CS 385 Project 4: Parallel Programming Tutorial

Rough draft due: Monday, May 11 at 11:59 PM
Due: Friday, May 15 at 11:59 PM

Summary

In groups of up to 3 students, you will write a tutorial for one of the three programming models, targeted at a future CS 385 student. The programming model will be assigned to your group.

Deliverables

You will turn in:

- Your tutorial (as *yourlastname*P3 followed by the extension for your file format – html, pdf, and txt are all acceptable). The last name of any group member can be used.

You may submit this assignment by copying them to `~srivoire/cs385/submit`. You can verify your submission by checking http://rivoire.cs.sonoma.edu/cs385/proj4sub.txt.

Requirements

Your tutorial should be suitable for submission to a student magazine like ACM's *Crossroads* or IEEE's *Potentials.* You can access back issues of *Crossroads* online: http://www.acm.org/crossroads/

Before beginning the project, you should read at least one technical article from *Crossroads* to get an idea of what to expect.

In particular, the following passage from *Crossroads*'s call for submissions is relevant:

> *…Articles should be written for a broad audience. They should be easily understandable by someone who has had only the most basic computer science instruction, and yet still be interesting to the advanced computer enthusiast… Feature articles should be between 1500 and 6000 words.... Articles should be written in a magazine style rather than a research paper style.*

Your tutorial should contain the following:

- An introduction providing the motivation for the article: why should anybody care about parallel programming in general, and the model you have chosen in particular?

- Some background information on the model: when was it proposed and by whom? What kind of projects have used it? What need does it seek to address?
- Use at least one worked example with sample source code to illustrate the process of:
    - Parallelizing a problem
    - Writing code using the programming model
    - Optimizing parallel code (with performance numbers from a real machine)

  If you use matrix multiplication as an example, you should also choose a simpler example.
- A list of 5-10 useful articles or websites where the reader can find more information. These sites should be authoritative (i.e. not Wikipedia or some random person's blog)

You should have a student who has not taken CS 385 read your tutorial and let you know where it is unclear.

Grading

The grading breakdown will be as follows:

15% Rough draft: Are all of the necessary sections present? Is the paper ready to be read by another student to check clarity?

10% Intro/motivation: Is the information clear, compelling, and correct?

10% Background information: Is the information clear, compelling, and correct?

40% Worked example: Is the example clear and illustrative? Does it give a feel for programming in this language?

10% Bibliography: Are the sources authoritative? Are they good places for a beginner to get started?

15% Spelling/grammar/punctuation. Because the whole purpose of this tutorial is to make programming understandable for other students, it's important to avoid grammatical and spelling errors that detract from the clarity of your article and the points you are trying to make.

Collaboration and Citation

The course collaboration policy will be strictly enforced. Prose and code must be your own, and it should not be a paraphrase of some other source. See the following site for information about plagiarism:
http://owl.english.purdue.edu/owl/resource/589/01/

Read this material thoroughly. Your tutorial should be suitable for submission to a student magazine, and these magazines enforce plagiarism policies very strictly, with serious professional consequences to authors who plagiarize.

Your bibliography should include any sources you found useful in creating your tutorial.