**Homework #8**

**Due Wednesday, April 25**

Write a program that outputs the following shapes in user-specified sizes:

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Your program should allow the user to select a shape, size, and whether the shape should be solid or hollow. All incorrect input should result in an error message and re-attempt of the input. After printing a shape, the user should be given the option of printing another shape.

Your program should be divided into main.cpp, tools.cpp, and one more .cpp for your program-specific functions. All .cpp files except main should have matching .h files.

I recommend *strongly* the following:

* Work first on the “top” of the structure chart: the functions that allow the user to select the shape options. After determining what the user wants, the appropriate shape-printing function (one for each shape) should be called, passing in whatever options are needed to specify details of the shape. The individual shape-printing functions should be stubs until you get the selection interface working. Then work on filling in the shape stubs, one at a time.
* Work on the shapes in the order presented above and get each one working before proceeding to the next. This gives you a logical progression of concepts to solve.

Remember: Boxes in the structure chart are now *function names*, and we don’t need outline numbers any more. Try to have each function handle one conceptual idea only. If you are producing (calculating, inputting, etc.) a value that you put into a variable, consider using a function to produce the value. You should use my “tool” functions where they can be used, and develop similar functions if you need a variation on inputting. Structure charts do not include tools (system or mine).

If you want an extra challenge, try adding a circle (solid and/or hollow). In this case, the size should be the circle’s diameter.

The executable program **Gold08.exe** demonstrates what your program should do, except that it also does circles, which you don’t have to.

You should turn in (in a pocket folder): this assignment/grading sheet, a statement of completeness, a structure chart, and a full printout of your program. All items should be labeled appropriately. You should also place a “soft” (electronic) copy of all .cpp and .h files in a folder in your private FTP folder.

**Grading Sheet, Homework #8**

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: