Administrivia

CS 4410: Operating Systems
Fall 2019
Professors Schneider, Van Renesse

Cornell CIS
COMPUTING AND INFORMATION SCIENCE

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How this class is organized

- Who's Who
- Before you take this class…
- Lectures
- Getting Help
- Grades & Policies

About RVR

- Ph.D. C.S., Vrije Universiteit Amsterdam
  - Thesis: Amoeba Distributed Operating System
- Industry: Research Scientist @ AT&T Bell Labs
  - Unix, Plan 9

Interests: scalable and fault tolerant distributed systems

Non-geek: musician

About FBS

- Ph.D. Stony Brook University
  - Thesis: Structure of Concurrent programs exhibiting reproducible behavior.
  - *On Concurrent Programming*, Springer Verlag
  - *Logical Approach to Discrete Math*, Springer Verlag (with Gries)
  - *Trust in Cyberspace*, National Academies Press.

- Advisor to industry and governments.

Interests: Trustworthy computing --- technical and policy.

Non-Geek: Sailing

Who are the TAs?

Abhimanyu Kompella	Marina Sanusi
Annette Stawsky	Mindy Lee
Benjamin Chen	Nikhil Saggi
Evan Adler	P.J. Finlay
Firas Trabelsi	Sixian Yi
Henry Liu	Sowmya Dharanipragada
Isabel Siergiej	Trevor Jamison
Jonathan Ou	Wenyuan Ma
Kangbo Li	Yizhou Yu

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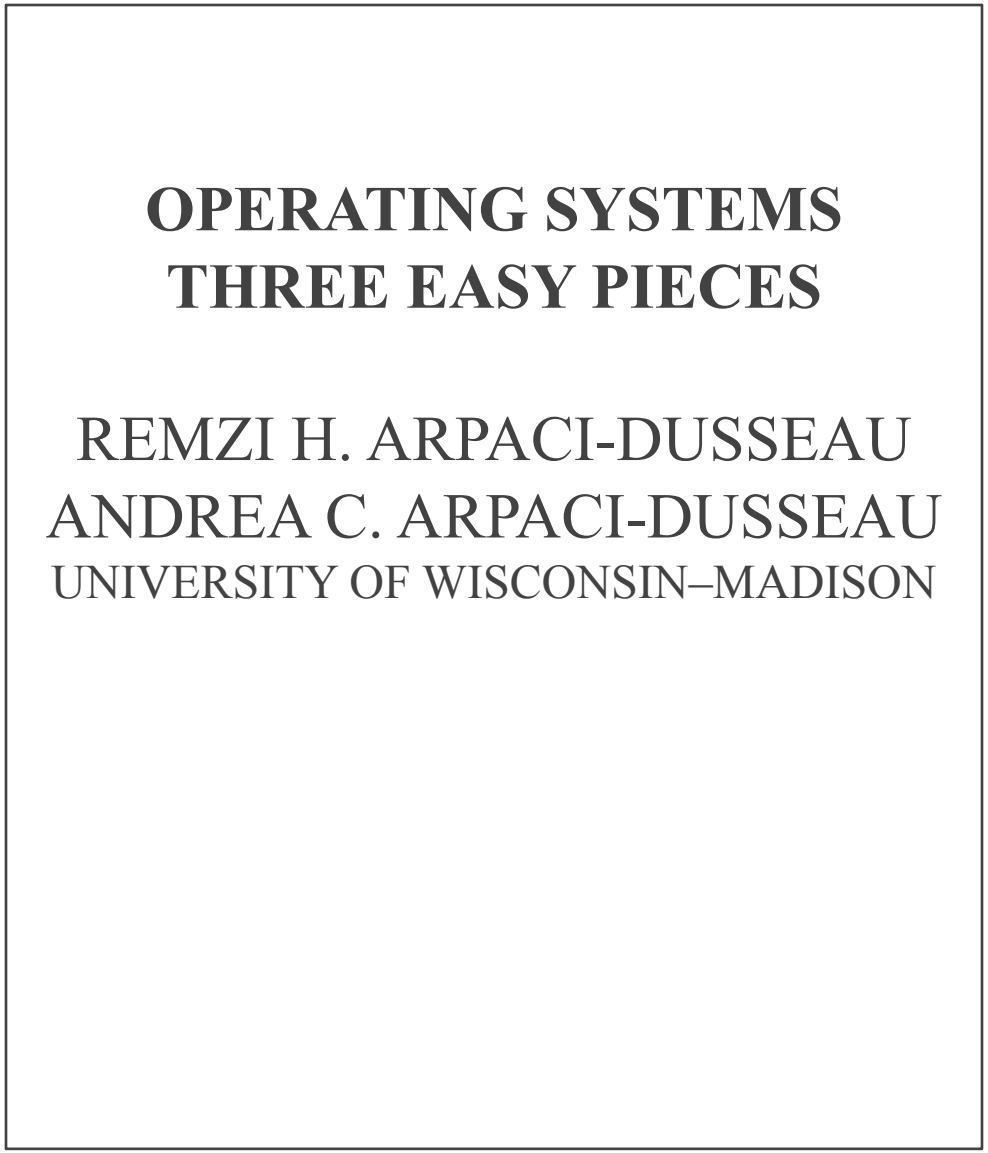
Prerequisites

- CS 3410, CS 3420 or equivalent required

Otherwise: *you must contact an instructor, explain your situation and request permission*

Required Textbook



- Free online
- Buy a PDF or a printed version

Lectures

- Tues/Thurs 2:55-4:10pm, Uris G01

- Electronics policy
  - ***No cell phones anywhere, ever***
  - No laptops (except occasionally)
  - Studies show that such classrooms without laptops are far more effective

- Please ask questions!
  - Save private discussions for later

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  - Office Hours
  - Online Tools
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Office Hours

- Professor Schneider
  - Tue/Thu 1:40 – 2:40pm
  - Gates 422
- Professor Van Renesse:
  - Mon/Wed 3:00 – 4:00pm
  - Gates 433

- Course Staff
  - OH weekdays 10am – 10pm-ish
  - Will be posted on web site

Online Resources

Webpage: http://www.cs.cornell.edu/courses/cs4410/

- Schedule, exam & due dates
- Home work release and due dates
- Slides posted before each lecture

Github for code: https://github.coecis.cornell.edu

CMS for assignments:
https://cmsx.cs.cornell.edu

- Grades & Regrades

Gradescope for exams

- Grades & Regrades

Online Help

Piazza

- For 99% of the communication
  - Private posts should be visible to *all* course staff
  - Do not contact staff by other means (FB, texts, *etc.)*
- For help with assignments, concepts

cs4410-staff@cornell.edu: time sensitive matters

- Goes to professors & TAs

cs4410-prof@cornell.edu: *sensitive* matters

- Goes to professors

Please no emails to personal email accounts

Other Resources

Engineering Advising	www.engineering.cornell.edu/resources/advising	Academic advising for engineering students
Arts College Student	www.arts.cornell.edu/stu-adv/	Listing of general support services for a variety of concerns
Gannett	www.gannett.cornell.edu	Cornell University Health Service
CAPS	www.gannett.cornell.edu/services/counseling/caps	If you experience emotional distress, please contact Counseling and Psychological Services
Student Disability Services	sds.cornell.edu	Ensures that all aspects of student life are accessible, equitable, and inclusive of those with disabilities. Send accommodation letters to Veronica VanCleave-Seeley (vv48, Gates 401) by Sep 15.

Email cs4410-prof@cornell.edu
Get help. Get documentation. The earlier the better.
Also, please look out for each other

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Course Content

Three Components

1. Lectures and Readings
2. Exams
3. Assignments

You are expected to keep up with all three

Draft Syllabus

- Introduction
- Architectural Support for OSs
- Processes and Threads (A1)
- Synchronization (A2)
- Deadlocks
- Scheduling
- Memory Management

10/10: Prelim 1

- Virtual Memory (A3)
- File systems
- Security
- Networking

11/19: Prelim 2

- Distributed Systems

12/15 Final Exam

Grading Policies

Late Policy

- Each person has a total of ***4*** "Slip days"
- Max of ***2*** slip days for any assignment
- Cannot ever submit later than 48 hours late
- We really do not budge

Regrade policy

- Within 1 week of assignment (or exam)'s return

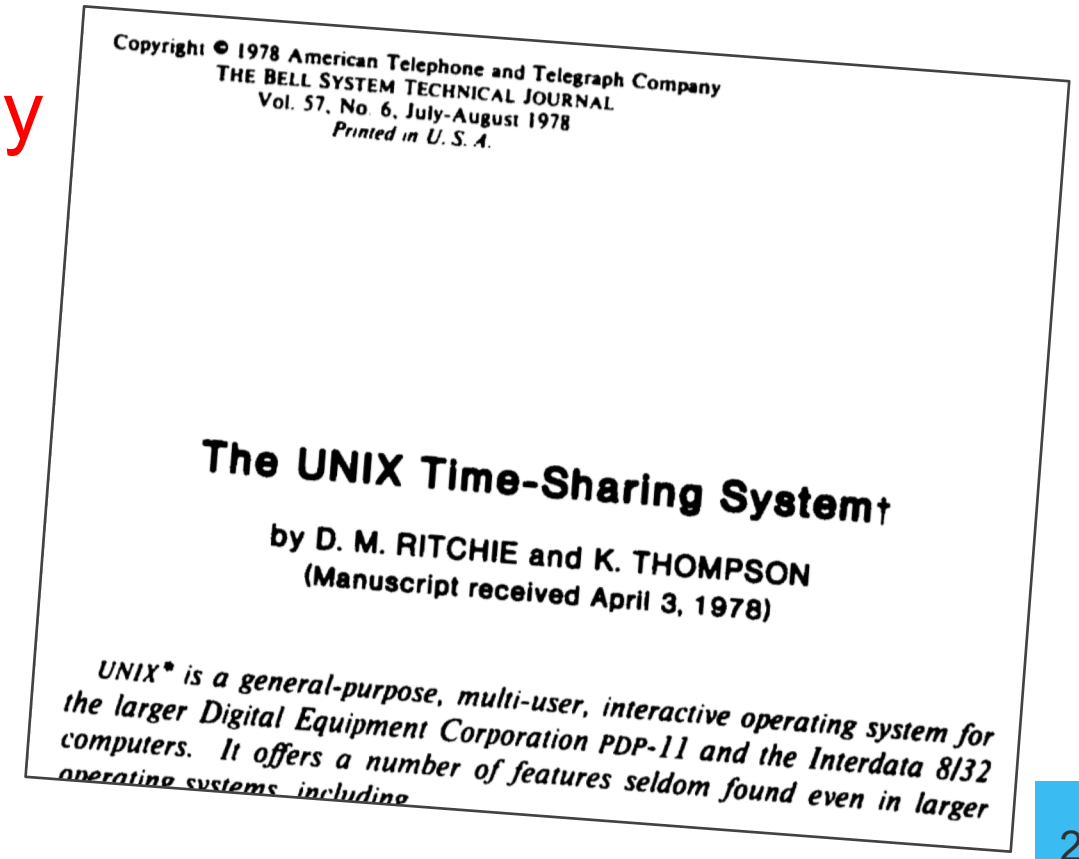
Homework

- 3 programming assignments (all in C)
  - build a “shell”
  - “easy” synchronization problems
  - “hard” synchronization problems
- 3 reading assignments
  - easy but seminal papers in systems
  - together counts as much as a programming assignment

Reading assignments

- Write 200-300 word report
  - what did you like/learn?
  - what did you dislike (or didn't understand)?

- Due next Thursday



THE BELL SYSTEM TECHNICAL JOURNAL
Vol. 57, No. 6, July-August 1978
Printed in U. S. A.

The UNIX Time-Sharing System†

by D. M. RITCHIE and K. THOMPSON
(Manuscript received April 3, 1978)

UNIX is a general-purpose, multi-user, interactive operating system for the larger Digital Equipment Corporation PDP-11 and the Interdata 8/32 computers. It offers a number of features seldom found even in larger operating systems, including*

Semester Grades

50% Assignments, 12.5% each
50% Exams (best 2 of 3)

- Goal is to give everyone an A
- Help us achieve this

Practicum: CS4411

- CS4410 assignments are “small”
- In CS4411, you’re going to have hands-on C development experience with an almost-real operating system: EGOS
  - Write a queue
  - Write a threading package
  - Write a scheduler
  - Write a file system cache
  - Write a file system
- Teams of two programmers

Academic Integrity & Honor Code

Closed-book exams, no calculators/phones

All submitted work must be your own

- OK to discuss concepts together
- White/black board rule (work, erase, wait, code)
- Cannot be in possession of other's solution
- Do not look at code that is not yours
  - a friend's or online
- Also do not share your code with anybody

Violations will be prosecuted