Comp 110-003 - Assignment 4:

Alternative Implementations and Interfaces

Date Assigned: Fri Sep 23, 2011

Completion Date: Fri Sep 30, 2011 (midnight)

In this assignment, you will create two implementations of a temperature spreadsheet. One will be a slightly modified version of the one you created as part of the last assignment. The other will be a new one that uses a different number of instance variables. You will declare an interface uniting the two implementations.

Part 1: Multiple Temperature Spreadsheet Implementations

Create another class implementing the temperature spreadsheet specification given in the previous assignment. If your last implementation defined one instance variable, then this implementation should define two instance variables, one for storing each property; and if the previous one defined a separate instance variable for each property, then this one should create a single instance variable.

Part 2: A Temperature Spreadsheet Interface

Declare an interface that specifies the common public methods in the two classes, and declare the two classes as implementations of the interface.

Part 3: Comments

Add comments to the two classes and the interface. You can add redundant comments, that is, comments that simply repeat what is obvious to a person conversant with the programming language and bean conventions. However, the comments should make sense, that is, be related to the code you are commenting, describing the algorithm used. Thus, do not put comments such as 'This is a comment." You have to put enough comments to demonstrate that you know how to use (a) single-line comments, (b) multi-line comments, (c) single-line comments enclosed in multi-line comments, (d) comments to disable execution of some code, and (e) Javadoc conventions, including those for methods.

Part 4:

Based on the code you have written and your demo/test examples:

1) Give one example of a formal parameter and one of an actual parameter.
2) Give an example of a class, object, state, property, and interface..
3) Classify all variables in your code as formal parameters, named constants, instance variables, or internal method variables.
4) Classify all methods in your code as functions or procedures.
5) Classify all properties in your code as read-only, editable, dependent, and independent.

Submission:

Using Blackboard, submit a zip file, which contains the following:

- All the java files you wrote as solutions to the first three parts of the assignment
- A text document with the answers to part four