COSC 101: Fall 2017
Lecture 06: Modules & for Loops

Exercises
1. What is the output of this program? If there are any errors, fix them.
   ```python
   import math
   print( (6+3).sqrt() )
   ```

2. What is the output of this program? If there are any errors, fix them.
   ```python
   import math
   for num in range(10):
       print( math.floor(num * 0.5) )
   ```

3. What is the output of this program with the input “4”. (If there are any errors in the program, fix them.)
   ```python
   import random
   num = input("Give me a number: ")
   for i in range(num):
       j = round( random.random() * i, 2 )
       print( "(" + str(i) + ") " + str(j) )
   ```
4. What is the output of this program with the inputs “Alice” and “Barbara”? (If there are any errors in the program, fix them.)
   ```python
   count = 0
   name = input("what is your name?" )
   for letter in len(name):
       if letter == "e":
           count += 1
   print("Your name has", count, "'e's in it.")
   ```

5. What is the output of this program with the input “dog”?
   ```python
   word = input("A word, please: ")
   word2 = ''
   for letter in word:
       word2 = letter + letter + word2
   print("Your word reversed and duplicated", word2)
   ```

6. What is the output of the above program with the input “apple”? 
7. Write a program that asks the user for a word and prints the palindrome of the word (e.g., if the user enters “dog” the output would be “doggod”)

8. What does the following program do? If there are any errors, fix them.

```python
import random
how_many = int(input("How many times do you want to play? "))
for turn in range(how_many):
    magic_number = random.randrange(1,11)
guess = int(input("Guess a number (1–10): "))
if guess == magic_number:
    print("You were right!")
elif guess > magic_number:
    print("Your guess was too low...")
else:
    print("Your guess was too high...")
```
Each of the following diagrams represent a Python program. What would the output of these programs be with a few different inputs or sets of variables? Write the code for each program and test that you get the output you expected.

9.
11.

```python
x = "apple"
y = "banana"

if x != y:
    print(x+' is the best fruit ever!')
else:
    print('I love to eat, eat, '+
        'eat, '+x+'s and '+'y'+
        's!')
    z = input('What is your '+
        'favorite fruit? ')
    if x == z:
        print('I like '+x+'s and '+
            'you like '+z+'s.')
    else:
        print('We both like '+
            x+'s!')
```
13. for x in range(y)
   complete
   print(x)
   print('all done')

14. x < y
   False
   for x in range(y)
   complete
   print(x)
   print('all done')

   True
   for x in range(y)
   complete
   print(x)
   print('all done')