

COMP 2710: Homework 1

Due: 2/3/2017 at 11:55 pm

Points Possible: 100

Note: You DO NOT need to submit hard copies.

Goals:

- To find someplace where you can develop, compile, and run C++ code.
- To learn how to use Linux, putty, and g++
- To learn the const modifier in C++
- To write a very simple C++ program and learn a few things like variables, expressions, assignment statements, console input/output, and namespaces.

Homework Description:

A government research lab has concluded that an artificial sweetener commonly used in diet soda will cause death in laboratory mice. A friend of yours is desperate to lose weight but cannot give up soda. Your friend wants to know how much diet soda it is possible to drink without dying as a result. Write a program to supply the answer. The input to the program is the amount of artificial sweetener needed to kill a mouse, the weight of the mouse, and the weight of the dieter. To ensure the safety of your friend, be sure the program requests the weight at which the dieter will stop dieting, rather than the dieter's current weight. Assume that diet soda contains one-tenth of 1% artificial sweetener. **Use a variable declaration with the modifier const to give a name to this fraction.** You may want to express the percentage as the double value 0.001.

Programming Environment:

Write a short program in C++. Compile and run it using the g++ compiler on a Linux box (either in computer labs in Shelby, your home Linux machine, a Linux box on a virtual machine, or using an emulator like Cygwin).

Requirements:

1. (5 points) **Use comments to provide a heading at the top of your code** containing your name, Auburn Userid, filename, and how to compile your code. Also describe any help or sources that you used (as per the syllabus).
2. (5 points) Your source code file should be named as "hw1.cpp".
3. (10 points) No compilation errors and no warning messages.
4. (10 points) Use modifier const for the fraction.
5. (10 points) Usability of your program (e.g., input and output).
6. (60 points) Quality of your source code.

You will **lose points** if you: do not use the specific program file name, or do not have a comment block on **EVERY** program you hand in.

Here is a sample dialog (where the user input is depicted as **Bold**, but you do not need to display user input in bold.):

```
What is the amount of artificial sweetener needed to kill a mouse:
0.002
```

```
What is the weight of the mouse: 1
```

```
What is the weight of the dieter: 114
```

```
You can drink 228 diet soda without dying as a result.
```

Your program's output should match the style of the sample output.

Deliverables:

- A heading at the top of your code contains your name, Auburn Userid, filename, and how to compile your code.
- Submit your source code file named as "hw1.cpp" through Canvas.

Late Submission Penalty:

- Ten percent (10%) penalty per day for late submission. For example, an assignment submitted after the deadline but up to 1 day (24 hours) late can achieve a maximum of 90% of points allocated for the assignment. An assignment submitted after the deadline but up to 2 days (48 hours) late can achieve a maximum of 80% of points allocated for the assignment.
- Assignment submitted more than 3 days (72 hours) after the deadline will not be graded.

Rebuttal period:

- You will be given a period of 7 days to read and respond to the comments and grades of your homework or project assignment. The TA may use this opportunity to address any concerns and questions you have. The TA also may ask for additional information from you regarding your homework or project.