COURSE PROJECT

1   Overview

The goal of the project is to do a miniature version of a research project. You will first pick a topic, and argue in a proposal that this is a topic worth exploring, and that you are capable and prepared to do so. You will design and implement a solution to the problem you have chosen, and measure the performance of your solution. You may use whatever paralleling techniques, including Pthreads, OpenMP, MPI, MapReduce, CUDA, or OpenCL to implement your final project, and apply them on whatever research topic you think parallelization will be beneficial. You will finally present the results of your project in a final report and in a classroom presentation.

Please keep in mind that this is a research project, and not a programming project. Although the implementation of your solution is an essential component, it is only one aspect of the project, next to other equally important components, such as the evaluation and the presentation of your results. Typical research topics include parallelization and analysis of a sequential code or improvement or adaptation of a pre-existing parallel code.

Projects should be done individually or in small groups (at most three students).

2   Project Proposal

Project proposal should follow ACM SIG Processings Templates (`http://www.acm.org/sigs/publications/proceedings-templates`). The sections for the proposal should include:

1. Title

2. The participant(s)

3. Introduction/motivation

4. Statement of the problem (Which application did you choose for this project? Why did you choose this problem?)

5. Proposed approaches, which include the block diagram (or architecture) of you system. Please describe the function of each components, and the interaction among these components.

6. Language selection (What parallel language do you use? Why do you use this parallel language?)

7. Related work

8. Statement of expected results

9. A timetable

10. References

3   Presentation

Your presentations of both your proposal and project should be well-prepared. You should be ready to handle questions from the professor and your classmates. Time limits will be strictly enforced. Please use PowerPoint/PDF to produce your slides. A PC will be provided.

4   Final Report

Project proposal should follow ACM SIG Processings Templates (`http://www.acm.org/sigs/publications/proceedings-templates`). The sections for the final report should include:

1. Title

2. The participant(s)

3. Abstract: summarize your contribution in 100 words or less. An informed reader should be able to stop at the abstract and know roughly what you are doing.

4. Introduction: background on the current state-of-the-art, why your topic is important, and what is the motivation for your work

5. Proposed Solution: detailed description, but not code!

6. Experimental Methodology: tests, input sets, environment, etc.

7. Experimental Results: Quantitative data and analysis!

8. Related work: Relate your work to research by others. Any time you mention some other work, compare or contrast it to your own.

9. Conclusions: Highlight the important points of your analysis and contribution. Also give prospects for future research on this or related topics.

10. References

5   Submissions

The electronic version of the proposal, presentation slides, final report, and the source codes of your implementation must be **uploaded to the e-Campus system**. The penalty for late submission is 15% per day (weekends count as 1 day).

6   Important Dates for Submissions

- Group registration (`mailto:PP-f16@sslab.cs.nctu.edu.tw`) due on October 7, 2016

- Project proposal due on November 1, 2016

- Presentation slides due by 23:59 the day prior to your presentation

- Final report and source codes due on January 13, 2017