March 11

Weight: 20%

QUIZ

**Part One: Programming Questions**

**QUESTION ONE: Password Checker (10 points)**

Write a program that incorporates an algorithm with a function that will check whether or not a string is in a valid password format with the following rules:

A password must have at least ten characters.  
A password consists of only letters, digits and symbol(s).  
A password must contain at least two digits.

A password must contain at least one uppercase letter

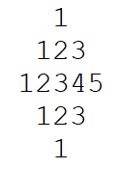
A password must contain at least one special symbol

Your program should continue to prompt until the user enters a valid password.

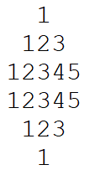
Regular expressions (regex) are not allowed!

**QUESTION TWO: Diamond Pattern (5 points)**

Write a program that prompts and takes an input from a user with values ranging from 4 to 10 and that prints the following pattern(s):



If the user enters an odd number such as ‘5’ the pattern above will be printed to the console. However, if the user enters an even number such as ‘4’ or ‘6’, then the following patterns will be printed instead:

When the number is even, the middle row will be repeated and for odd numbers the middle line is only shown once (as seen in the first screen shot above). Ensure your program has the correct algorithm and is not simply printing several different patterns statically, else you will not receive any marks!

In general your program should behave like the following:

1. Display a welcome message and prompt the user for the input value. The input value should be greater than 4 and less than 10. Keep prompting the user until the input value is valid.

2. Display the pattern and ask the user if they want to continue with the program.

3. As long as the user wants to display another pattern your program repeats steps 1-2

4. Display a closing message if the user decides to quit (create an option to quit)

**Part TWO: Multiple Choice (5 points)**

Highlight one answer per question (.5 points per question)

1) Which of the following properly determines the number of items in object x ?

a) len(x)

b) count(x)

c) x.len()

d) x.length()

e) None of the above

2) Which character can be used to split a statement over multiple lines?

a) /

b) ;

c) \

d) :

e) None of the above

3) Which of these literal forms will result in a syntax error?

a) a = [1,2,3,4]

b) a = [1,2, “four”]

c) a = [1 2 4]

d) a = [1, 2, 4]

e) None of the above

4) What is the result of the following expression: “12” + “34”

a) “12+34”

b) ‘1234’

c) It’s a syntax error

d) 46

e) 1234

5) What is the fundamental difference between a list and a tuple?

a) Lists can be nested, tuples cannot

b) Lists cannot be mutated, whiles tuples can

c) Lists can be mutated, while tuples cannot

d) Only list can be subclassed

e) Lists have no length limit

6) Is it possible to swap values of a and b using the following expression a, b =b , a

a) Yes but only for string variables

b) No

c) Yes but only for numeric values

d) It is always possible

e) None of the above

7) Which of the following incorporates a literal dictionary

a) my\_dictionary = dict("a": 123, "b": "value", "c": "test")

b) my\_dictionary = ("a": 123, "b": "value", "c": "test")

c) my\_dictionary = "a" => 123, "b" => "value", "c" => "test"

d) my\_dictionary = ["a": 123, "b": "value", "c": "test"]

8) Why do we need nested **if** conditions?

a) Nested if helps in executing commands even if the parent condition is not passed

b) To check for a sequence of conditions before a statement is executed

c) Nested if condition lets us create an else statement

d) Nested if checks all the elif statements regardless of its True or False

e) None of the above

9) What is the output of the following program?

def func(a,b,c):

print(a,b,c)

a) 0,0,0

b) No output, function has not been called

c) 1,2,3

d) Error because the function hasn’t been called

e) None of the above

10) What is the purpose of using a function in a program?

a) To create blocks of code for reusability

b) To execute a certain existing mathematical expression

c) To use looping structures

d) To import code from other sources

e) None of the above

When complete zip together your .**py** files together with the word file of your solutions for the multiple choice questions and upload on omnivox before the end of class. Complete and submit individually.