

CSGE602055 Operating Systems CSF2600505 Sistem Operasi

Minggu 06: Concurrency: Processes & Threads

Rahmat M. Samik-Ibrahim

Universitas Indonesia

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

REV58 28-Aug-2017

Agenda

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

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 `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.