CS 220

Problem Set 4

Due: 27 April 2018, 11:59 PM

General Instructions

- If you have consulted references (books, journal articles, online materials, other people), cite them as footnotes to the specific item where you used the resource/s as reference.
- Save your answer sheet as a PDF file. The answer sheet can be made using any word processing program (although preferably, one should use LaTeXto make it if as a practice towards writing technical articles).
- Submission of the problem set answers should be done via e-mail. Attach the PDF file, and write as the subject header of the e-mail: [CS 220] < *Last Name, First Name* > − Problem Set 4. For example, [CS 220] Kapayapaan, Reynaldo - Problem Set 4. Send your answers to jcyap@dcs.upd.edu.ph.
- **You should receive a confirmation e-mail from me stating receipt of your deliverable within 24 hours upon your submission of the problem set**. If you have not received any, forward your previous submission using the same subject header once more.
- If you have any questions regarding an item (EXCEPT the answer and solution) in the problem set, do not hesitate to e-mail me to ask them.

Questions

NOTE: Each item is worth 1 point, for a maximum score of 4 points.

1. Evaluate (using the PL properties discussed in class) OpenOffice Calc spreadsheet *as a dataflow language*.
2. Read Chapter 7 of RA Finkel's book. Discuss at least 1 advantage and 1 disadvantage of using the following techniques for synchronization in concurrent programming:
   - Semaphores
   - Monitors
   - Event Counts and Sequencers
   - Barriers
3. List and compare the concurrency capabilities of C with only its native thread libraries and C with the OpenMPI library.
4. Discuss which between dataflow and concurrent paradigms has an advantage *for each of the programming language properties discussed prior*.