COMP089: Everyday Computing

MWF 11:00am - 12:15pm (SN 155)

http://www.cs.unc.edu/~lin/COMP089/

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Office Hours: Mon/Wed After Class or by Appointment
Is COMP089 for YOU?

- Computers are here to stay...
  How will you get along with them?
What’s COMP089?

- Computing for non-Geeks!

If you were going to take 1 CS class, what do you want to know?

Everything from this class!
What Will We Be Doing

- Do a little ‘dabbling’
- Create something cool
- Watch movies
- Play games
- Listen to music
- Dissect robots
- Shrink to mini-you
- Try out theme-park like ride
Hopefully then...

- Get to examine interesting problems in our everyday life
- Learn problem-solving techniques using computer technology
- Appreciate how computing solve real-world problems in many applications
Some Applications

- Artistic & Creative Processes
- Assistive Technology
- Bioinformatics
- Computer Animation
- Computer Game Dynamics
- Digital Music & Audio Synthesis
- Image Analysis & Abnormality Detection
Some Applications

- Medical Simulation and Training
- Rapid Prototyping for Design
- Robotics and Automation
- Special Effects Generation
- Touch-Enabled Interfaces
- Virtual Environments
Goal 1: Demystify Computers

- Strangely, most people (even some computer scientists) are afraid of computers.
- We are only afraid of things we do not understand!
Goal 2: Limits of Computation

- Computers are powerful, fast, and getting faster everyday...
- BUT, they do have provable limits
- We know problems that
  - No known computer can solve
  - No known program could solve within our lifetime (or the lifetime of the universe...)

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Goal 3: Algorithms Matter

- A good algorithm on a slow computer will beat a bad one on a fast computer... eventually if the size of the problem grows
- Design matters!
- Algorithms are beautiful!
- Like art, you don’t have to do it to appreciate it.
Goal 4: Understanding systems with >1G components

- Personal Computer: Hardware & Software
- Circuit Board: ≈8 / system
  1-2G devices
- Integrated Circuit: ≈8-16 / PCB
  0.25M-16M devices
- Module: ≈8-16 / IC
  100K devices
- MOSFET
- Scheme for representing information
- Gate: ≈2-16 / Cell
  8 devices
- Cell: ≈1K-10K / Module
  16-64 devices
Other Goals

- Understand the use of computing technology in our daily activities.
- Study various examples on how computing affects different aspects of our daily life.
Course Work & Grades

- **Homework:** 30%
  (total of 3, one every month)
- **Student Presentation:** 25%
- **Course Project:** 35%
- **Class Participation:** 10%
Communication

- Visit instructor during office hours, by appointment, or email correspondence.
- All lecture notes and most of handouts are posted at the course website:
  http://www.cs.unc.edu/~lin/COMP089
- Major messages are notified by email alias.
Basic Courtesy

- TYPE your assignments using a computer
- Please do not read newspaper & other materials in class
- Participate in the class discussion
- No whispers or private conversation

THANK YOU!!!