## Instructions: 50 points total. Due by 11:59 pm on date specified via the Blackboard submission area in the module. Late submissions are docked 10% per day late.

1. The name of each Python file you send me should be of the form “Lab1\_probX.py”. Example: Lab1\_prob1.py for problem 1, Lab1\_prob2.py for problem 2, etc.
2. Follow variable naming rules (pick one) as described on pages 43-44.
3. Comment frequently in your code using the “# comment” convention described on pages 39-40. At a minimum, you should have a comment line at the beginning of the program with your name and what the program will do. Comments are for the programmer to see.
4. Display 1-2 print statements to the user on the purpose of the program before asking for any information. This is for the user to see.
5. Check the accuracy of the output you get out of your code. In other words, how do you know that the output is correct?
6. **Problem 1 - Personal Information (5 points):** 
   * Write a program that displays your name, number of pets in your residence, and your favorite summertime snack.
   * A series of “print” statements here is fine. Do not ask the user for this information. Information displayed should be in sentences. It should make sense to the user!
7. **Problem 2 – Carroll County Property Taxes (15 points):** 
   * Carroll County property taxes are calculated on the assessed value of the property. The rate is $1.018 per $100 of assessed property value for the period 07/01/2019 through 06/30/2020.
   * Write a program to ask the user for the assessed value of a property, calculate the Carroll County property taxes, and display that back to the user. Round to the nearest $0.01 and include the $ when giving the final amount.
   * Example: Property is assessed at $375,500. The Carroll County property taxes for this year would be $3,822.59.
8. **Problem 3 – Miles per Hour to Feet per Second Converter (10 points):**
   * Write a program to ask the user to enter a speed in miles per hour (mph) and then display the equivalent speed in feet per second. The conversion is 1 mph = 1.46667 feet per second. Make sure to give units of mph and feet per second after each speed when displaying this back to the user. Round to the nearest 0.1.
   * Use Google to check your answers.
9. **Problem 4 - Currency Converter for Euro (10 points):**
   * The currency in Europe is the Euro. Write a program to create a currency converter between the U.S. dollar and the Euro. The program should ask the user to enter an amount in U.S. dollars (to the nearest $0.01) and convert to the Euro. Round to the nearest 0.01. Exchange is $1 U.S. dollar = €0.91 as of 9/3/2019.
   * Also, I want you to give the answer using the € symbol (in front) when you convert the amount. Google the Unicode equivalent of the Euro symbol and use Python to print this character using the Unicode equivalent. Additional information on printing Unicode can be found at [https://docs.python.org/3/howto/unicode.html#](https://docs.python.org/3/howto/unicode.html). You can print Unicode characters similar to printing the special escape characters on page 67.
   * Use Google to check your answers.
10. **Problem 5 - Turtle Graphics Drawing – Estonian Flag (10 points):**
    * The City of Westminster has a sister city relationship with Paide, Estonia. Write a program to reproduce the Estonian flag using Turtle commands. Use section 2.10 in your textbook to figure out what you need to do. Use a thin blue or black line to outline the flag. Otherwise, we will not be able to “see” the bottom white band on the flag. To learn more about the Estonian flag, please visit [Flagpedia.net](https://flagpedia.net/estonia).
    * As a reminder, you will need to “import turtle” in the beginning of your code to have access to the correct commands.



1. **Problem 1 - Personal Information (5 points):** 
   * \_\_\_\_\_\_ (3) Use print statements to display name, number of pets, favorite summertime snack in sentences.
   * \_\_\_\_\_\_ (2) Give a comment in your code.
2. **Problem 2 – Carroll County Property Taxes (15 points):**   
   * \_\_\_\_\_\_ (2) Ask the user for the assessed value of the property and store in an appropriate variable.
   * \_\_\_\_\_\_ (2) Store the Carroll County tax rate in a variable called “Carroll\_property\_tax\_rate” at the beginning of your program and use this variable in your calculations so as to not have “Magic numbers.”
   * \_\_\_\_\_\_ (5) Calculate the Carroll County property tax for this year correctly. Use the variables listed above.
   * \_\_\_\_\_\_ (2) Display the amount of property tax to the user, rounded to the nearest $0.01 and give $ as your units.
   * \_\_\_\_\_\_ (4) Give purpose of the program to the user using print statement. Give comments in your code.
3. **Problem 3 – Miles per Hour to Feet per Second Converter (10 points):**  
   * \_\_\_\_\_\_ (2) Get mph from user and store in a variable.
   * \_\_\_\_\_\_ (2) Code the formula correctly.
   * \_\_\_\_\_\_ (2) Display the results to the user to the nearest 0.1. Give feet per second as units.
   * \_\_\_\_\_\_ (4) Give purpose of the program to the user using print statement. Give comments in your code.
4. **Problem 4 - Currency Converter for Euro (10 points):**  
   * \_\_\_\_\_\_ (2) Ask user for U.S. dollar (to the nearest 0.01) amount and store in a variable.
   * \_\_\_\_\_\_ (2) Code the formula correctly.
   * \_\_\_\_\_\_ (2) Print the results with € symbol using Unicode.
   * \_\_\_\_\_\_ (4) Give purpose of the program to the user using print statement. Give comments in your code.

1. **Problem 5 - Turtle Graphics Drawing – Estonian Flag (10 points):**  
   * \_\_\_\_\_\_ (2) Code has the import command.
   * \_\_\_\_\_\_ (4) Estonian flag reproduced with correct colors in same-sized rectangles. Blue or black border used to outline the flag.
   * \_\_\_\_\_\_ (4) Give purpose of the program to the user using print statement. Give comments in your code.

**Lab #1 Total = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ / 50 points**