MIDDLESEX
COMMUNITY COLLEGE

PROJECT 1--GUIDELINES & REQUIREMENTS

Due date: Monday, October 22, 2018

Project 15% of the total grade

Population project: (60 points)

Objectives: Develop and Design of basic project based on the Python concepts covered in the course including input output processing, decision & repetition structure, Boolean logic and functions.

Population problem Description:

Write a program that predicts the approximate size of a population of organisms. The application should use text boxes to allow the user to enter the starting number of organisms, the average daily population increase (as a percentage), and the number of days the organisms will be left to multiply.

When the program executes, it must at least do the following:

For example, assume the user enters the following values:

Starting number of organisms: 2

Average daily increase: 30%

Number of days to multiply: 10

The program also should display the following table of data:

Day Approximate	Population
1	2
2	2.6
3	3.38
4	4.394
5	5.7122
6	7.42586
7	9.653619
8	12.5497
9	16.31462
10	21.208998746000002

Optional: DO NOT allow user to enter character or string input, (5 bonus points will be award)

1. **File Naming:** Name each project in this exact format, no spaces, no punctuation characters:

Last name first initial assignment number. For example, if Adele Ramiros is submitting assignment 1, the name of the project would be: RamirosA1, and the name of the .zip file would be RamirosA1.zip.

2. **Code Header:** Standard industry practice to include documentation as part of the code you write. The code header below is required at the top of every code file.

This is an example of the Code Header. I recommend you copy and paste it, and update it to reflect your assignment information.

```
# Program:   Miles Per Gallon Calculator Program
# Written by:    Syeda A. Student
# Date:   03/01/2012
# Description:    This script will accept the number of miles and the number of gallons from the user.
# It will calculate the miles per gallon by dividing miles by gallons.
# Challenges:   I was confused about how to use add( ), so I looked it up in the textbook.
#Time Spent:  1 hour
# (provide 3 actual examples of input/output. Calculate the expected output before running your code! )
#User Input:  Expected Output:
#  ------------------------------------------------------------
# miles: 400, gallons: 20  mpg: 20
# miles: 425, gallons: 17.5  mpg: 24.29
# miles: 389, gallons: 18.6  mpg: 20.91
#

# The main function.

 def main():
```

3. **Code Coding Style:**

If you apply the **coding style your** code would look like this:

```
# declare variables:

choice = 0


# capture input
 radius = float(input("Enter the circle's radius: "))


#3. perform calculations

return   2 * math.pi * radius


#display output
print('The area is', circle.area(radius))
```

Note: You can also look at the program 5:28, page 222, chapter 5 from your text book for coding style.

4. **Comments:** Place a comment at the top of each variable, loops and functions that describes what it does.
5. You must use at least one variable, one capture input and one calculation.
6. You must hand in your own work. You may not share your assignment with anyone else. Please see the syllabus for more details of the anti-plagiarism policy for this class. If you hand in code that you did not write, you will receive a zero. If two people hand in the same code, they will both receive a zero.

Submission mandatory Requirements:

- Zip all the files of your script. Name the zip file as RamirosA1.zip. Submit the zip file through blackboard by the due date.
- No hard copies required
- **No** softcopies result in **0** points
- **(-10pts)** No Video Project presentation.
- After completion of pseudo code, flow chart and python script/program, you must create a video. You video should contain explanation of the code, what are the challenges you face, how did you manage to work, what portion of the code is not working or missed etc.

Happy Developing!!! ☺

Project 1 Assessment Rubric

				Points
1. **File Naming:** Name each project exact format, no spaces, no punctuation characters:last name first initial assignment number. For example, if Adele Ramiros is submitting assignment 1, #1, the name of the program would be: RamirosA1, and the name of the .zip file would be RamirosA1.zip.	Name each project in this exact format, no spaces, no punctuation characters **(5pts)**	Name Convention somewhat accurate **(3pts)**	Name Convention did not follow **(2pts)**	
2. flow chart	Use of appropriate symbols and flow logic correctly **(5pts)**	somewhat accurate **(3pts)**	Did not follow **(2pts)**	
3. Pseudo code	simple way describes a set of instructions **(5pts)**	somewhat accurate **(3pts)**	Did not follow **(2pts)**	
4. Code Header: The code header is required at the top of every script file.	Include documentation as part of the script. **(5pts)**	somewhat accurate **(3pts)**	Did not follow **(2pts)**	
5. Code Coding Style: • declare variables • capture input • perform calculations • display output	Follow all 4 steps**(5pts)**	Follow somewhat**(3pts)**	Did not follow **(2pts)**	
6. Appropriately followed name convention for all variables and functions that you used in your code	Appropriately name all variables, functions **(5pts)**	somewhat accurate **(3pts)**	Did not follow **(2pts)**	
7. **Comments:** Place a comment at the top of each variable, loops and function that describes what it does**.**	Place a comment at the top of each variable, loops and function that describes what it does**. (5pts)**	somewhat accurate **(3pts)**	Did not follow **(2pts)**	
8. Upload the correct **.zip file**.	Correct **.zip file**. **(5pts)**	somewhat accurate **(3pts)**	Did not follow **(1pts)**	
9. Video/audio for Presentation	Explain code properly. **(10pts)**	somewhat explanation **(5pts)**		
10. **Program run and execute perfectly (**according to the output including at least one variable, one capture input, one calculation and one function**) and your own work**.	Program run and execute perfectly**(10pt)**	somewhat accurate **(5pts)**	Copy piece of code from someone without declare**(0pt)**	