Assignment #09 – CREATING FUNCTIONS USING PYTHON

(Worth 15 points)

Description:

The purpose of this assignment is to create functions to solve the problems in these exercises.

RESOURCES NEEDED TO COMPLETE ASSIGNMENT: CHAPTER 5:

- Videos under the content link
- Sample handouts
- Practice exercises attached to the designated drop box for this assignment.

PART 1: CONVERT FEET TO INCHES PROGRAM (worth 7.5 points)-

☐ Convert Feet to Inches -Write a program that asks the user to enter the number of feet (this should be a real/float data type), then converts feet into inches. The conversion formula is as follows: One foot = 12 inches

1. ☐ **Create a main program to call the other functions (worth 1.5 points)**
2. ☐ **Create a function to check the float data type (worth 1 point)**
3. ☐ **Create a function to convert feet to inches (worth 1.5 points)**
4. ☐ **Create a function to write the results to an output file (worth 1.5 points)**
   a. ☐ **lastname_firstname_Feet_Inches_Output.txt (worth 1 point)**
5. ☐ **Add intro comments and comments throughout the entire assignment (worth 1 point)**

There should be at least 4 different functions, including the main function.

SAVE PYTHON FILE, FEET TO INCHES AS:

lastname_firstname_A9_Feet_To_Inches_functions.py

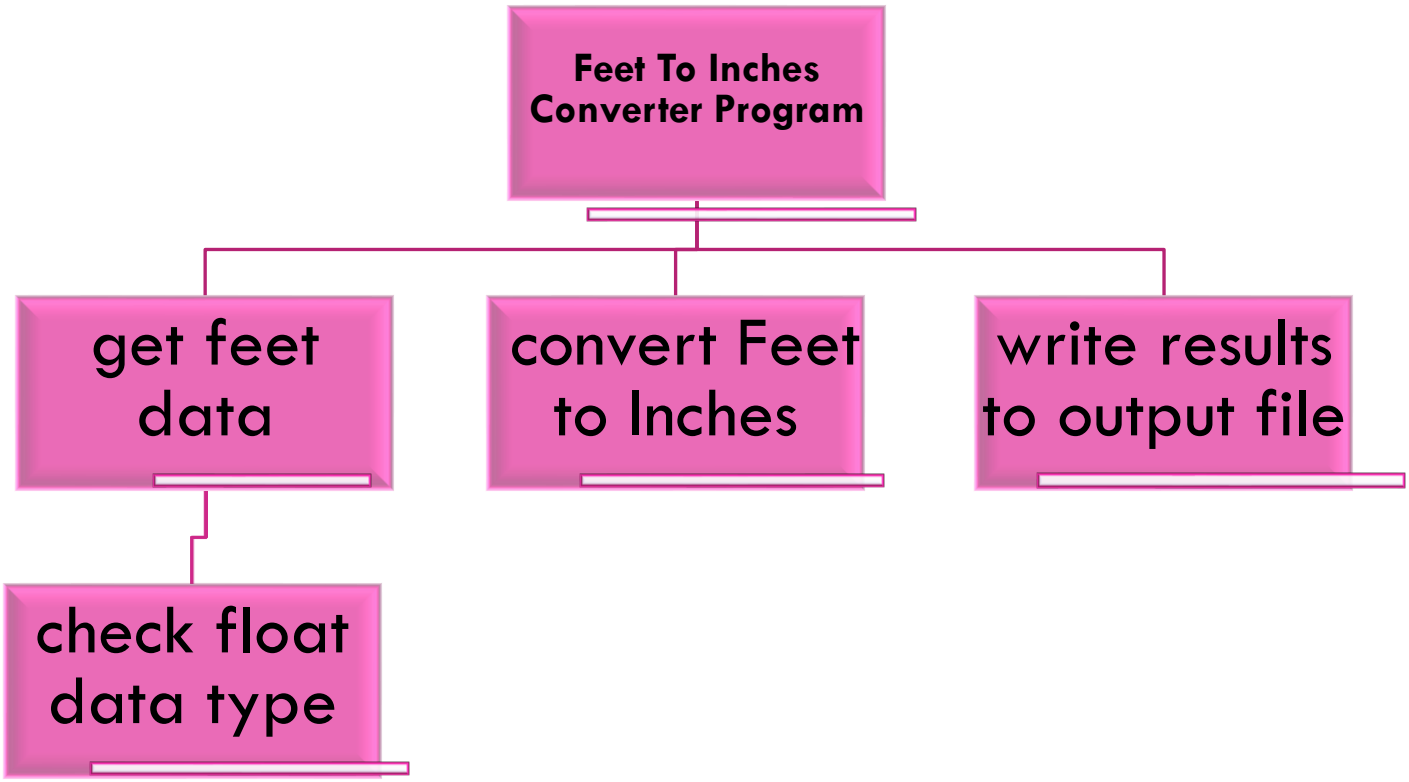
SAVE OUTPUT FILE, FEET TO INCHES AS:

lastname_firstname_Feet_Inches_Output.txt

Be sure to reference the sample programs especially the miles per gallon program to help you with these assignments.

Functions enable the programmer to break up a larger program into smaller tasks.

HIERARCHICAL CHART FEET TO INCHES



CREATING THE OUTPUT FILE

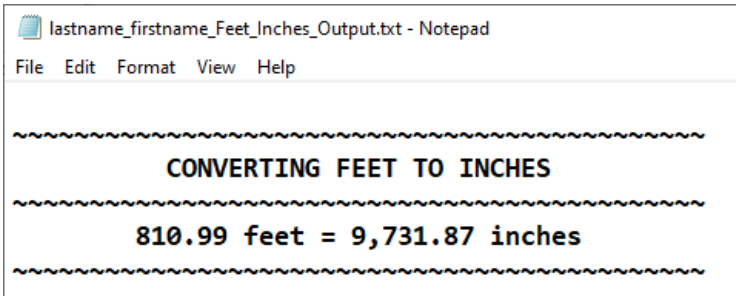
You may use the version, outFile = open(filename, "w") or include the .txt so that the user does not have to add the txt extension using:

outFile = open(filename + "txt", "w") as in some of the examples

Use the following sample data to run the program:

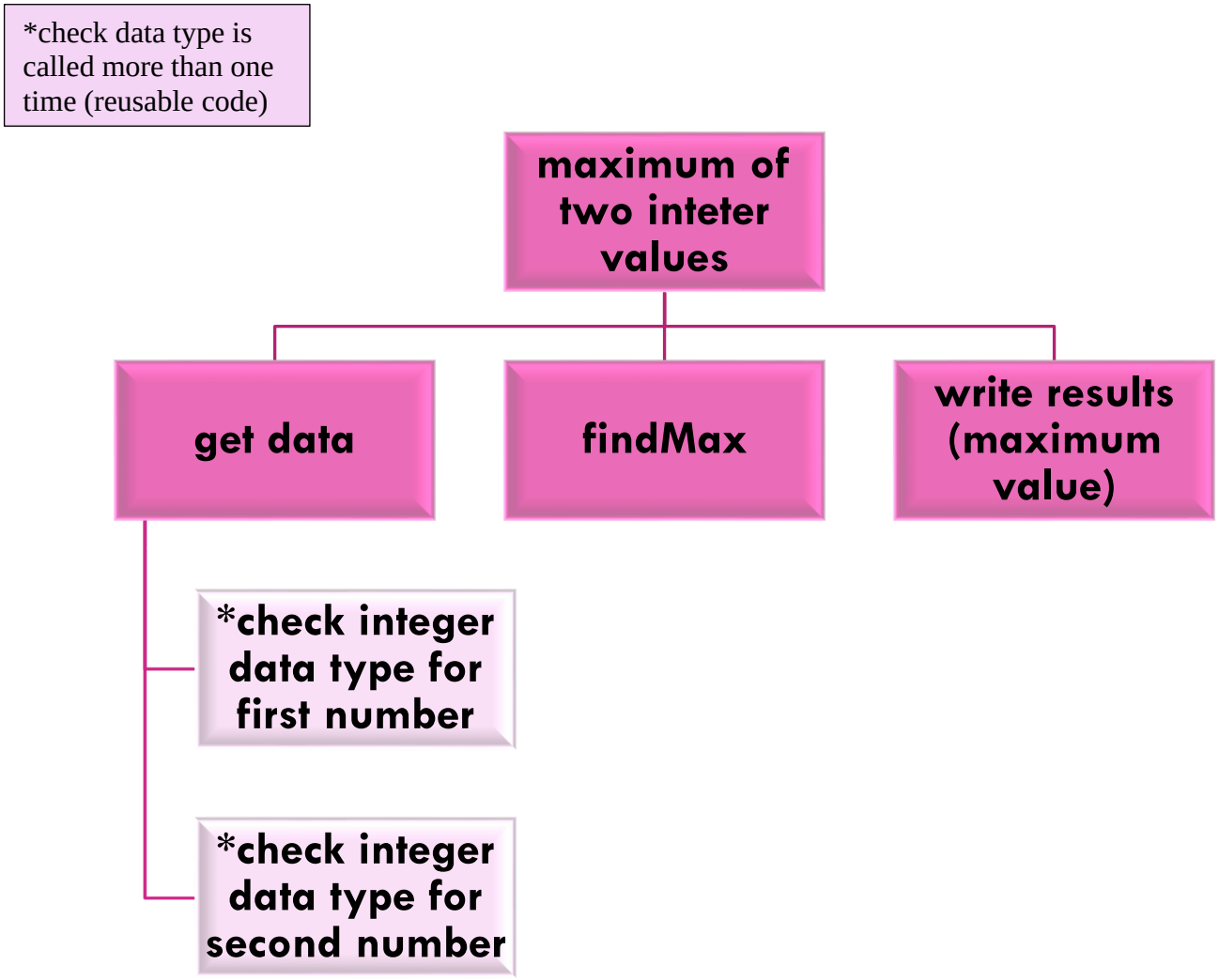
```
Enter the file name to write the output
type "txt" at the end of the file name
lastname_firstname_Feet_Inches_Output.txt
What is the number of feet you are attempting to convert to inches?
Please enter a positive numerical value only

-810.989
You entered a negative value -RE-ENTER A POSITIVE VALUE

810.989x
Wrong data type entered - RE-ENTER A POSITIVE VALUE

810.989
>>>
```

Your output will resemble the following inside the external data file:



PART 2: - Maximum of Two integer values (worth 7.5 points)

HIERARCHICAL CHART: Maximum of Two Integer values



Maximum of Two integer values (continued)

1. ☐ **Create the main function to call the other functions (worth 1.5 points)**
2. ☐ Write a function named findMax that accepts two integer values as arguments and returns the value that is the greater of the two. For example, if 7 and 12 are passed as arguments to the function the function should return 12. **(worth 1.5 points)**
3. ☐ You must also write a function, checkIntDataType, that checks to make sure the numbers are integer data type and are positive whole numbers. **(worth 1.5 points)**
4. ☐ Function to Write the results to an external output file **(worth 1.5 points)**
5. ☐ Include comments throughout the entire program **(worth 1.5 points)**

SAVE PYTHON FILE FOR MAXIMUM OF TWO VALUES

6. ☐ Save the file as: **lastname_firstname_A9_Maximum_Two_Values.py**

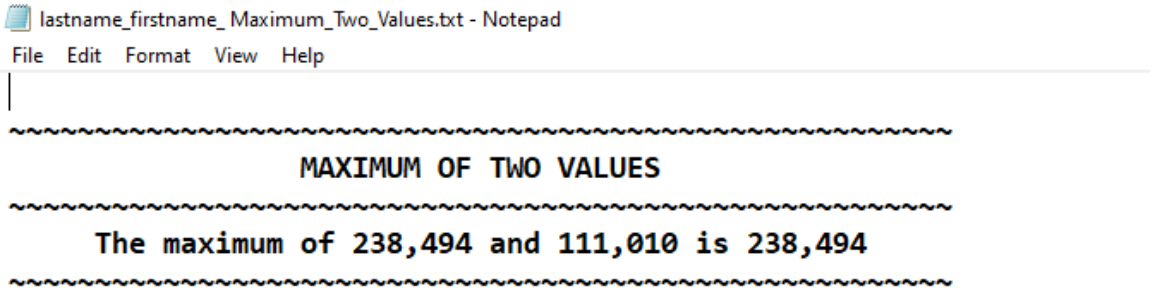
SAVE OUTPUT FILE FOR MAXIMUM OF TWO VALUES

7. ☐ Save the external output text file as:

   a) **lastname_firstname_Maximum_Two_Values.txt**

```
Enter the file name to write the output
type "txt" at the end of the file name
lastname_firstname_ Maximum_Two_Values.txt
Enter a positive whole integer for number 1:
238494a
Wrong data type entered - RE-ENTER A POSITIVE WHOLE VALUE

-238494
You entered a negative value -RE-ENTER A POSITIVE WHOLE VALUE

238494
Enter a positive whole integer for number 2:
j1111
Wrong data type entered - RE-ENTER A POSITIVE WHOLE VALUE

-1111
You entered a negative value -RE-ENTER A POSITIVE WHOLE VALUE

111010
>>>
```

Your output will resemble the following inside the external data file:



PART 3: Please view the video located under WEEK #11 to do part 3

1. ☐ **Go to each program and copy all the customized functions.**
2. ☐ **Paste them inside a new python program called myCustomFunctions.py**
3. ☐ **Save your customized functions inside a file called:**
   a. ☐ **myCustomFunctions.py**
4. ☐ **Next, place the import statement at the beginning of both programs, feet to inches, and maximum of two values**
   a. **from myCustomFunctions import ***
5. ☐ **Next, remove all the customized functions from the feet to inches program and maximum of two values**
6. ☐ **Resave the programs**
7. ☐ **In the main section of both programs, call the appropriate functions**
8. ☐ **Resave both programs and the myCustomFunctions programs**
9. ☐ **Run / Execute the programs to make sure they work**
10. ☐ **Submit the following programs inside the drop box for Assignment #09**

lastname_firstname_A9_Feet_To_Inches_functions.py
lastname_firstname_Feet_Inches_Output.txt

lastname_firstname_A9_Maximum_Two_Values.py
lastname_firstname_Maximum_Two_Values.txt

myCustomFunctions.py