CSGE602055 Operating Systems
CSF2600505 Sistem Operasi
Minggu 06: Concurency: Processes & Threads

Rahmat M. Samik-Ibrahim

Universitas Indonesia

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

REV67 7-Sep-2017

Jadwal OS172

Minggu 00	29 Aug - 05 Sep 2017	Intro & Review
Minggu 01	07 Sep - 12 Sep 2017	IPR, REGEX, & Scripting
Minggu 02	14 Sep - 19 Sep 2017	Protection, Security, Privacy, & C-language
Minggu 03	26 Sep - 30 Sep 2017	BIOS, Loader, Systemd, & I/O
Minggu 04	03 Okt - 07 Okt 2017	Addressing, Shared Lib, Pointer & I/O Programming
Minggu 05	10 Okt - 14 Okt 2017	Virtual Memory
Ming. UTS	15 Okt - 24 Okt 2017	
Minggu 06	26 Okt - 31 Okt 2017	Concurency: Processes & Threads
Minggu 07	02 Nov - 07 Nov 2017	Synchronization
Minggu 08	09 Nov - 14 Nov 2017	Scheduling & Network Sockets Programming
Minggu 09	16 Nov - 21 Nov 2017	File System & Persistent Storage
Minggu 10	23 Nov - 28 Nov 2017	Special Topic: Blockchain
Cadangan	30 Nov - 09 Des 2017	
Ming. UAS	10 Des - 23 Des 2017	

Agenda

Week 06: Processes & Threads

- Reference: (OSCE2e ch3/4) (UCB 02 03) (UDA P2L1/2/3) (OLD 03)
- Process Concept
  - Program (passive) $\leftrightarrow$ Process (active)
  - Process in Memory: | *Stack* $\cdots$ *Head* | *Data* | *Text* |
  - Process State: | *running* | *waiting* | *ready* |
  - `fork()` and `execlp()`
- The Multi-process Synchronization Problem
  - Producer-Consumer (Bounded Buffer)
  - Readers-Writers
  - Dining Philosopher
- Communication
  - Pipes
  - Sockets
  - RPC

Thread

- Multicore Programming
- Multithreading Models
- Threading Issues
- Benefits
  - Responsiveness
  - Resource Sharing
  - Economy
  - Scalability
- Concurrency vs. Parallelism
- Multithreading Models
  - Many to One
  - One to One
  - Many to Many
  - Multilevel Models
- Pthreads
- Lab
  - fork()

The End

- This is the end of the presentation.