

Introduction to Operating Systems

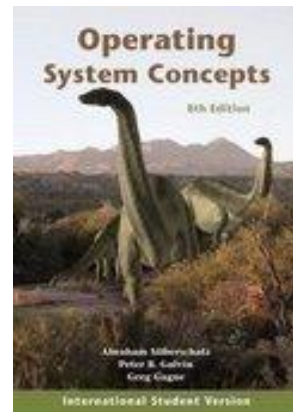
0. Preface

National Chiao Tung Univ.

By: I-Chen Lin, Assistant Professor

About the course

- ▶ **Course title:** Introduction to Operating Systems
- ▶ **Lectures:**
 - ▶ EC122, 10:10~12:00(Tues.) & 15:40~16:30 (Thu.)
- ▶ **Pre-requisites:**
 - ▶ Introduction to Computer
 - ▶ Computer programming skills in C/C++.
- ▶ **Text book:**
 - ▶ **A. Silberschatz, P.B. Galvin, G. Gagne, Operating System Concepts 8 Ed., John Wiley & Sons, Inc.**



About the course (cont.)

- ▶ Teacher: I-Chen Lin (林奕成), Assistant Professor
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 - ▶ Office: EC 704
 - ▶ Tel Ext: 56684
 - ▶ Research interests
 - ▶ Computer Graphics, Animation, image-based and interactive 3D modeling



About the course (cont.)

▶ TA:

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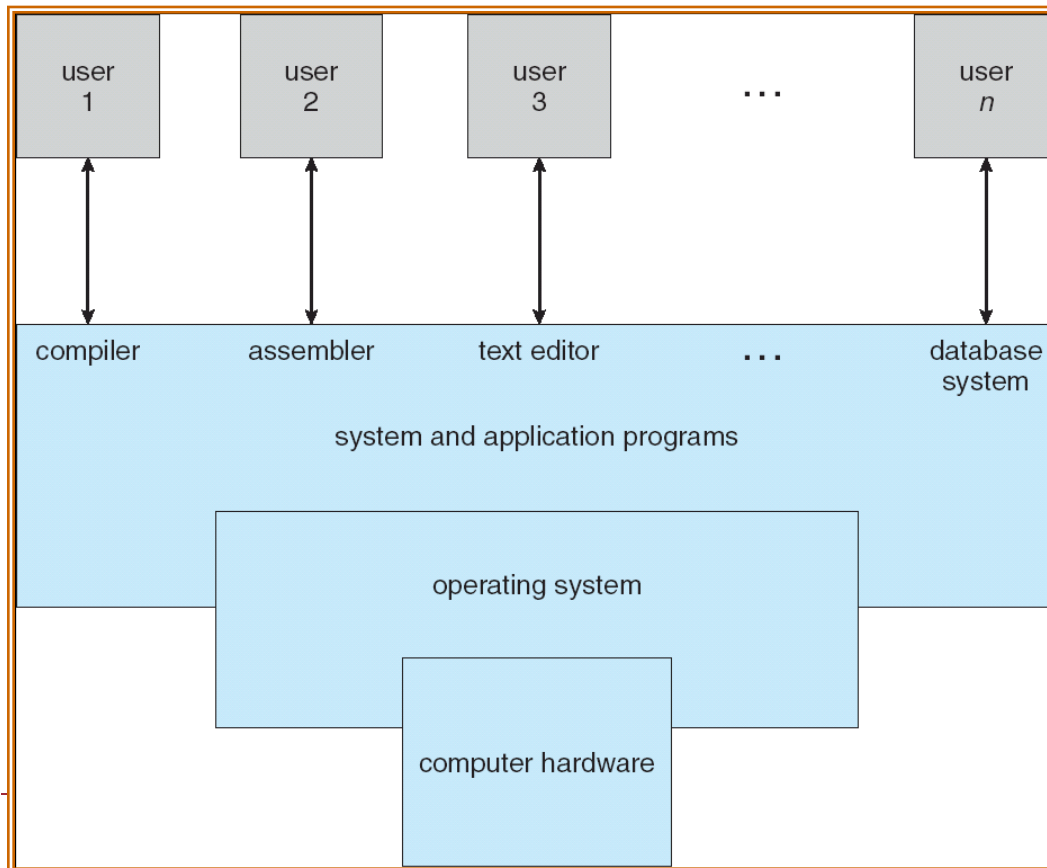
▶ Course web page:

- ▶ <http://caig.cs.nctu.edu.tw/www/course.html>



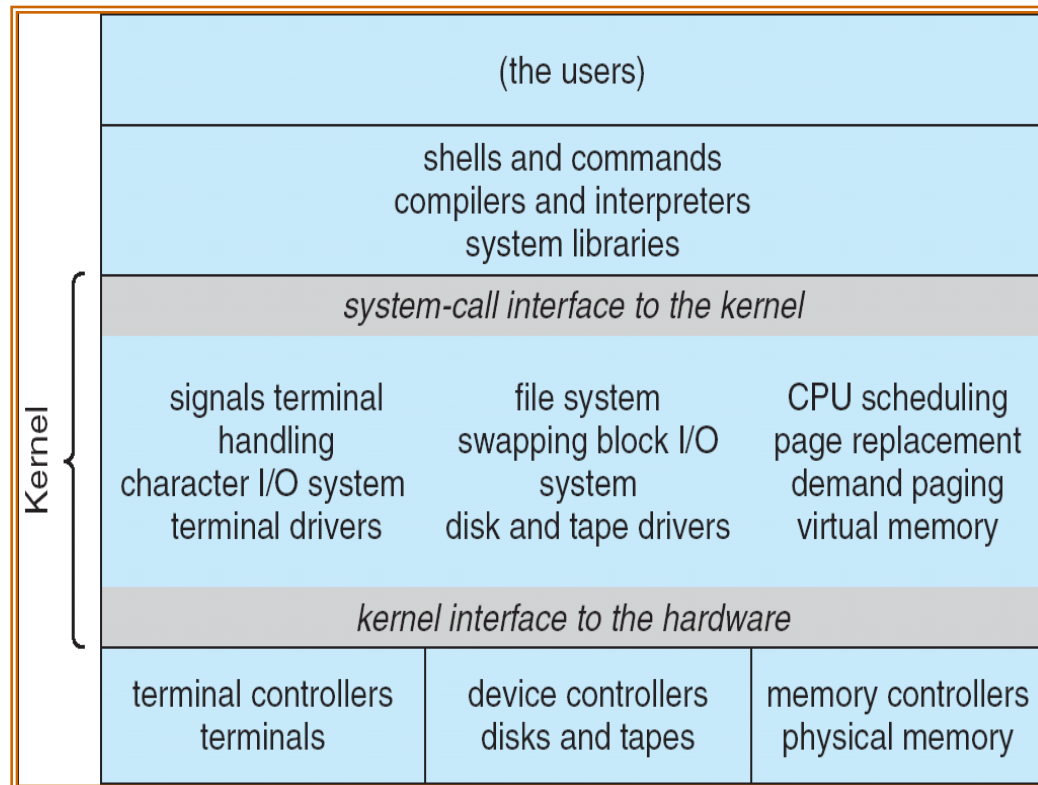
The syllabus

- ▶ Introduction.
 - ▶ What's OS?
 - ▶ OS for various purpose systems.



The syllabus (cont.)

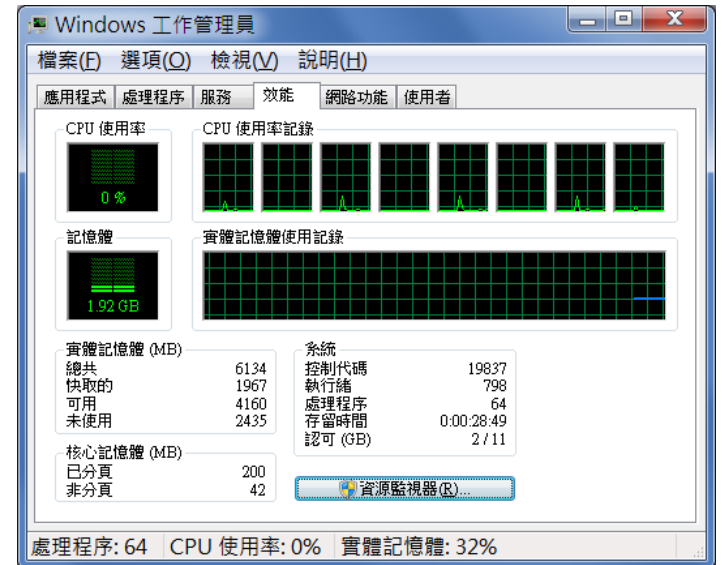
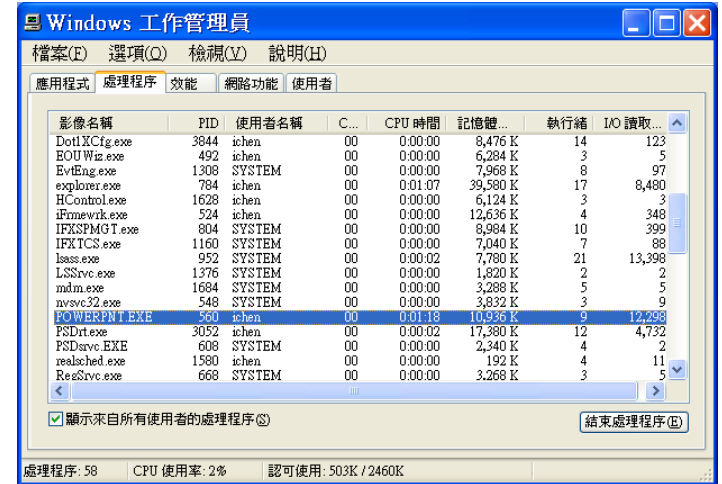
- ▶ System structures.
 - ▶ Hardware topics for understanding OS.
 - ▶ Operating-system structures.



▶ UNIX System Structure

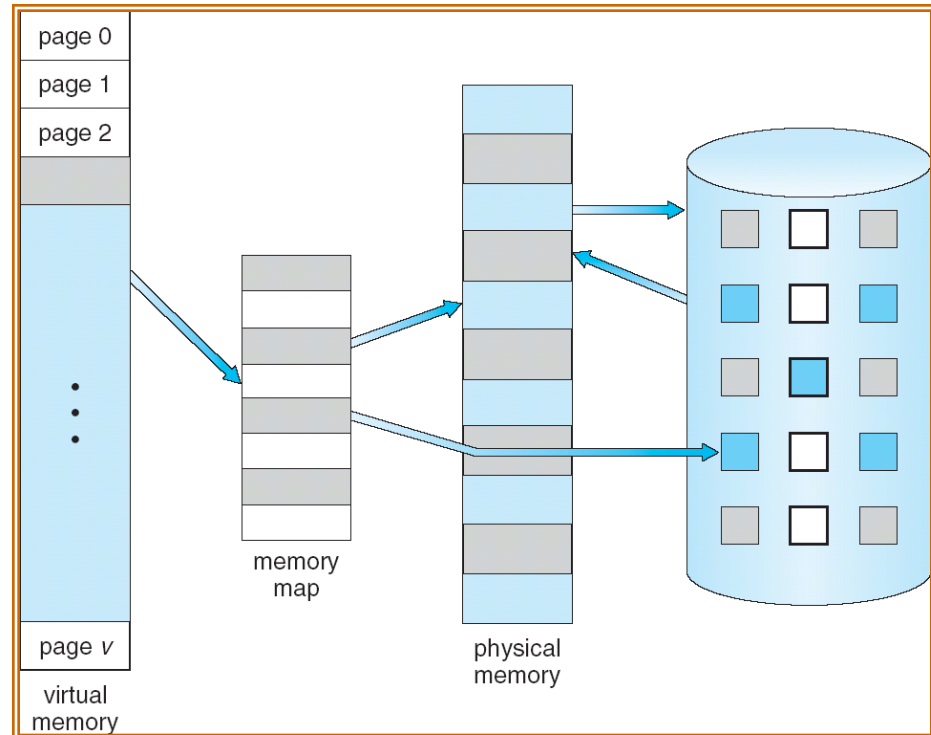
The syllabus (cont.)

- ▶ Process and threads
 - ▶ Process-concept
 - ▶ Threads
 - ▶ Process scheduling
- ▶ Synchronization.
 - ▶ Critical sections, semaphores, etc.
 - ▶ Deadlocks.



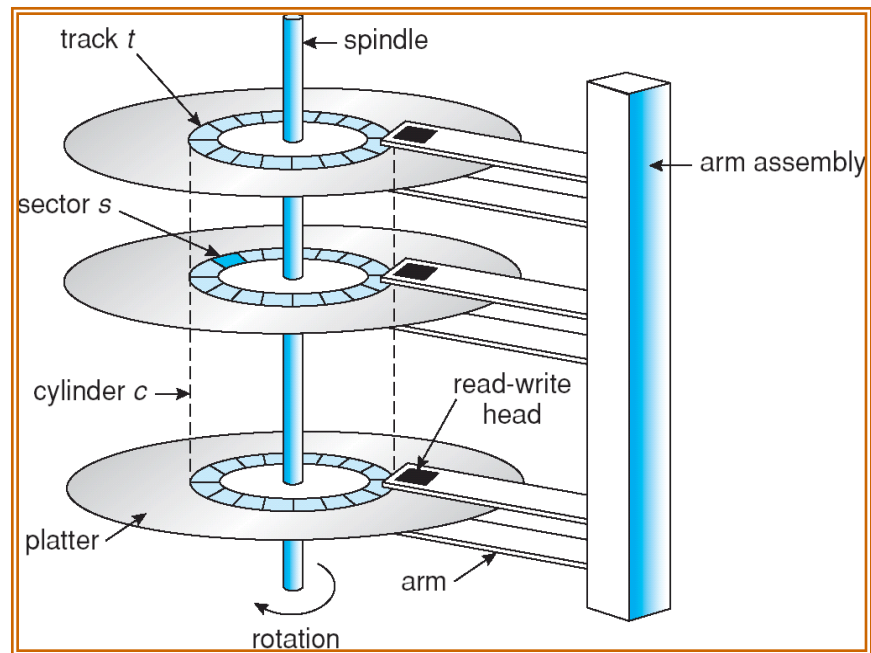
The syllabus (cont.)

- ▶ Memory
 - ▶ Memory management.
 - ▶ Allocation and address
 - ▶ Page and segmentation
 - ▶ Virtual memory.



The syllabus (cont.)

- ▶ File systems.
- ▶ Storage structure
 - ▶ Disk scheduling



About the course (cont.)

- ▶ We'll introduce the concepts of operating systems.
- ▶ We will have homework and projects
 - ▶ Unix/Linux Fork() and Pthread programming.
 - ▶ Windows multi-threading project.
 - ▶ Manager improvement on windows 2003 kernel.
- ▶ **Grades (provisional):**
 - ▶ Homework + Quiz: 20%
 - ▶ Midterm: 25%
 - ▶ Final exam: 25%
 - ▶ Program projects x2: 30%
 - ▶ Bonus: class participation



About the course (cont.)

