

CSF2600505 Sistem Operasi CSGE602055 Operating Systems Minggu 00

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<http://rms46.vlsm.org/2/207.html>

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- UI: sejak 1984.
- Pengguna GNU/Linux: sejak 1994.
- VauLSMorg (vlsm.org): sejak 1996.
- Blog: rahmatm.samik-ibrahim.vlsm.org/
 - Blog: 2016/08/panggil-saya-rahmat.html
 - Blog: 2013/10/kumpulan-hal.html
 - Blog: 2011/08/ibu-ke-pasar-membeli-ayam.html
- Twitter: @rms46
- Facebook: facebook.com/RMS46F/
- Kontak: via SCELE.

- 1 Nama saya **Rahmat**. Rahmat nama saya. Kalau bukan Rahmat, bukan nama saya!
- 2 Jangan datang lebih lambat dari pada Pengajar!
- 3 Jangan berisik/asyik sendiri dalam kelas!
- 4 Siap-siap untuk kuis.
- 5 Jangan menghubungi Pengajar untuk masalah Administratip!
- 6 Jangan menjadi "*Puss in Boot*"!
- 7 Jangan main "*games*" dan "*chat*"!
- 8 Jangan meminjam peralatan selama kuis dan ujian!
- 9 Jangan lupa mengerjakan tugas Lab!
- 10 Jangan curang!

Jangan menjadi Puss In Boot

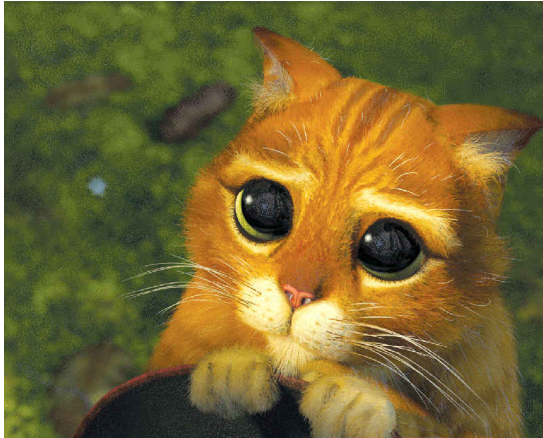


Figure: Ini Puss in Boot¹.

¹This is a fair use of a DreamWorks/Pearlman Pictures character.

Goal

Coverage

This is an introduction to a modern operating systems course. It will cover general overview, computer architecture review, operating system overview, software licenses, GNU/Linux CLI, versioning, scripting, C language overview, protection, security, gnupg, processes and threads, addressing and pointers, memory management, virtual memory, synchronization, mutual exclusion, deadlock, CPU scheduling algorithms, file systems.

Student-Centered

This course is student-centered where responsibility is in the hands of the students. Students are expected to be prepared for the class meeting.

GNU/Linux

Students will have a thorough understanding of how GNU/Linux provides services by using a Command Line Interface.

- **4 SKS:** Alokasikan 12 jam per minggu
- **No Lab. Assistant, No Teaching Assistant: Graders only.**
- Harap menghubungi SEKRE (Gedung B lantai 2) untuk segala masalah administratif, terutama absen, sakit, surat sakit, ujian susulan, dst.
- Harap merampungkan masalah administrasi ujian susulan dalam 6 hari kerja.

85 - ... = A	80 - 85 = A-	75 - 80 = B+	70 - 75 = B
65 - 70 = B-	60 - 65 = C+	55 - 60 = C	50 - 55 = D or C ¹

- UTS: 6 set problem @ 6 point (=36%).
- UAS: 5 set problem @ 6 point (=30%).
- Tugas Lab Pra-UTS: 6 set @ 3 poin (=18%).
- Tugas Lab Pascs-UTS: 5 set @ 3 point (=15%).
- Extra untuk nilai C keatas: 1 poin¹.
- C-2C untuk nilai C-: hingga 5 poin¹.
- KUIS lelang 3 poin substitusi UTS/UAS¹.
- Silakan membawa kertas A4 ke ruang ujian¹.

¹Syarat dan Ketentuan Berlaku

Resources

- Silakan memilih buku Sistem Operasi yang terbit dalam 10 tahun terakhir.
- OLD — (ARSIP)(017_BAHAN-AJAR-LAMA) Previous Slides.
- OSCE2e — (ARSIP)(050_OSC-Silberschatz) OSCE2e
- UCB — (ARSIP)(070_KULIAH-INTERNASIONAL) UC Berkeley
- UDA — (ARSIP)(070_KULIAH-INTERNASIONAL) UDACITY
- ETC — (ARSIP)(075_ETC-Video) ETC
- DEMO — (GITHUB) <https://github.com/UI-FASILKOM-OS/demo>
- SLIDE — (SLIDE) <http://rms46.vlsm.org/2/207.html>
- SCELE: <https://scele.cs.ui.ac.id/course/view.php?id=124>
 - Enrollment key: "01110001"¹.
 - Pantau "Announcement" secara teratur.
- ARCHIVE:
<https://scele.cs.ui.ac.id/course/view.php?id=126>
 - Enrollment key: "11010001"¹.
 - Arsip bahan pengajaran.

¹Sewaktu-waktu akan diganti!

Schedule part 1

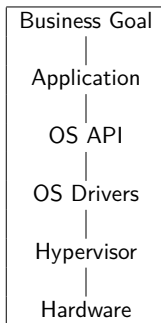
- Week00 – Intro (OSCE2e ch1/2)(UCB 01)(UDA P1L1/2) (OLD 00)
- Week01 – IPR & Scripting (ETC 000 001 002)(OLD 02-HKI 02-scripting) (Any Related Tutorial)
- Week02 – Protection & Security (OSCE2e ch13/14) (ETC 050/1 C001-8) (OLD 01) (Any C Language Tutorial)
- Week03 – BIOS, Boot and UpStart (Any Related Tutorial) (ETC 300-323)
- Week04 – Addressing, Pointer & I/O Programing (OLD 08 10)
- Week05 – Memory (OSCE2e ch7/8) (UCB 11 12 13) (UDA P3L2) (OLD 06)
- UTS 00 01 02 03 04 05

Schedule part 2

- Week06 – Processes & Threads (OSCE2e ch3/4) (UCB 02 03) (UDA P2L1/2/3) (OLD 03)
- Week07 – Synchronization (OSCE2e ch5) (UCB 7/8) (UDA P3L3/4) (OLD 04)
- Week08 – Scheduling & Sockets (OSCE2e ch6) (UCB 9/10) (UDA P3L1) (OLD 05)
- Week09 – File & Storage System (OSCE2e ch9/10/11) (UCB 17A/18/19) (UDA P4L2 P4L2) (OLD 07 08)
- Week10 – Cloud System & Virtualization (UCB 24)
- UAS 06 07 08 09 10

Week 00: Introduction

- Reference: (OSCE2e ch1/2)(UCB 01)(UDA P1L1/2)(OLD 00)
- Operating System
 - Definition: Resource Allocator & Control Program.
 - Managers: Process, Memory, Storage, ...
 - Layers
 - Interfaces



Computer Organization Review

- You should understand:
 - von Neumann Model.
 - Buses, Bridges, Transfer Rate, Clock.
 - Memory: DDR, DDR-2, ...
 - Cache.
 - Direct Memory Access (DMA).
 - Port & Memory Mapped I/O.
 - CPU: privilege/kernel/supervisor mode and user mode.
 - Hardware Limitation.
 - Priority: Read vs Write.
 - Interrupts: Polling & Vectored.
 - Multiprocessors: Symmetric vs. Asymmetric.
 - Multicore & Multithreading.
 - Clustered Systems.
 - Numbers: base 2, base 8, base 10, base 16.
 - Base 2: 110010101010_2
 - Base 8: $01234567_8 = 000\ 001\ 010\ 011\ 100\ 101\ 110\ 111_2$
 - Base 10: $012\ 345\ 679$
 - Base 16: $9AB\ CDEF_{16} = 1001\ 1010\ 1011\ 1100\ 1101\ 1110\ 1111_2$

Managers Set

- Process:
 - Creating/Deleting; Suspending/Resuming; Synchronization; Communication;
- Memory:
 - Tracking; Move In/Move Out; Allocating/Deallocating.
- Storage/File System:
 - Create/Delete; Open/Close; Read/Write.
- Mass Storage:
 - Scheduling; Allocating; Free Space.
- I/O:
 - Buffering; Caching; Spooling.
 - Interfacing (driving).
- Protecting & Scheduling:
 - Protecting.
 - Scheduling.

- Mobile/Distributed/Client-Server/Peer-to-Peer Computing.
- Real-Time Computing: Hard Real-Time vs. Soft Real-Time.
- Operating System Comparison: Android, *BSD, GNU/Linux, iOS, Mac OS, Windows.
- Operating System Services: UI (GUI, CLI); Program Executing; I/O Operations; File Systems Manipulation; Communication; Error Detection; Resource Allocation; Accounting; Protection & Security.
- System Calls: Process Control; File Management; Device Management; Information Maintenance; Communications; Protection.
- Application Programming Interface (API)
- Standard C Library.
- System Programs.
- Microkernel System Structure.
- Loadable Kernel Modules.

- Google Account
- Github Account
- SSO (LDAP) Account
- Scele Account
- Report/Wait
- Home check

The End

- This is the end of the presentation.