CS5223
Distributed Systems

Lecture 0: Course Introduction

Instructor: Haifeng YU

Course Oveview

- Homepage: go to IVLE and search for CS5223

  - Check course homepage often!

  - General student discussion forum

- Prerequisite:

  - CS2106 & CS3211

  OR

  - Basic course in operating systems, knowledge in parallel/concurrent programming (i.e., locks, monitors, etc), knowledge in programming in Java

  - If you only know how to program in C but not Java, you may also enroll in this course but expect to teach yourself some Java along the way

  - If not sure, come and ask me…

Course Overview

- Main objectives:
    - Learn basic concepts of distributed systems
    - Learn how to design and build distributed systems
    - Learn how to reason about the correctness of distributed systems

- Side objectives (achieved along the way of achieving main objectives):
    - Learn about basic methodologies in how to do research
    - Get into contact with various research-related activities (e.g., literature survey)

[Syllabus](#)

- Tentative lesson schedule available on IVLE

- Take a look to see what topics will be covered

- Take a look at the assignments

Is This Course Hard?

- It is not a course that you can pass without spending substantial amount of time – not a leisure course with an "easy-way-out"
    - Substantial efforts and time commitments are expected

- You will need to do **substantial** software building/implementation (i.e., coding) in this course

AND

- You will need to be able to think abstractly about the protocols and the algorithms

both theory and practice are important in distributed systems

- If you are not comfortable with either, re-think before you take this course

Course Format

- Instructor: Haifeng YU (office COM2-04-25)
- Required text book:
  - "Distributed Systems – Principles and Paradigms" by Andrew Tanenbaum and Maarten Van Steen (2nd edition / 2006 – no newer editions available)
- Supplementary reading:
  - "Distributed Systems: Concepts and Design" by George Coulouris, Jean Dollimore, Tim Kindberg (5th edition / 2011)
- No perfect textbook on this subject
- Office hour: Monday 1:30pm—3:30pm every lecturing week
- Read material before each lecture (~3 hours)
  - You won't follow if you don't read beforehand
- Assignments/Homeworks (On average ~5 hours/week)

Class Duration

- Every Monday 6:30pm – we will start on time, so don't be late

- NUS has the following guideline on class duration:

  - "With effect from AY 2011/2012 … For 2-hour lessons, Faculty Members are requested to keep the break to 5 minutes, and to release students 25 minutes before the end of the second hour. … We request the co-operation of all Faculty Members to observe the above policy."

  - Above text taken from Provost's Circular No. 3 of Academic Year 2011/2012 dated 8 September 2011, by NUS Provost.

- Thus

  - We will have a 5-minute break in the middle

  - Class will end on 8:05pm

Grading Policy

- 30 marks: Assignment One (1 September 2014 to 9 October 2014)
  - Design and implementation of a small distributed system
- 30 marks: Assignment Two (13 October 2014 to 10 November 2014)
  - Literature survey on a research subject
- 40 marks: Final exam (Open Book)
- Both assignments are online already
  - Take a look to get better idea about what is expected
  - Assignments have been changed/updated from previous years…so don't expect them to be the same as what your seniors did

Team Forming

- Both Assignment One and Assignment Two are team assignments
  - Each team has at most 2 students
  - You cannot have the same teammate for the two assignments

- Team forming deadline (for both assignments): 11:59PM on Wednesday 27 August 2014
  - Email (in one email) the TA (zhouzl@comp.nus.edu.sg) your name and your teammates' name for each assignment
  - 1 point penalty for each assignment per day after 27 August 2014
  - The penalty serves to prevent some people from waiting until the last minute to form teams

Demo for Assignment One

- 11-12 October 2014 (Saturday and Sunday) will be the demo days for Assignment One
  - We will assign you a time slot
  - I expect everyone to show up during the assigned slot on that day – this should be viewed as a pre-condition for taking this module (similar to the date for final exam…)
  - Speak up NOW if you have difficulty coming…

- Repeat: This is a pre-condition for taking this module!
  - Will NOT honor any request for doing the demo on a different time/date – this is a commitment
  - No special consideration will be given (and NEVER had been given before in previous years)

Small Amount of Informal Homework

- Does not count toward final grade

- No need to submit – will be discussed in class

- But why you should do it
  - Help you to do better in final exam
  - An important and prompt feedback to you

- Both Assignment One and Assignment Two are due only after half of the semester is gone
  - You may realize too late that you are not following (if you ignore the homework)

Class Participation and Penalty for Non-participation

- The School and also myself encourage class participation
  - But hard to incorporate into assessment (fairness issues)
  - No webcast

- My approach to encourage participation:
  - If you miss any important discussions/announcements I made during lecture – you pay the price yourself
  - There will be important things that are only discussed during lecture, and not via email or IVLE or other venues

- Every student should be committed to attend every lecture
  - This is a requirement for taking this module – do not take this module if you cannot meet this requirement

No Exam-Oriented Training

- You are familiar with:

    - Preparation classes for GRE, Toefl, Gmat, etc.

    - High school classes to prepare you to score better in university entrance exams

    - But this course is very different…

- Final exam is the only paper-pencil exam for this course

    - Preparing for the final exam is not our (most important) goal

Why not train students to get better scores in the final exam?

- Such training is useless for your future (after this course)
  - You will likely not take another exam in distributed systems for the rest of your life…

- Such training is useless for your present (for this course)
  - Your final grade is largely about your relative performance, as compared to your classmates
  - Training may help you to get higher mark, but probably not better grade

On Cheating…

- I hope this slide is never needed…

ZERO TOLERANCE POLICY:

Cheating $\Rightarrow$ Reported to Dept and School

- I keep my promises:
  - I reported multiple plagiarism cases last year

- Example:
  - Copy code/text from other people (e.g., from the Internet or from any other student)

On Experiences from Senior Students

- Some students like to get "pragmatic advices" on how to "game" a module's policy to get a better grade, from students who took the same module before

- I generally discourage that
  - Sometimes these pragmatic advices do not help student learning
  - Sometimes this causes unfairness among students

- How do I discourage this?
  - I try to change assessments from year to year – so the "pragmatic advices" you get by treating your seniors dinner might not be applicable ☺

- If however, you can get good advices on how to learn more from this module, by all means take those…

Question?

Survey Time

- A 5000 level course is always difficult to teach because of the diversity in background

    - Some may already know a lot about distributed systems (may get bored)

    - Other may not know anything (may get confused)

- The democratic solution – survey

- We need to reschedule our class on 6 October 2014, since it is a public holiday

    - We will do a make-up lecture on 27 Aug or 28 Aug or 29 Aug

    - Make your choice in the survey