CSE3008 & SWE3004: Operating Systems

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Introduction

- **CSE3008 schedule**
  - 09:00 – 11:45 (Mon)
  - Lecture room: 21514, Engineering Bldg. I

- **SWE3004 schedule**
  - 13:30 – 14:45 (Mon & Wed)
  - Lecture room: #85529, Corp. Collaboration Center

- **Course homepage**
  - [http://csl.skku.edu/SWE3004S14/](http://csl.skku.edu/SWE3004S14/)
  - Lecture slides, announcements, exams scores, projects, …
  - Don’t waste your time in i-Campus
About Me

- Jin-Soo Kim
  - Professor @ CE & SSE & SW Dept.
  - Computer Systems Laboratory
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  - Tel: 031-299-4593
  - Office hours: Monday & Wednesday
  - The best way to contact me is by email.
What is OS?

- Computer systems internals

Software

Architecture

Hardware

CPU

Mem

I/O Devices

System calls

Operating Systems
Why do we learn OS?

- To graduate?

- To make a better OS or system.
  - Functionality
  - Performance/Cost
  - Reliability
  - Energy efficiency

- To make a new hardware up and running.
- To design OS-aware hardware.
- To understand computer systems better.
- Just for fun!
Prerequisites

- C programming skills
- Basic knowledge of Unix/Linux systems
- CSE2003 (System Programming) or SWE2001 (System Programming) or SSE2030 (Introduction to Computer Systems)
- ICE3003 (Computer Architecture)
Textbook

- Operating System Concepts
References (1)

- For General Operating System Concepts:
  - Modern Operating Systems
    (Second Edition)
References (2)

For Linux:

- Understanding the Linux Kernel
  (Third Edition)
  D. Bovet and M. Cesati,
References (3)

- For Windows:
  - Windows Internals
    (Sixth Edition)
    Mark E. Russinovich, David A. Solomon, and Alex Ionescu,
References (4)

- For Solaris:
  - Solaris Internals
    Richard McDougall and Jim Mauro,
References (5)

- For Introduction to Computer Systems:
  - Computer Systems: A Programmer’s Perspective
Course Plan

- **Lectures**
  - General operating system concepts
  - Case study: Linux

- **Hands-on projects**
  - Using Pintos instructional OS
Lectures: Topics

- Operating system structure overview
- Processes and threads
- CPU scheduling
- Synchronization
- Deadlocks
- Memory management
- Virtual memory
- I/O systems
- Storage
- File systems
Projects

- Lab session
  - A separate class with a TA
  - Once a week (mandatory)
  - Project announcement
  - Q&A
  - Hints & helps
  - Oral tests
  - ...

Project Schedule

- Project 0 (Warming-up) 1 week
- Project 1 (Threads) 2 weeks
- Project 1 Oral test 1 week
- Project 2 (User programs) 4 weeks
- Project 2 Oral test 1 week
- Project 3 (Virtual memory) 4 weeks
- Project 3 Oral test 1 week

- This schedule is subject to change
Class Policies (1)

- Grading policy (subject to change)
  - Class attendance: 10%
  - Exams: 35%
  - Projects: 55%
Class Policies (2)

- Class attendance policy
  - If you miss one or both of exams, you will fail this course.
  - Do not be late! You should be present in the lecture room when I take class attendance.
  - You can miss the class up to four (two for CSE3008) times without any penalty.
    - Including lab sessions
    - For unexcused absences and for excused absences as well
  - There will be a (small) bonus for students who attend all the classes and lab sessions.
Class Policies (3)

- **Cheating policy**
  - What is cheating?
    - Copying another student’s solution (or one from the Internet) and submitting it as your own
    - Allowing another student to copy your solution
  - What is NOT cheating?
    - Helping others use systems or tools
    - Helping others with high-level design issues
    - Helping others debug their code
  - Penalty for cheating:
    - Severe penalty on the grade and report to dept. chair
  - Ask helps to your TA if you experience any difficulty
Questions?