Sunbeam Institute of Information Technology
Pune and Karad

Module - Concepts of Operating System

Trainer - Devendra Dhande

Email – devendra.dhande@sunbeaminfo.com

1983 – GNU (GNU Not UNIX)

GPL (General Public Lisence)

Linux distributions
(www.distrowatch.com)

Linux kernel source code
(www.kernel.org)

Everything is File

File

File : collection of data

File : data + metadata

(Actual content) (data blocks)

(information about file) (File control Block) (FCB)

- name
- size
- owner / group
- permissions
  - read / write / execute
  - user / group / others
- timestamps
  - create / modify / access
- type
- no. of links
- info about data blocks of file

FCB - Inode

Uniquely identified by inode no.

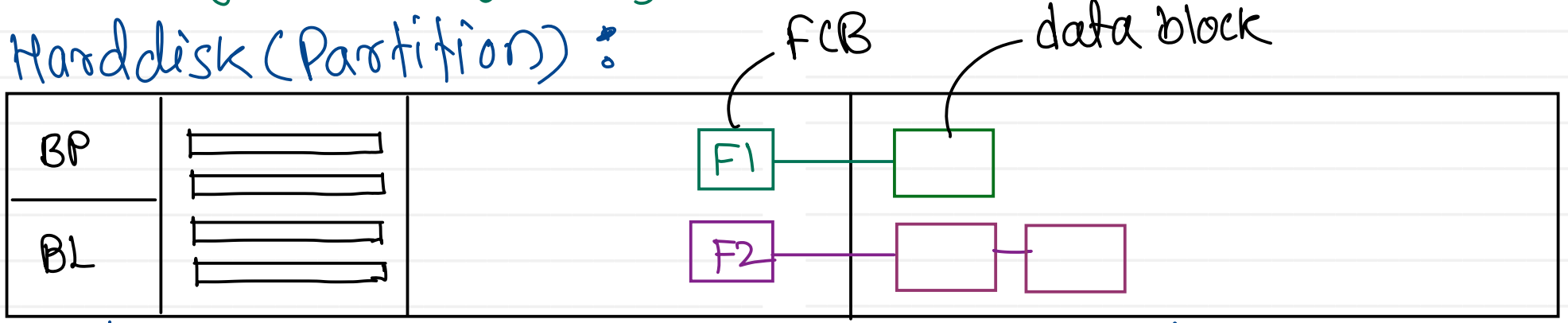
Master File Table - Inode List

Volume control block - Super block

Boot sector - Boot block

File system : Organizing files on partitions

Harddisk (Partition) :



Programs required for booting of OS

1. Bootstrap program
2. Bootloader program

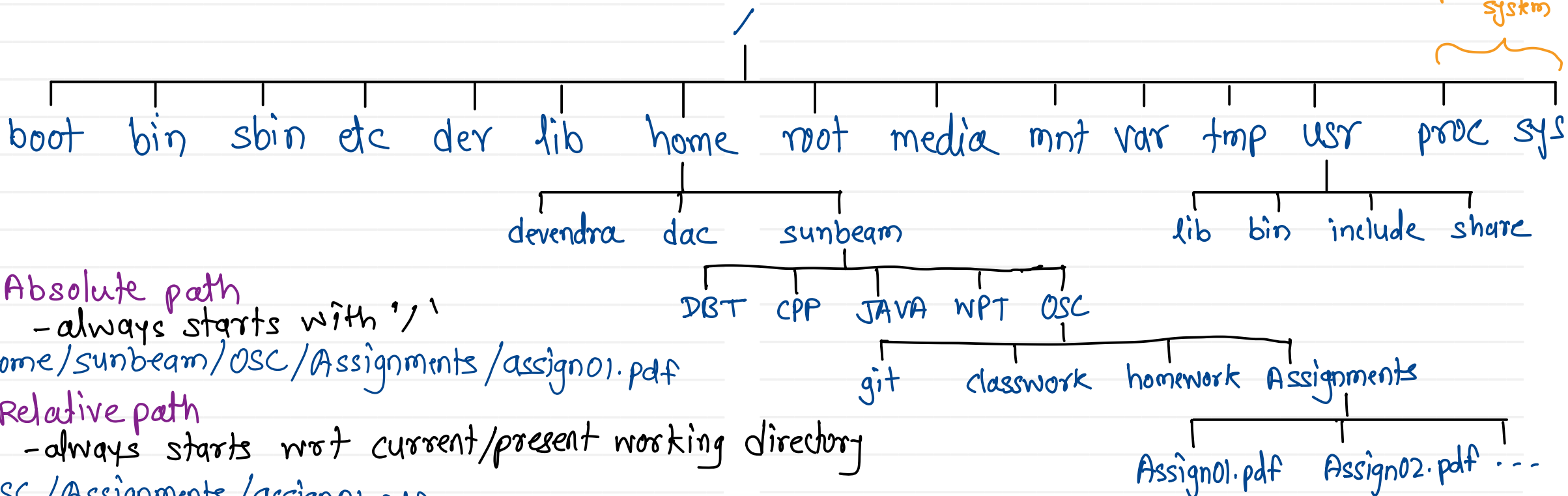
info about volume
- label
- size
- filled, empty
- info about free data blocks of that volume

- size of data block is always fixed but it is configurable at the time formatting
  size = 4096 bytes

Linux file structure

- linux follows "root file structure"
- starting point is root which is denoted by '/' (directory)

File — file
folder — directory
Adminstrator - superuser
admin — root

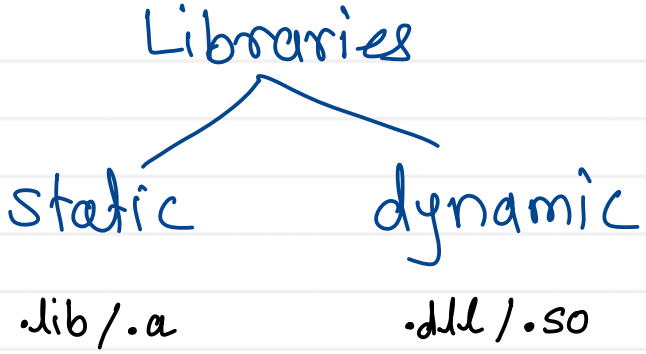


1. Absolute path
   - always starts with '/'

/home/sunbeam/OSC/Assignments/assign01.pdf

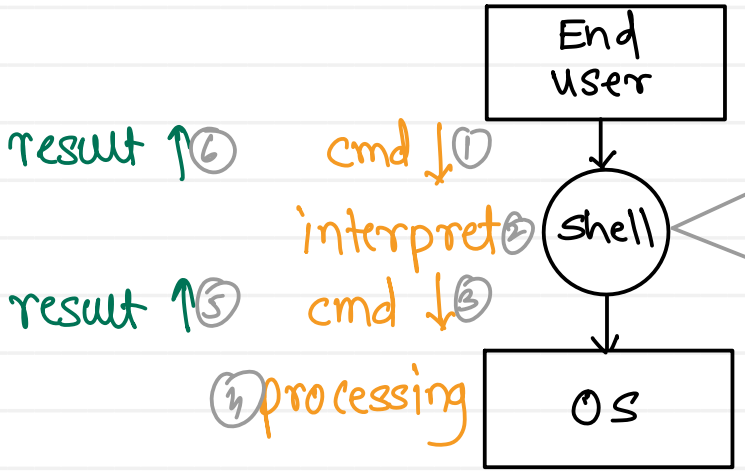
2. Relative path
   - always starts wrt current/present working directory

OSC/Assignments/assign01.pdf


Libraries
static
dynamic
.lib / .a
.dll / .so

User Interfacing

- User interfacing is provided by one of the program & it is called as "shell"
- shell is an intermediate betn OS & user
- shell is a command interpreter



- in Vbuntu default shell is 'bash'

BASH - Bourne Again Shell

echo $SHELL - will show default shell

chsh - to change default shell

CLI based shell (Command Line Interface)
- Windows - cmd.exe, powershell.exe
- Linux - bsh(sh), bash, csh, ksh, zsh

GUI based shell (Graphical User Interface)
- Windows - explorer.exe
- Linux - KDE (Komman Desktop Env)
  - GNOME (GNU Network Object Model Env)

Thank you!!!

Devendra Dhande

devendra.dhande@sunbeaminfo.com