

CS 241: Wrap-up and beyond

CS 241

May 7, 2017

University of Illinois

Announcements

Review material posted by Friday

- Study guide
- Practice exam

Review sessions

- Vote on Piazza 3pm – 10pm today

MP Grading Round 2

- Same formula (50% “very late” multiplier)
- We **will** include MP2 (minus contest)

Academic honesty detection

- One batch at the end

What did you learn?

Write, compile, debug, and execute C programs

Interact with the operating system via POSIX system calls

Understand memory allocation and virtualization

Create and manage many processes and threads

Control scheduling of processes and threads

Communicate and share resources between threads

Use communication protocols (TCP/IP) and interfaces (sockets)

Write distributed multi-threaded apps that talk across a network

What did you do?

Wrote a **real** memory allocator.

A **real** shell

Multiple **real** non-trivial parallel applications (merge sort, make)

A **real** framework for processing big data

A **real** web server

Great Ideas in Computer Systems

The power of layered abstractions

- Modularity to help deal with many complex interacting parts
- Virtualization of physical resources for flexibility

Defensive programming

- Making your code robust to unexpected errors or strange inputs

Concurrency

- to match the logical flow of events
- to deal with big data and big computation

It's all just bits

- What is that thing, really?

What will you do next?

Q: What did you enjoy about this class?

- A1: Processes/threads, memory, managing system resources?
- A2: Concurrency, synchronization, optimization?
- A3: Networking, client-server programming?
- A4: The tiny bit of security we did?
- A5: Programming / MP design
- A6: Nothing at all

What will you do next?

Q: What did you enjoy about this class?

- AI: Processes/threads, memory, managing system resources?
 - CS 423: Operating Systems
 - CS 424: Real-time Systems
 - CS 431: Embedded Systems
 - CS 433: Computer Systems Organization

What will you do next?

Q: What did you enjoy about this class?

- A2: Concurrency, synchronization, optimization?
 - CS 411: Database Systems
 - CS 420: Parallel Programming

What will you do next?

Q: What did you enjoy about this class?

- A3: Networking, client-server programming?
 - CS 414: Multimedia Systems
 - CS 425: Distributed Systems
 - CS 438: Computer Networking

What will you do next?

Q: What did you enjoy about this class?

- A4: The tiny bit of security we did?
 - CS 461: Computer Security I
 - CS 462: Computer Security II

What will you do next?

Q: What did you enjoy about this class?

- A5: Programming / MP design
 - CS 421: Programming Languages and Design
 - CS 426: Compiler Construction
 - CS 427: Software Engineering I

What will you do next?

Q: What did you enjoy about this class?

- A6: Nothing at all?
 - “Higher Level”
 - CS 465: User Interface Design
 - CS 398.VL (Spring 2014): Visualizing Literature
 - “More Applied”
 - CS 418/419: Computer Graphics
 - CS 446: Machine Learning
 - CS 440: Artificial Intelligence
 - “More Math”
 - CS 450: Numerical Analysis

ICES forms