

CSCI-343 AT3RA Optional Assignment

Fall, 2010

How It Counts

Normally, there are three exams in CSCI-343, each counting 30% of the course grade, with the other 10% based on the homework assignments, as described in the course syllabus online. But this semester, I was unable to schedule the first midterm in a timely fashion, and we are ending up with just two exams: a midterm and a final, which will count 45% of the course's grade each.

For those who are concerned about having so much of the grade depend on just two exams, I am offering this assignment as an optional "third exam." That is, if you submit this assignment, it will count 30% of your course grade, and the other two exam grades will be reduced to 30% each.

If your grade on the assignment is lower than the average of your two exam grades, the project will be discarded.

Guidelines

This is an individual programming project. You must write your own code, and may not work in a group. You are free to consult with anyone you like while you work on your project, but the code you submit must be your own. The one exception to this rule is that if you get part of your code from another source (such as an open source library or a snippet of help from a friend), you may do so provided you give proper attribution to the source in the documentation for the code.

You may write the code in any combination of languages you like, provided I am able to compile and run it in a non-Windows environment. (No .NET applications.) The application must have a graphical user interface, so practically speaking it will have to be either a Java or a Web application.

Timeline

You must send me email telling me that you intend to do the project by Wednesday, *December 1*. In your email, tell me what programming environment you plan to use. If you want to use something other than Java or the Web, explain what you want to use, and I will let you know whether it is all right or not. If you are going to use the Web, tell me what web technologies you will be using.

Submit a copy of your code to date on Wednesday *December 8th*. The code must compile without error, but does not have to include complete functionality. This step is so I know you are actually working on the project and are working on your own.

The final due date for the project is midnight on the day of the final exam: Tuesday *December 14th*.

The Project

Build an “Exploratorium” for cache design parameters. The program is to allow users to visualize the relationships among the various cache parameters give in the cache parameters web page:

http://babbage.cs.qc.cuny.edu/courses/cs343/cache_parameters.shtml

You don’t have to use the same parameter names as I used on that page, but all parameters must be able to be set by the user, causing dynamic updates to the values that relate to the one(s) being updated.

Grading Criteria

- 100% *Correctness*. The values must be computed correctly!
- 90% *Completeness*. The user must be able to modify any meaningful parameter and see the effect on the others.
- 60% *Usability*. The GUI must be clear and easy to use. Sliders are better than text fields for entering values, but all values must also be shown numerically.
- 90% *Documentation and code structure*. The code must be fully documented and structured so that it is easy for me to read and understand.
- ?% *Optional features*. Whatever you think might make the program more appealing, such as a dynamic diagram showing how the parameters relate to the design of a cache system.

Except for the optional features, percentages show the maximum amount of credit you can *lose* for each criterion.