CSE-111 Great Ideas in Computer Science
Summer 2010

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Computer Science and Engineering
The State University of New York at Buffalo
(SUNY at Buffalo)

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About Me

- Albert Y. C. Chen

Education
- Ph.D. in Computer Science, SUNY at Buffalo (2012, expected)
- Master in Computer Science, NTNU Taiwan (2007)
- B.S. in Computer Science, NTHU Taiwan (2004)

Honors
- Excellence in Teaching Award for Graduate Teaching Assistants, SUNY at Buffalo (2010)

Contact Information
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- Personal Blog: http://aycchen.wordpress.com
About the Course

- **Course Objective**
  - To satisfy the math requirement for your degree in the least painful way.
  - We will cover three main topics in this course:
    - Mathematical Logic: learn how to think and solve everyday problems logically.
    - Programming: learn how to instruct computers to perform your commands correctly.
    - Underlying Mechanics of Modern-Day Conveniences: learn how computers, cell phones, the Internet, etc. work.

- **Hours**
  - Lecture: Mondays and Wednesdays, 10:00am - 1:00pm @ 143 Park
  - Labs: Mondays and Wednesdays, 1:00pm - 2:00pm @ 143 Park
  - Office Hours: By appointment (usually before or after classes)

- **Textbooks & Classnotes**
  - Class notes will be posted for all lectures. Supporting materials will also be posted, which you are also expected to read in detail.
Grading & Academic Integrity

- **Grading Scheme**
  - Midterm Exam 20%
  - Final Exam 30%
  - 2 Homework Assignments, 7% each.
  - 2 “Karel The Robot” Programming Assignments, 8% each.
  - Team Project—It will be fun! (3 persons per team) 12%
  - Class Participation 8%

- **Academic Integrity, in short:**
  - If you cheat in exams, you’ll get an F in the course.
  - If you plagiarize others homework or programming assignments, you’ll get an F in the course.
After a wild weekend in New York city, Albert is driving back to Buffalo, trying to catch the wonderful *CSE-111 Great Ideas In Computer Science* class. When Albert tried to take a shortcut to save a few bucks on the I-90 toll, he got lost in the middle of nowhere. At a Y-shaped intersection, there are two weird-looking guys, A and B, sitting on the side of the road.
What A and B told Albert:
- One of them always tells the truth and the other one always lies.
- However, Albert doesn’t know which one is the liar; A and B have been friends for decades, so they know which one is the liar.
- A and B are in a rush, so they would only answer ONE question, at the same time!

Things gets a little tricky here...
- If Albert asks: which way should I turn to get to UB? They would point towards opposite directions. Since Albert doesn’t know which one of them is telling the truth, which way should he take then?

Albert thought for a while and remembered the tricks he learned in CSE-111. He asked them a question, and both A and B miraculously pointed toward the same direction!
- Albert took the opposite direction, and he got back to UB on time!
- The question is: what exactly did Albert ask them?
Warmup Question: Which way to UB?

- Albert asked: “If you were the other guy, which way would you tell me is the way to UB?”
- What?
  - You’ll need to be in the classroom to understand why...
Team Projects

- 3 person per group, 12% of total grade.
- Potential Topics
  1. The effects of computers and the Internet on the outsourcing of employment.
  2. Is Google making everybody smarter or stupider?
  3. Is twittering a waste of time?
  4. Facebook’s personal privacy issues
  5. Smart Phone War: Apple’s iPhone v.s. Google’s Droids v.s. Research in Motion’s Blackberries.
  6. Tablet PC War: Apple’s iPad v.s. Microsoft’s tablet PCs v.s. eBook Readers (e.g. Amazon Kindle)?
  7. The next big thing(s) that will change the way human work and live?
  8. Computer’s role in modern warfare.
  9. Are robots like r2D2 possible? What are robots like in the real world right now?