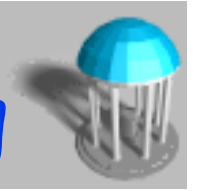


COMP089: Everyday Computing



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

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

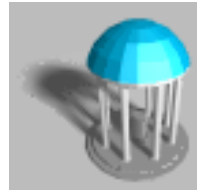
Ming C. Lin

FB 254

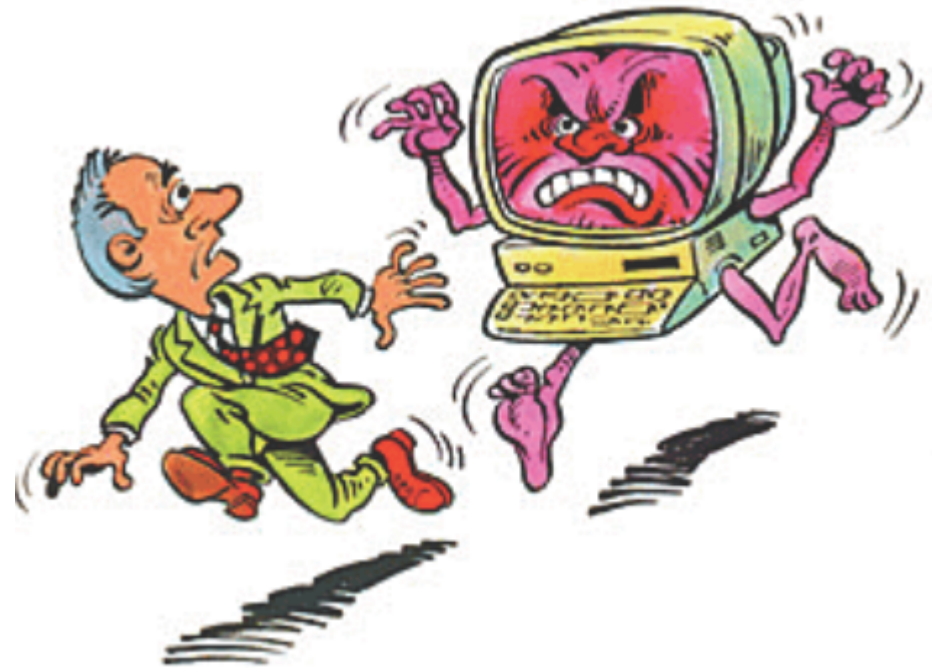
lin@cs.unc.edu

Office Hours: Mon/Wed After Class
or by Appointment

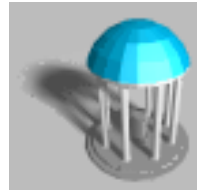
Is COMP089 for YOU?



- Computers are here to stay...
How will you get along with them?



What's COMP089?



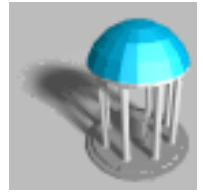
- **Computing for non-Geeks!**



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

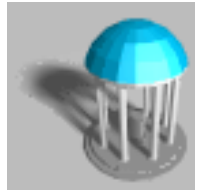
Everything from this class!

What Will We Be Doing



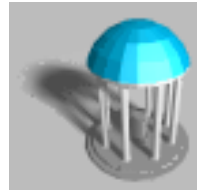
- Do a little ‘dabbling’
- Create something cool
- Watch movies
- Play games
- Listen to music
- Dissect robots
- Shrink to mini-you
- Try out theme-park like ride

Hopefully then...



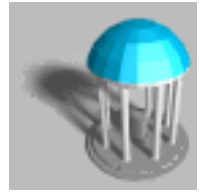
- Get to examine interesting problems in our everyday life
- Learn problem-solving techniques using computer technology
- Appreciate how computing solve real-world problems in many *applications*

Some Applications



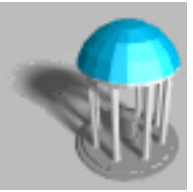
- **Artistic & Creative Processes**
- **Assistive Technology**
- **Bioinformatics**
- **Computer Animation**
- **Computer Game Dynamics**
- **Digital Music & Audio Synthesis**
- **Image Analysis & Abnormality Detection**

Some Applications



- **Medical Simulation and Training**
- **Rapid Prototyping for Design**
- **Robotics and Automation**
- **Special Effects Generation**
- **Touch-Enabled Interfaces**
- **Virtual Environments**

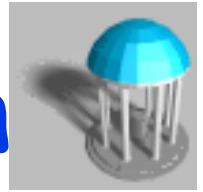
Goal 1: Demystify Computers



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



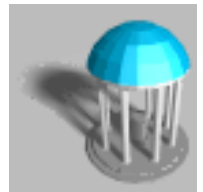
Goal 2: Limits of Computation



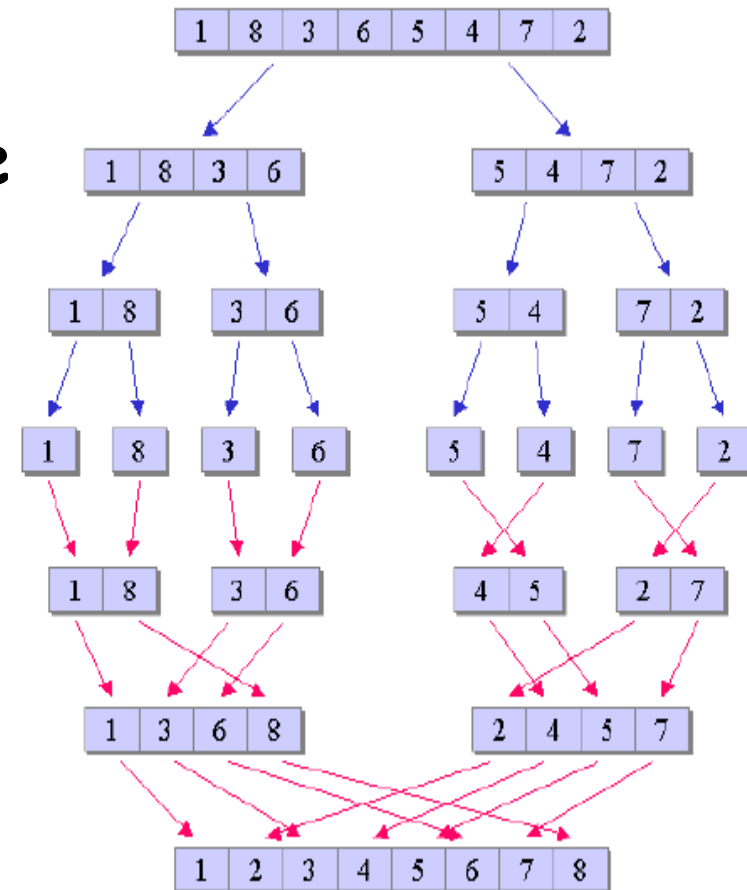
- Computers are powerful, fast, and getting faster everyday...
- BUT, they do have provable limits
- We know problems that
 - No known computer can solve
 - No known program could solve within our lifetime (or the lifetime of the universe...)



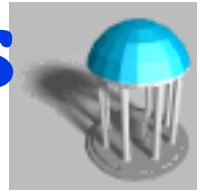
Goal 3: Algorithms Matter



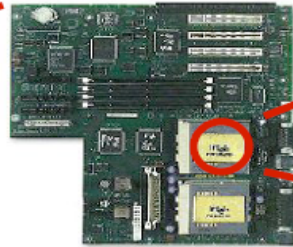
- A good algorithm on a slow computer will beat a bad one on a fast computer... eventually if the size of the problem grows
- Design matters!
- Algorithms are beautiful!
- Like art, you don't have to do it to appreciate it.



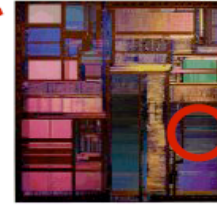
Goal 4: Understanding systems with >1G components



Personal Computer:
Hardware & Software



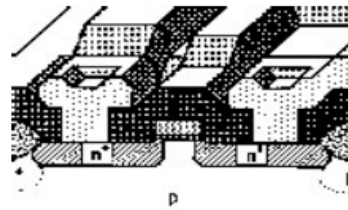
Circuit Board:
 ≈ 8 / system
1-2G devices



Integrated Circuit:
 $\approx 8-16$ / PCB
.25M-16M devices



Module:
 $\approx 8-16$ / IC
100K devices



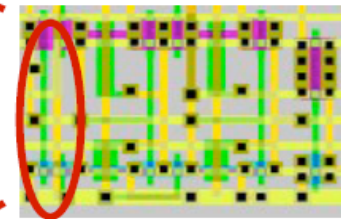
MOSFET



Scheme for
representing
information



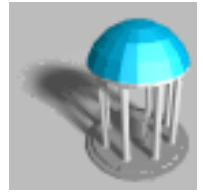
Gate:
 $\approx 2-16$ / Cell
8 devices



Cell:
 $\approx 1K-10K$ / Module
16-64 devices



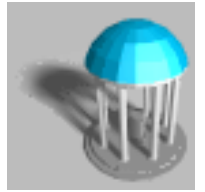
Other Goals



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

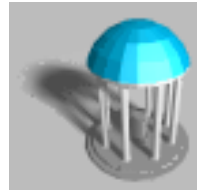


Course Work & Grades



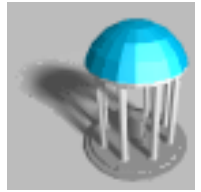
- Homework: 30%
(total of 3, one every month)
- Student Presentation: 25%
- Course Project: 35%
- Class Participation: 10%

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!!!