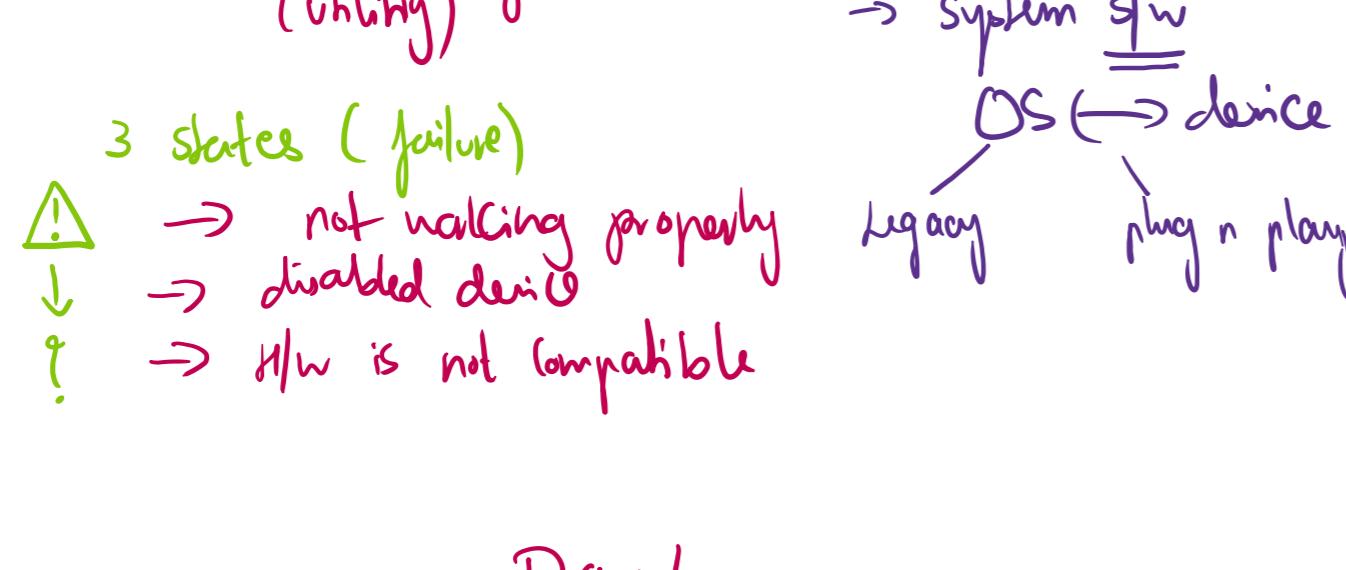


### Day 3 Recap

Module 3 → user & group mgmt windows  
 Hardw on 1) Command prompt (Admin)  
 2) Computer Management → 10/11 pro & enterprise  
 3) Accounts → other users

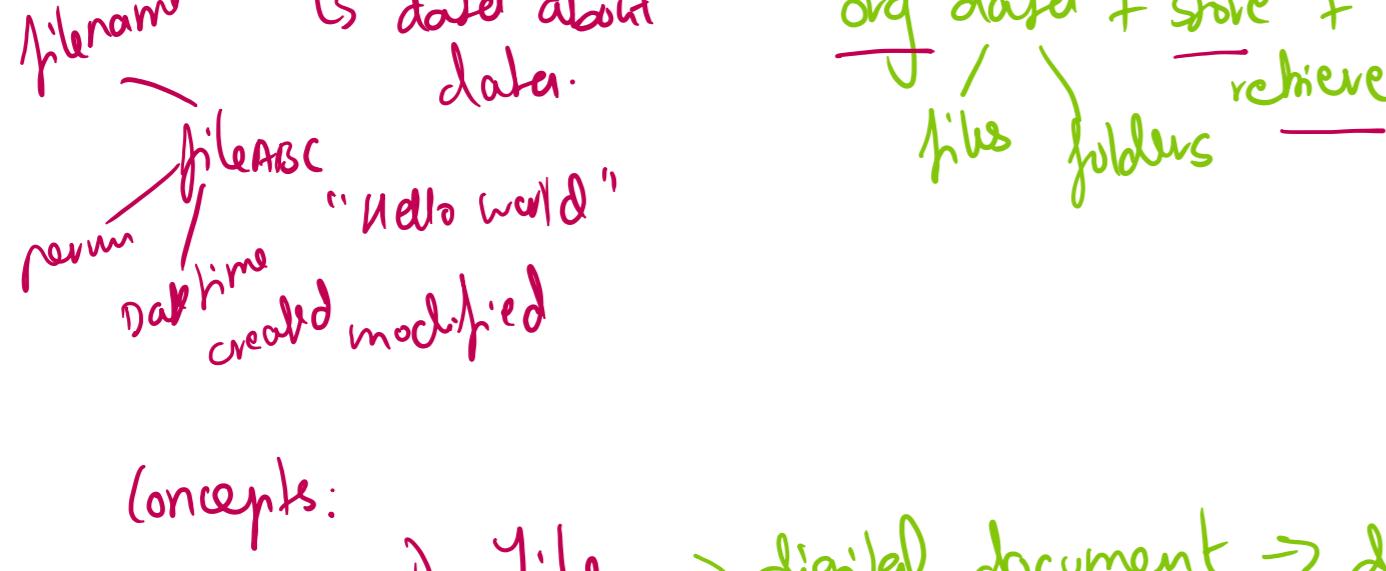
### Module 4: Device Management



### Day 4

#### Module: File Systems

File System: Method / system (or) data structure



#### Concepts:

- 1) File → digital document → data
- 2) Folder → container → files → sub folder
- 3) Attributes: name, permission, size, access mode, owner, file path
- 4) Path: loc of the file/folder on the OS
- 5) File Allocation: File A → storage space on the disk (table)

#### File operations:

- 1) Create ✓
- 2) Open
- 3) Read
- 4) Write
- 5) Modify
- 6) Delete
- 7) Rename
- 8) Copy
- 9) Move
- 10) Assign & change permissions

Folder operations: create, open, modify, delete, rename, copy, move, permissions

#### File System formatting

✓ → Erase the data  
 Process of prep → preparing to store the data  
 The disk for use → preparing to share the data

### File Systems in Windows

#### 1) FAT File Allocation Table

FAT 16 → small storage devices, floppy disks  
 FAT 32 → 4GB storage device, max file size 2GB  
 device cap: 128TB  
 max file size: 4GB → USB, SD cards

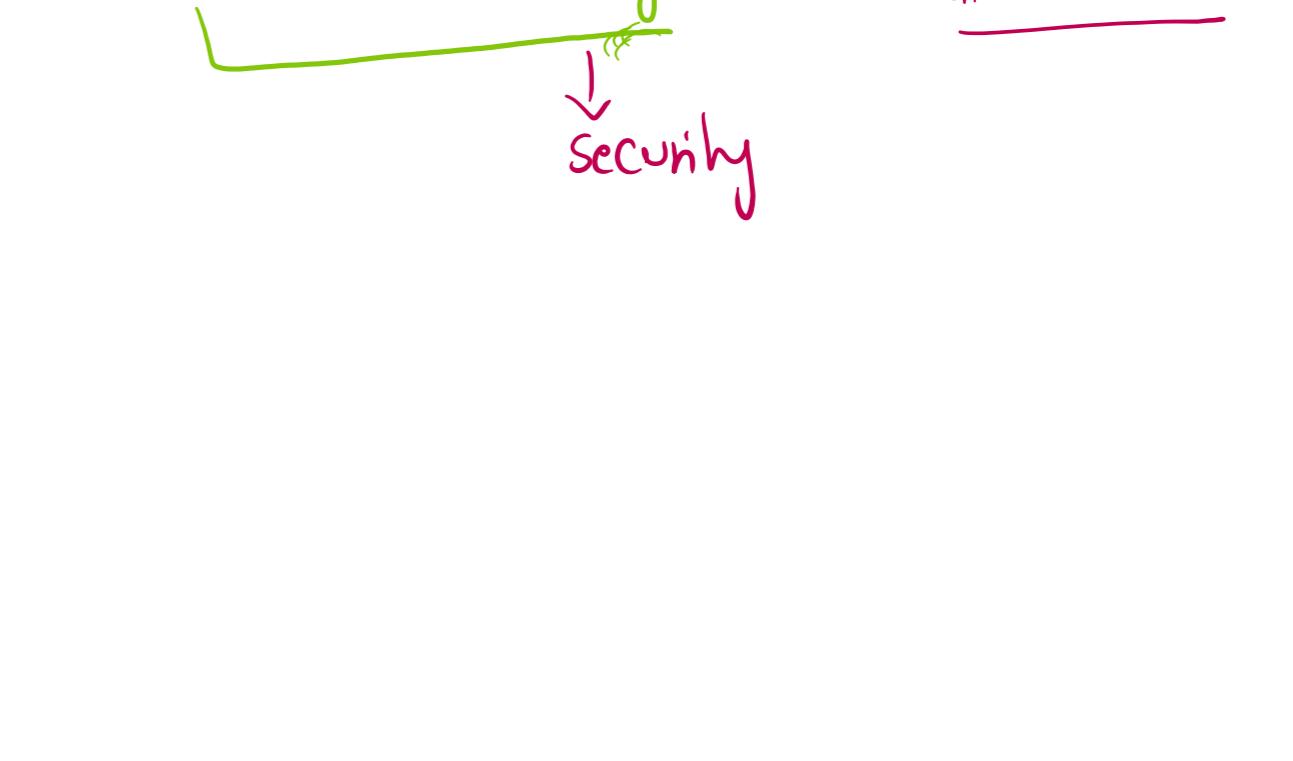
#### 2) NTFS new Technology file System

use: Win 2000 ... 11

- Features:
- 1) Large files → 256 TB auto.
  - 2) File compression → compress the files → save disk/storage space
  - 3) File Encryption → secure the data
  - 4) Disk quotas → you have to enable
  - 5) File permissions → user/group → disk space can be used
  - 6) Journaling → logging → system crash/failure → recovering

#### Dif: NTFS & FAT

- 1) file size limit
- 2) security
- 3) reliability
- 4) compatibility → NTFS → mainly for windows, FAT32 → devices & OS



View the FS: File Explorer → This PC → Right click on the drive

#### Drawbacks of NTFS

- 1) Incompatibility
- 2) Overhead & complexity
- 3) ↑ Disk Space usage
- 4) ↑ Resource usage
- 5) MFT → org storage efficient retrieval scalability
- 6) Master file table → DB entry: every file & folder
  - name, size, creation/modifications, location, permissions, access levels

#### Refs (Resilient file System)

- \* Data Integrity → checksums (ABCD) message P1 P2 R → value = 10
- \* Fault tolerance
- \* Scalability → vol/cap: 35PB

Enterprise scenario → Data centers/ VM