CIS 122 Summer 2015

Project 5:Testing, Debugging and Random

Due: Thursday 6th August 2015 5:00 PM

Goals:

By the end of this assignment you should be able to:

- 1. Debug and Test Code
- 2. Write programs using random.

Getting started: This homework uses the editor window (open Idle, then go to the menu and choose File>New File (may say "New Window" in some versions), a shortcut is ctrl+N on Windows, probably command+N on Macs.

Add comments to indicate the start of a problem using the # sign. Example: #Problem 1 The # sign tells Python to ignore everything after it.

Project Instructions:

Test Cases: Test cases are particular inputs that reveal the working logic of the program. Show inputs that would test every branch in your program.

```
Part 1: Debugging project5a.py
i)The following function is broken. The docstring describes what it is supposed to do.

def t_triangle(n):
    ""
(int) ->None
Prints a right triangle with n lines, where the first line prints 1 'T' and the last line prints n 'T's. If n <= 0, do not print anything. None value is returned.
For example,
>>>t_triangle(6)
T
TT
TTT
TTTT
TTTT
TTTT
TTTTT
TTTTT
```

```
ct = 1
while ct < n:
    print('T' * ct)
    return #None
```

- a.)Generate 5 examples to test t_triangle.
- b) Fix the bug(s) in the current version of t_triangle. Comment any code you change [5 points]
- **ii)** The following function is broken. fix the code so it works.

10 points

[5 points]

Write comments where you make changes

```
def find_min_and_max(values):

""(string)-> None
finds the minimum and maximum digits in a non-empty string of integers and prints them.
>>> find_min_and_max('45312')
The minimum is 1.
The maximum is 5.

""

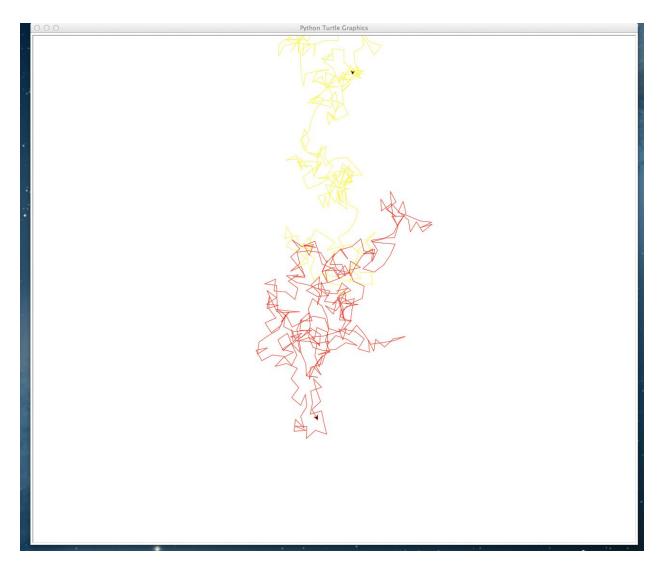
min = 0
max = 0
for value in values:
    if value > max:
        max = value
    if value < mine:
        min = value
    print('The maximum value is ' + max + '.')
    print('The minimum value is ' + min + '.')
```

iii) Another programmer was supposed to write a function that will average a bunch of survey values together while ignoring zeros. Unfortunately their code doesn't work and you've been tasked with fixing it. fix the code so it works.10 points

Part 2: Random project 5b.py

i) Using turtle(remember week2?), loops and random, design and implement a turtle function to simulate a random walk. Sometimes they create very nice patterns

Note: The aim isn't to have multiple turtles, it is write a program/function to simulate a random walk. XC for getting multiple turtles [10 points]



XC: upto 10 points Is there any other way you could combine random, loops and turtle? Please elucidate on what you make.

ii)Password generator:

Write a program that would help a user generate a 'random' password. Ask the user to input the Day and month they were born (eg. 1-30, Jan-Dec) and the name of their first pet. Using choice create a password that is 11 characters long. The generator follows the following formula

password= [3 random letters from the name]

+[3 random letters from pet's name]

+[3 random letters from birthday month]+ birthday date.

If you would like to take the month and date separately for the birthday it wouldn't be considered incorrect.

Usage:

>>>random_password()

Enter your name: Gautam

Enter your birthday:1 july

Enter the name of your first pet:Tuffy

Congrats Gautam your random generated 10 character password is aaGfTfyyy

>>>random_password()

Enter your name:Mitch

Enter your birthday:2 February

Enter the name of your first pet:lala

Congrats Mitch your random generated 10 character password is ihMllayyr2

XC +5: Make this a looping program to keep generating passwords. Keep track of the number of passwords generated.

+2: Initialize the seed using random.seed(seed), what do you observe?