CSCE604227 System Programming
CSCE604227 Pemrograman Sistem
Week 00: Overview

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Sendirian Berhad

https://docOS.vlsm.org/SPSlides/sp00.pdf
Always check for the latest revision!

REV024 31-Jan-2024

SP241[1]): System Progamming

Week	Topic
Week 00	Overview
Week 01	Linux Kernel and Programming Interface
Week 02	Revisit Linux From Scratch
Week 03	FUSE: Filesystem in Userspace
Week 04	GetOpt
Week 05	Autoconf and Automake
Week 06	Boxing/Unboxing
Week 07	Sync, SETUID, and MMAP
Week 08	Kernel Modules I
Week 09	Kernel Modules II
Week 10	Kernel Modules III

[1]) This information will be on **EVERY** page two (2) of this course material.

STARTING POINT — https://sp.vlsm.org/

- **Text Book** — The Linux Programming Interface, 2010, No Starch Press, ISBN 978-1-59327-220-3 — https://man7.org/tlpi/.
- **Resources**
  - **SCELE** — https://scele.cs.ui.ac.id/course/view.php?id=3742. The enrollment key is **XXX**.
  - **Download Slides and Demos from GitHub.com** https://github.com/os2xx/docOS/:
    sp00.pdf (W00), sp01.pdf (W01), sp02.pdf (W02), sp03.pdf (W03), sp04.pdf (W04), sp05.pdf (W05), sp06.pdf (W06), sp07.pdf (W07), sp08.pdf (W08), sp09.pdf (W09), sp10.pdf (W10).
  - **LFS** — http://www.linuxfromscratch.org/lfs/view/stable/
  - **OSP4DISS** — https://osp4diss.vlsm.org/
  - **This is How Me DO IT!** — https://doit.vlsm.org/
    - PS: "Me" rhymes better than "I" duh!

Agenda

1. Start
2. Schedule
3. Agenda
4. How to contact the Lecturer
5. Assessment
6. Final Grade
7. The Three-Strikes Rule
8. Assignments
9. This is an elective course!
10. Miscellaneous

How to contact the Lecturer

- **Always introduce yourself**. State your "`GitHubAccount`", "`Student ID`", "`Hypervisor`", and "`SP class`".
- Post a question/query on **SCELE** — (The enrollment key is **XXX**): `https://scele.cs.ui.ac.id/course/view.php?id=3742`.
- For SIAK related questions, use email: (Subject:**[SP]**) `rms46(AT)ui.ac.id`.
- **DO NOT** send an email for assignment-related questions.

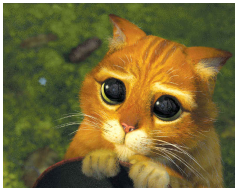

Figure: Never ever whine and pretend like this[1]!

[1] "Puss in Boot" is a DreamWorks/Paramount Picture character.

Emails between a "Gen Z" and a "Babyboomer"

selamat malam pak,

saya cicak salah satu mahasiswa sistem operasi di kelas bapak, dengan username : cbkadal

1 saya ingin bertanya, kenapa XXXXX YYYYY ZZZZZ ya pak??

XXXXX YYYYY ZZZZZ, kalau boleh tau kesalahan saya dimana ya pak??

untuk | 2 atiannya saya ucapkan terima kasih.

Salam,

Cicak Bin Kadal

3

Hallo Gen Z Zaman Now!

1 Kalimat baru seharusnya selalu dimulai dengan huruf besar.

2 Tanda baca seperti ":" (titik dua) seharusnya tanpa spasi. "Ini betul: ", "Ini salah : ".

3 Mengapa sampai lebih dari satu tanda-tanya??????????????

Salam,

Babyboomer.

Assessment

- **11 Weekly Assignments @ 11.11 points**.
  - Assignments will vary from week to week.
  - The assignment deadline will be by the end of every week. See https://sp.vlsm.org/#idx02.
  - Check your points regularly at https://academic.ui.ac.id/
  - See also, https://sp.vlsm.org/Log/.
  - **DO NOT COMPLAIN** weeks after!
- You need to log your weekly activities!
  - See https://doit.vlsm.org/ETC/logCodes.txt
  - See https://cbkadal.github.io/sp241/TXT/mylog.txt
  - **3 SKS** (Units) means 9 hours (540 minutes) per week!

Final Grade (1)

- The final grade will be the best 9 out of 11 assignments.
- Do not ask for any dispensations like a broken computer, circumcision (sunat), cold, competitions (including Gemastik), deadline extension, influenza, lame excuses, marriage, mourning, power failure, remedial, return to the village (mudik), slow network (lemot), two-semester evaluation, umrah, weddings, etc.
- It also includes: "It is not my fault but of $\{X : X \in \mathit{Lecturer} \parallel \mathit{Fasilkom} \parallel \mathit{UI} \parallel \mathit{Kampus\ Merdeka} \parallel \mathit{Immigration} \parallel \mathit{Foreign\ Embassy} \parallel \mathit{else}\}$."
- **Two (2) "spare" assignments will be more than enough!**
- In case of emergency, contact your Academic Advisor!

Final Grade (2)

- C-2C (C minus to C)
  - Up to 5 points, only if:
    - your grade is between 50.00 and 55.00, and
    - you have a "good" track record.
- Score Range

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]
40 - 50 = D	30 - 40 = E	20 - 30 = E	00 - 20 = E

[1] C-2C: terms and conditions apply — void where prohibited by law.

The eternal recurring chronic problem

How to avoid receiving emails like the following at the end of the semester after grades have been published?

Saya ingin bertanya terkait nilai saya. Karena di siak tertera nilai saya E. Mohon maaf pak saya atas kelalaian saya dalam mengumpulkan tugas. Apa yang bisa saya lakukan untuk menaikkan nilai tersebut sehingga bisa lulus ya pak? Apakah tugas saya yang terlewat masih bisa saya kumpulkan?

Terima kasih atas perhatiannya.

- Do not ask for any dispensations like a broken computer, circumcision (sunat), cold, competitions (including Gemastik), deadline extension, influenza, lame excuses, marriage, mourning, power failure, remedial, return to the village (mudik), slow network (lemot), two-semester evaluation, umrah, weddings, etc.
- It also includes: "It is not my fault but of $\{X : X \in \mathit{Lecturer} \parallel \mathit{Fasilkom} \parallel \mathit{UI} \parallel \mathit{Kampus\ Merdeka} \parallel \mathit{Immigration} \parallel \mathit{Foreign\ Embassy} \parallel \mathit{else}\}$."

Grade Examples

Mata Kuliah: CSCM602055 - Sistem Operasi
Kelas: 696070 - Sistem Operasi A, B, C, INT

-1 = no exam

Nama	NPM	W00	W01	W02	W03	W04	W05	W06	W07	W08	W09	W10	UTS	UAS	C-2C	TOTAL	
1234567890	1234567890	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	0	99.99	A
1234567891	1234567891	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	-1	-1	0	99.99	A
1234567892	1234567892	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	0	0	0	99.99	A
1234567893	1234567893	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	0	0	-1	-1	0	99.99	A
1234567894	1234567894	0	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	11.11	0	-1	-1	0	99.99	A
1234567895	1234567895	6.01	6.01	6.01	6.01	8.31	6.01	5.55	10.55	5.55	5.55	5.55	-1	-1	0	60.01	C+
1234567896	1234567896	6.01	6.01	6.01	6.01	8.31	6.01	5.55	10.55	5.55	5.55	5.55	0	0	0	59.55	C
1234567897	1234567897	6.01	6.01	6.01	6.01	8.31	6.01	5.55	10.55	5.55	5.55	5.55	11.1	11.1	0	70.65	B
1234567898	1234567898	6.21	4.88	6.21	3.11	6.21	6.21	6.21	6.01	6.01	6.01	6.01	-1	-1	0	55.09	C
1234567899	1234567899	6.21	4.88	6.21	3.11	6.21	6.21	6.21	6.01	6.01	6.01	6.01	0	0	1.05	55.01	C
1234567900	1234567900	6.21	4.88	6.21	3.11	6.21	6.21	6.21	6.01	6.01	6.01	6.01	11.1	11.1	0	65.27	B-

The Three-Strikes Rule

- All major academic rules violations will be handled directly by the Faculty of Computer Science, University of Indonesia.
- "Accidents" may happen. There will be warnings for the first two minor violations.
- Your final grade will be reduced for the third warning.
- Your final grade will be reduced to "D" for the fourth warning.
- Five (5) or more warnings will be considered as a significant academic-rules violation.

Assignments

- There will be no mid-term (UTS) nor final-term (UAS). Instead, there will be 11 weekly assignments. Your grade will be taken from the best 9 out of 11 assignments.
- You need to run "VirtualBox" on a computer with more than 4GB RAM and up to 64 GB disk space.
- Each assignment deadline will be by the end of that "week". The weekly schedule will be at https://sp.vlsm.org/#idx02.
- Submit (push) the assignments to https://github.com/. If you still don't have one, you need to sign up for a GitHub account. More information will follow.
- See the assignment list at https://demOS.vlsm.org/#idx001.

This is an elective course!

- You are not required to take this course!
- This course is not for you if you:
  - do not like the Operating Systems course.
  - do not like to get your hands dirty.
  - do not have enthusiasm nor initiative at all.
  - do not like to "hack".
- Cold Feet? Second Guess? You might want to drop this course now (this week)!
- This is the way!

Out of Topic/Intermezzo/Segue

- Semiconductor Scalling:
  - Process Shrink: $10\mu m$ (1971), $250nm$ (1996), $10nm$ (2016), $5nm$ (2020), $3nm$ (2022).
  - Smaller Devices means:
    - Less space.
    - Less power consumption.
    - More density.
- Indonesia:
  - Fairchild Semiconductor Indonesia.
  - National Semiconductor Indonesia.
  - Minister of Manpower (Menteri Tenaga Kerja) 1983–1988.
- Technology:
  - SoC: System on a Chip.
  - SiP: System in a Package.
  - Fab/Foundry: Taiwan Semiconductor Manufacturing Company (TSMC), Ltd.
    - Have No Fab? It is OK! E.g., Marvell Technology, Inc (1995).
  - Lithography: ASML Holding, N.V: Advanced Semiconductor Materials Lithography.
  - Optics: Carl Zeiss SMT GmbH (This is NOT Optik Seis, Duh :).

TSMC Logic Nodes

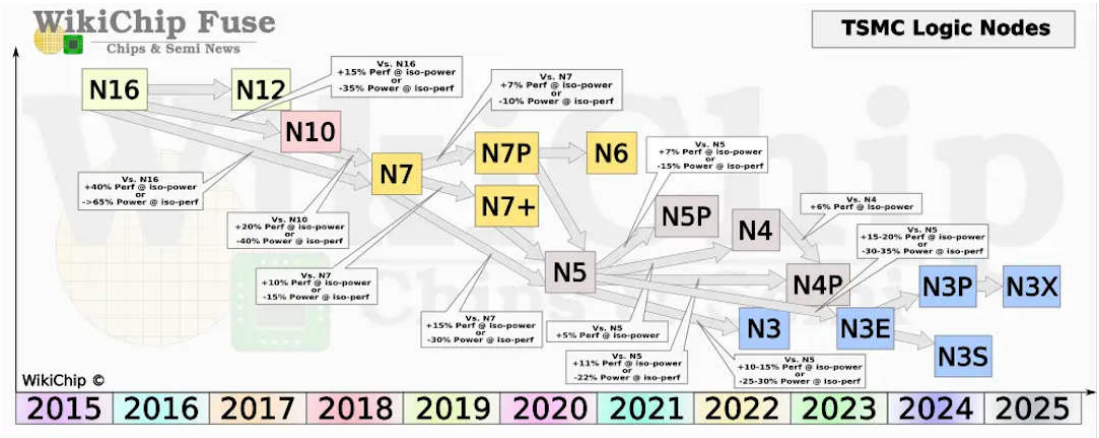

Figure: Source: WikiChip

The Computing Diciplines

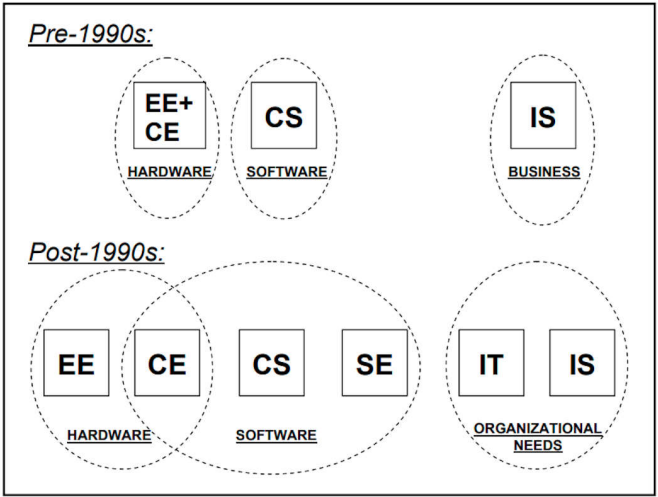

Figure 2.1. Harder Choices: How the Disciplines Might Appear to Prospective Students

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