Operating Systems CS 333/347

Autumn 2023

People

Instructors

Puru (office: SIA 404, KR Bldg)
 www.cse.iitb.ac.in/~puru

office hourswalk-inwed: 2.30 pm - 3.30 pm

TAs

- o ashwin, debo, nadesh, anshul, anubhav, lakshya, abhishek
- o kanishka, parth, manoj, parth, bhuvan, sandeep

Course Structure and Logistics

- Theory
 - Slot 6 (Wed. and Fri. 11 am to 12.30 pm)
- Lab
 - Thursday: 2pm 5pm
- Moodle/Piazza for interactions/discussion forum
- Moodle for lab submissions

- Open for 3rd-year UG CSE students
- Not open for non-CSE students

Goals of course

- What is OS?
- Why OS?
- Design principles of an OS
- Be the OS



image source: https://www.nicepng.com/

Syllabus & Course Text

CPU virtualization

- Limited direct execution
- Processes and Process Management
- CPU Scheduling

Memory virtualization

- Address spaces
- Virtual memory
- Address Translation

Concurrency

- Threads and thread scheduling.
- Synchronization primitives

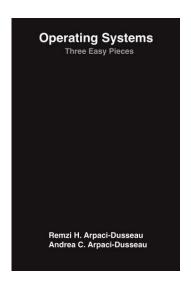
• File systems

- Storage devices and disk scheduling.
- iNodes
- Journaling & Transactions
- I/O (??)
 - Network stacks
 - o RPC
- Security (??)

Textbook

Operating Systems: Three Easy Pieces by Remzi and Andrea Arpaci-Dusseau

available for online: http://pages.cs.wisc.edu/~remzi/OSTEP



Labs

Linux based tools

Programming in C

xv6 — a simple Unix-like teaching operating system

Assessment

- Theory (CS347)
 - 2-3 scheduled quizzes (20%)
 - In-class surprise SAFE quizzes (5%)
 - Mid term exam (30%)
 - End term exam (40%)
- Lab (CS333)
 - 4 lab quizzes adding to 100% of the grade

Plagiarism policy

KEEP
CALM
AND
SAY NO TO
PLAGIARISM

Acceptable:

- Explaining a concept to someone in another group
- Discussing algorithms/testing strategies with other groups
- Helping debug someone else's code (in another group)
- Searching online for generic algorithms (e.g., hash table)

Unacceptable: (will result in a report to DADAC + a zero on lab assignment/quiz/exam)

- Sharing code/answers
- Copying OR reading another's code/answers
- Copying online code or material from prior years OR from the Internet (even reading this and typing it yourself is not acceptable)

image source: https://www.royalcontentresearch.co.in/

Ready, Set, OS!