Linux

Unit-1

1.1) Features of UNIX Operating System

Ans 1) Portable

- The program should be supported to all hardware.

2) Multi-user

- Hundreds of user connect to the Internet daily, Os must be able to support multi-users
- Allows sharing with resources like I/O, Memory, Files

3) Multitasking

- The user can perform more than one task at a time

4) Networking

- Allows user to log into the system from different location

5) Organized File System

- Unix has very good organized file & directory system that allows users to organize & maintain files. The file can be directed found from root. Ordinary files are created from user.

6) Device Independent

- I/O devices work independent
- If input device is in working output device will stay idle.

7) Utilites

- Multiple files can be collected in a zip.

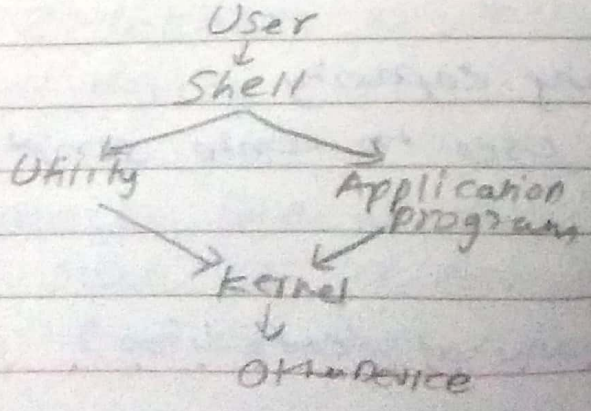
8) Services

- Specially designated administrator, to monitor the system & help users when necessary.

1.2) Unix Structure

There are four major components of Unix Structure

1) Kernel
2) Shell
3) Standard set of utilites
4) Application program

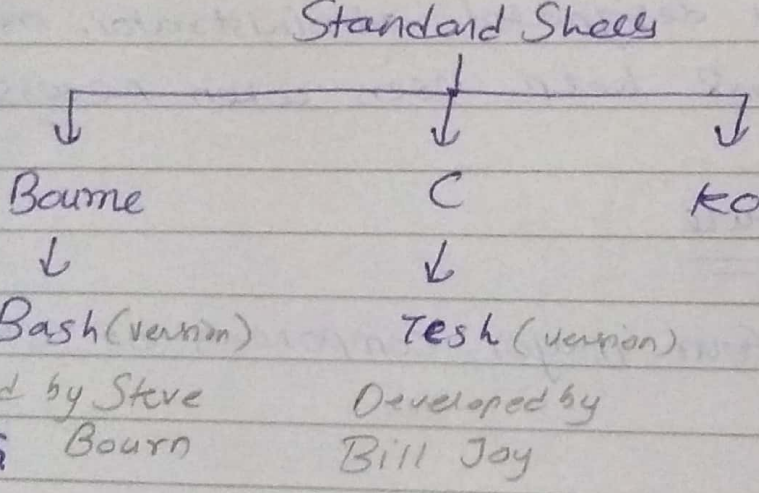


1 The kernel

- Heart of Unix System
- Consists of 2 main parts of OS
  (i) process control
  (ii) resource management

2 The Shell

- It receives the command from user & interprets it (Terminal)
- It is visible



Two major parts of Shell

(1) Interpreter
- Read & then execute

(2) Programming capacity
- will allow users to write script

3 Utility

- By default (terminal, text editor)

Date / /

(4) Application Programs

- Developed by the third party

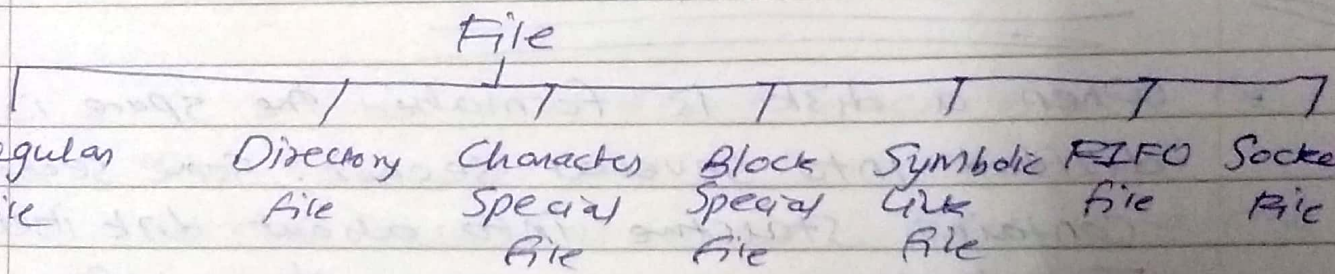
Shell Script

A shell script is a file that contains shell commands that perform a useful function. Also known as shell program

* ~~Execution~~

1.5) File Types

File is a combination of row & column which contain information



- A regular file contains user data that need to be available for future process

- A directory file itself is a file that contains name & location of all files stored on a physical device.

- A character special file represents a physical device such as a terminal that reads or writes one character at a time

A block special file represents a physical device such as disk that reads or writes data in block at a time.

- A symbolic link is a logical file that defines the location of another file that is placed in somewhere else into the system.
- A FIFO also named pipe, is a file that is used for interprocess communication
- A socket is a special file that is used for network communication.

File System Implementation

- When a disk is formatted the space is divided into several section. Some section contains structure info about disk itself. The last section contains physical file.
- Disk storage can be conceived for continous linear storage structure starting with track 0 on the first track surface & moving down through track 0 of all surface before continuing with track 1 on surface.
- In Unix a file system has 4 structural sections known as blocks.

(1) Boot Block

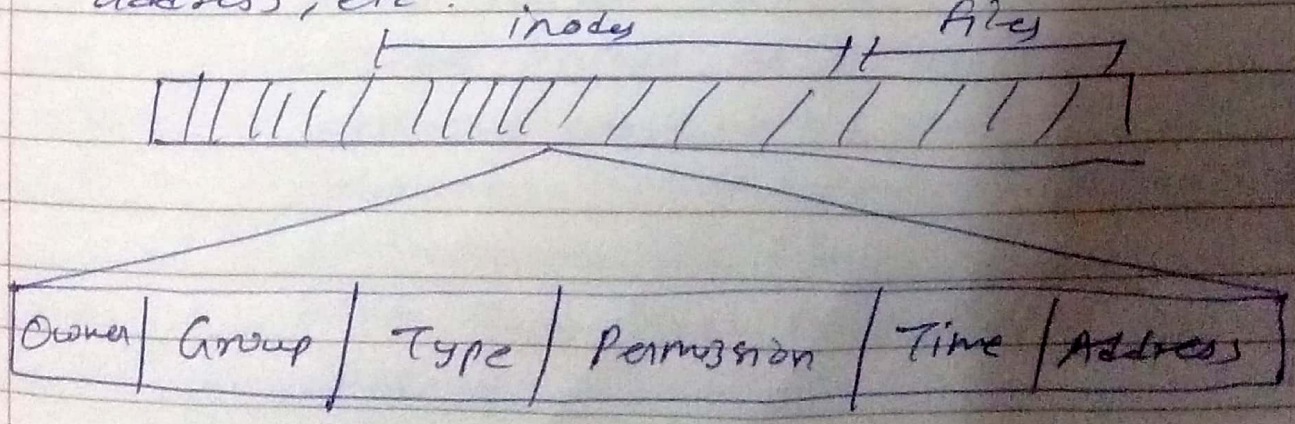
- When OS is started a small program known as boot program is used to load the kernel into memory. that we called as Boot block

(2) Super Block

- The next block on the disk is superblock which contains the info. about the file system ie. (i) Info. such as total size of disk (2) how many blocks are empty (3) Location of bad blocks on disk.

(3) Inode Block

- It contains info. about each file in the data block. The file info. is stored in records called as inode. There is a one inode for each file on disk. Inode contains info about the file, name of owner, file type, permission, file creation time, address, etc.



Link - Is a logical rel" bet" an inode & a file that relates name of file to its physical location.

(4) Data block.

The data block contains several types of file. First & foremost from the user point of view it contain all the types of file.