CS 494 Homework 4: Due 17 April 2006

In this homework, you will complete the third elaboration iteration for the project you described in the first homework. In particular, you will have another functioning version of your system ready by the end of this homework.

There are currently 5 homeworks planned for this semester (the last one due at the very end of the semester). You need to plan your assignment so that you can have a fully working version of your program finished by the end of the fifth homework. This plan is one of the document deliverables, listed below. The final system should be somewhere in the 5,000 line range for single people, or 10,000 for two-person groups.

Changing projects or groups

If you feel that your project is not viable for any reason, or you would rather change projects, you can speak to me about doing so – I don't want to lock you in, for the whole semester, to a project that you will not enjoy.

The same applies for the groups – if you want to change your groups, let me know.

Document Deliverables

You need to include the following documents for this homework.

- **Domain model:** This is an updated version of your domain model from HW 2. The one you submit should be consistent with the current code base.
- **Class diagram**: This is an updated version of your class diagram from HW 3. The one you submit should be consistent with the current code base.
- **Design patterns**: You will need to identify which design patterns apply to your system. This is similar to the design patterns requirement from the last homework, but this time you should identify 10 design patterns, and have 7 or so implemented. Note that you will have to implement the remaining design patterns in the last homework.

The documents themselves are going to be on the "short" side – probably about 3 pages total.

As before, you will notice that a lot of the finer details have not been laid out. These details are being left to you, as they will vary from project idea to project idea. We are looking for (and will be grading based on) the fact that you have put a lot of thought into this system.

Code Deliverables

You will need to implement a better working prototype of this system since the last homework. The goal here is to have about 2500 lines of code *per group member*, as a rough estimate. Note that the code length is a rough estimate, not a hard rule. But if you are significantly below that number, it's a problem.

All your code will need to be in a code/ subdirectory, as described below. You will also need to provide a readme.odt file that describes what the various files of code do. This doesn't have to be long – just enough so we have an idea of what each file does (and you are welcome to re-use this file from the last HW, if the content is the same). If this is clear from the diagrams, you are welcome to just state that in the readme.odt file. Your code needs to be commented so that we have some idea of what is going on. Terse comments are fine, as long as they allow us to understand your code.

In your readme.odt file, you must also include instructions for how to execute your code (or, if that code is on a website somewhere, a link to that website). Your readme.odt file should also indicate where in the code the implemented design patterns are.

Lastly, you should implement some or all of your design patterns listed above. About 7 of the patterns need to be implemented. The remaining ones can wait for the last iteration.

Submission

All your deliverables will need to be zipped into a file named hw4.zip, and submitted through the course submission page (http://www.cs.virginia.edu/~cs494/submit.html). The diagrams should be done in Visio, the text documents in OpenOffice. The same formatting rules from homework 1 also apply here (normal margins, normal text size, single spaced, etc.) You can have each of the documents be in separate files, if you would prefer. All of your code should be in a code/ subdirectory in the zip file. And the readme.odt file (described above) should be either in the root directory or the code/ subdirectory. Again, the 5 Mb submission limit is in effect – if your file is larger than that, you will need to let me know.

If your system can not be executed in the normal way (i.e. by compiling and then executing in a Linux/Unix environment), you must provide an alternate means for me to examine and execute the system. This includes any web-based system – you will need to set up the code off of your home page (or other webpage that you choose). This also includes any system that requires external services, such as a database – the easy way to solve this is to provide a means to use a text database instead of a regular relational database. Basically, I need to be able to see your program running if I cannot run it myself. If there are any questions on this, feel free to ask. I can also show you how to set up website execution and/or database access.

The homework is due by the end of the day (11:59:59 p.m.) on Monday, 17 April 2006.