**Homework #9**

**Due Wednesday, May 9**

Write a program that counts the vowels in some inputted text and displays these counts on the screen in a graphical “bar-chart” fashion. It should be able to do this more than one time, at the user’s discretion. Your program should handle user-input errors gracefully (bad file names, etc.). If it requires more than one line to display the bar chart for any vowel, it should make the output look good. Assume that console lines have 79 characters.

The executable program **Gold09.exe** provides demonstration of what your program should do.

Your program should be designed and implemented using top-down programming techniques: use functions for sub-tasks. The functions should be divided among three files: one for main, one for the tools, and one for the program-specific functions. You should turn in a structure chart that shows the structure of the program-specific functions in your program.

Notes:

* You should use the functions from the tools files as much as possible, but you will *not* use them while reading from a file, because there is no interaction (no prompting or trying again).
* If you want to pass a stream variable as a parameter, it *must* be a reference parameter or really weird things may happen.
* You should use five counter variables to count the vowels. Do not use arrays or other things that we have not studied yet.

You should turn in (in a pocket folder): this assignment/grading sheet, a statement of completeness (see the back of this sheet), a structure chart, and printouts of your program-specific functions and any tools that you may invent. All items should be labeled appropriately. You should also place a “soft” (electronic) copy of a folder containing *all* of your project’s code and header files (.cpp and .h) into your private FTP folder.

**Grading Sheet, Homework #9**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Criteria Possible Achieved**

Statement of Completeness 5

Structure Chart 5

Clear Indentation and Spacing 5

Comments 5

Clear Identifiers 5

Appropriate Use of Statements & Expressions 5

Appropriate Use of Functions 10

Complete/No Errors 5

Output Format and Correctness 5

Presentation 3

Total: 53

Notes: