

CSGE602055 Operating Systems

CSF2600505 Sistem Operasi

Week 06

Rahmat M. Samik-Ibrahim

University of Indonesia at Lenteng Agung

<http://rahmatm.samik-ibrahim.vlsm.org/>

REV05 31-Oct-2016

Agenda

- 1 Start
- 2 Agenda
- 3 Week 06
- 4 The End

Week 06: Processes & Threads

- Reference: (OSCE2e ch3/4) (UCB 02 03) (OLD 06) (UDA P2L1/2/3)
- Process Concept
 - Program (passive) \leftrightarrow Process (active)
 - Process in Memory: | *Stack* \cdots *Head* | *Data* | *Text* |
 - Process State: | *running* | *waiting* | *ready* |
 - `fork()` and `exec1p()`
- 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.