

# CSGE602055 Operating Systems

## CSF2600505 Sistem Operasi

### Week 09

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# Agenda

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- 3 Week 09
- 4 File Systems
- 5 Mass Storage Systems
- 6 The End

# Week 09: File dan Storage System

- Reference: (OSCE2e ch9/10/11) (UCB 17A/18/19) (UDA P4L2 P4L2) (OLD 07 08)
- File System Interface
- File Attribute
- File Operation
- Disk Structure and Organization
- File System Types
- Directory
- FS Mounting vs. Volume Based System
- FS Structure and Implementation
- File Control Block
- FS In Memory Structure
- VFS
- Directory Implementation

- File System Layers
  - Application Programs
  - Logical File Systems
  - File-Organization Module
  - Basic File Systems
  - I/O Control
  - Hardware Device
- Allocation Method
  - Contiguous
  - Linked
  - Indexed
  - Combined Scheme
- Cache
- STREAMS

# Mass Storage Systems

- Mass Storage Structure
- Solid State Disk
- Storage Array
- SAN
- NAS
- Scheduling: FCFS, SSTF, SCAN, C-SCAN, C-LOOK.
- Disk Management
- RAID
- the /dev/ directory
  - /etc/fstab
  - Device Major and Minor Numbers
  - UUID - Universally Unique Identifier (128 bits)
  - practically is NOT guaranteed unique
  - FUSE: Filesystem in Userspace
- Lab
  - Visit <http://os162.vlsm.org/>

# The End

- This is the end of the presentation.