Operating Systems
[22. Course Summary]

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Reasons of Taking This Course

- Get required units to graduate
- Transfer to CSIE?
- Prepare for graduate entrance exams?
- Learn fundamental knowledge of "operating systems"
  - How do system functions/libraries are implemented?
  - Why do system functions/libraries are implemented in this way?
  - What have operating systems done?
  - Can we do it differently?
- Increase your job-market value
  - You should be better than a pure software programmer
  - Software is running on hardware, and operating systems are between them

Lecture Schedule

Week	Content	Textbook (OSC)	MP Assignment	MP Due
1 (Feb 15)	Course Introduction		xv6 Setup	
2 (Feb 22)	Overview	Ch1, Ch2		
3 (Mar 1)	Processes, Threads, and Concurrency	Ch3		MP0 Due
4 (Mar 8)		Ch4	Process/Thread	
5 (Mar 15)	Memory Management	Ch9, Ch10		
6 (Mar 22)			Memory	MP1 Due
7 (Mar 29)				
8 (Apr 5)	Spring Break			MP2 Due
9 (Apr 12)	Midterm			
10 (Apr 19)	CPU Scheduling	Ch5		
11 (Apr 26)			Scheduling	
12 (May 3)	Storage Management and File System	Ch11, Ch13 Ch14, Ch15		
13 (May 10)			File Systems	MP3 Due
14 (May 17)	Synchronization	Ch6		
15 (May 24)		Ch7		MP4 Due
16 (May 31)	Final Exam			

Definition of Systems

- From Wikipedia
  - "A system is a group of interacting or interrelated entities that form a unified whole"
  - The term "system" comes from the Latin word systēma, in turn from Greek σύστημα systēma: "whole concept made of several parts or members, system", literary "composition"

More Than Operating Systems

- Resource management
  - Resource is limited
  - A system needs to trade off or sacrifice something
- System decomposition
  - It is challenging to take care of multiple things at the same time
- System-level view
  - Reaching some specific goals does not mean an overall satisfaction
  - Each mechanism may have its own reasons and deserve understanding
- Online decision
  - An optimal solution is probably unknown in advance
  - A system should collect relevant information, make decisions, take the responsibility, and accept the results

Thanks & Stay Safe!

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Final Exam on May 31!