Course logistics

- Lectures Monday & Friday
- Hands-on weekly lab
- Readings
  - Computer Systems, C language reference
- Challenging programming assignments
  - C, x86 assembly, Unix development tools
- Midterm & final
- Website http://cs107.stanford.edu
- Student skills for success
  - CS106/C++ experience, curiosity, perseverance, hard work, when to get help

Getting help

- **Website materials**

  Good for: topic resources, course policy info, general advice

- **Discussion forum**

  Questions and answers very welcome! Staff also participates

  Good for: discussions about course content, tool use, tactics

- **Email to cs107@cs.stanford.edu**

  Good for: questions about your specific code, private issues

- **Office hours**

  Good for: in-person debugging advice, conceptual help

- **Peers**

  Good for: conceptual help, topic review, shared joy/commiseration

Honor code

- You are expected to turn in original, independent work
- Allowed and encouraged:
    - Helping each other with general knowledge: course concepts, assignment specifications, language features, tool use
- Not allowed:
    - Sharing/copying code: neither to give nor to receive is divine
    - Using code from previous quarters/others/web
    - Joint design/coding/debugging
- Plagiarism detection tools in use
    - Vigilant followup

Learning goals

- Mastery
  - Can write/debug C code with complex use of memory/pointers
  - Have accurate model of address space and runtime behavior of program
- Competency
  - Can translate C code to/from assembly language equivalent
  - Can write C code that respects the limitations of computer arithmetic
  - Can identify bottlenecks and improve runtime performance of C code
  - Can write code that correctly ports to other architectures
  - Can work effectively in Unix development environment
- Exposure
  - Have working understanding of computer architecture

Philosophy

- Importance of tools
  - What they do, how to use them effectively, where to learn more
- Hands-on exploration
  - Observe, examine, measure, trace, experiment
  - Answer questions by doing
- Followthrough
  - Drill down to make connections, map out cause & effect
  - Leave no stone unturned
- = Empowerment & Enlightenment
  - You can do it, we can help!

Celebrate the programmer!

- **Most systems courses are implementation-centric**
  - Building a compiler, operating system, database, microprocessor, etc.
- **CS107 is <u>programmer</u>-centric**
  - We are building YOU into a master programmer
- **Your code will be more robust, efficient, portable, reliable**
- **Not just for dedicated hackers**
  - Finds the hidden hacker within...!

Your to-do list

- **Sign up for lab**
  - online from course website, signups open Tuesday morning
- **UNIX help sessions offered later this week**
  - Various times in Gates B08 (see schedule on web site), go to any one
  - Optional, but valuable, esp if you haven't used UNIX much
- **Do reading before lecture for best effort**
  - Assigned reading posted on syllabus of website
- **First assignment posted tomorrow**