above dictionary, one pair to a line.

1. Precedence of operators:

* What does the following expression evaluate to?  
  5 //2 + 3 \* 9 – 4%3
* x = 5 //2 + 3 \* 9 - 4%3
* print(x)
* 28