DAY-1:

Generic printf statement:

int printf(const char\*\_format,..);

* … represents ‘n’ no of arguments or variable.
* Char\* represents string.

Compilation System:

hello.c hello.i hello.s hello.o

Linker(ld)

Assembler(as)

Compiler(ccl)

Pre

Processor(cpp)

source Modifier source

program

Pre Processing phase:

#include <stdio.h>

#define PI 3.141593

Linking Phase:

Hello.s is ready to be loaded to main memory and executed

\*Being loaded into main memory.

\*Being executed.

Assembler:

\*Converts code to binary.

Operating Systems:

An operating system is system software that manages computer hardware and software resources, and provides common services for computer programs.

**Features of OS:**

1.Process Management

2.Main memory Management

3.Secondary

4.I/O system

5.File

6.Protection System

7.Networking

8.Command – Interpreter System

**UNIX:**

History:

* UNIX was developed by AT&T Labs in 60’s.
* Writers of Unix are Ken Thomson, Rudd Canaday, Doug Mcliliray, Joe ossana , and Dennis Ritchie.

Unix Features:

* User interface
* Multi user
* Time sharing
* C lang
* Byte Stream
* C++,COBAL etc

UNIX parts are divided into 3 parts. They are:

1.Kernel

* UNIX core
* Interact directly with OS.
* Written in C.

2. Shell

* Interface between user and kernel.

3. Tools and Apps

**Booting Process:**

* Hardware configuration
* Os file or Vmunix gets loaded.
* Brings swapper and init by kernel

Swapper: virtual memory can be created and it is residing in Ram.

Init program: Mother of all the process

* Multi used mode.
* Check integrity of files
* Mounts file system
* Login process
* Success means shell opens.

**Run Levels:**

* Unix system has several modes of operations called system states.

0 🡪 shutdown

1 🡪administartive

S or S 🡪 single user state

2 🡪 multi user state

6 🡪 stop and reboot

**LINUX COMMANDS:**

1.cal ---- calender

cmd: cal 2024 sep

2. date --- displays date

Cmd :$ date

3. pwd --- displays present working directory

Cmd:$ pwd

4. who --- shows list of users currently logged in

Cmd : $who

5. passwd --- to change the password

Cmd: $passwd

6. man --- help for linux command

cmd: $man pwd

$man 3 printf

7. ls --- display list of all files & sub directories present in current working directory

Cmd: $ls

8. ls -l --- to display long listing information

Cmd: $ls -l

9. cd --- change current working directory

Cmd:$cd <dir\_name>

$cd --- move to home directory

$cd .. --- move to parent directory

$cd ../try --- move to try directory which is present in parent directory

Making of directories:

10. mkdir --- to make new directory

Cmd: $ mkdir <dir\_name>

$ mkdir try

11. rmdir --- to remove directory

Cmd: $ rmdir <dir name>

$ rmdir try

**FILES:**

* Collection of data.
* Unix stores it in an identical manner.
* File contents are treated as series of bytes.
* Devices are also treated as special file
* Internally each file is assigned a unique identification number called Inode(information node).
* File Access is three types

User

Group

Other

rw – rw - r



user group others

Types of Files

1. Regular file
2. Directory file
3. Executable file
4. Symbolic file
5. Device special file
6. Named pipe file

FILE NAMING CONVENTIONS:

* Max file length depends on kernel configuration.
* No concept of primary and secondary name.
* Fie names are case sensitive.
* Name may contain alphabets, numbers, dots & underscores ‘\_’.
* Embedded space and tab names are not allowed.

LINKS:

Hard Links:

* It is a physical file.
* Adds an additional pathname to reference a single file.
* Ls -l command shows all the links with the link column shows number of links.
* The rm command decrements the link count.

Syntax : $ ln <original filename> <link name>

Soft Links or Symbolic Links:

* A soft link is similar to the file shortcut feature which is used in windows operating system.
* Each soft linked file contains a separate inode value that points the original file.
* If the original file is deleted then it is not possible to access the other file.
* Soft links contains the path for original file and not the contents.

Syntax: $ ln -s <original filename> <link name>