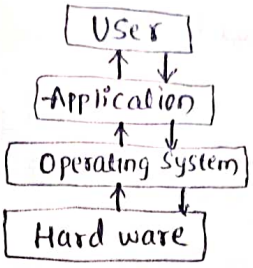
01) operating systems architecture?

* Operating systems architecture refers to the overall design of hardware and software components and their operational effectiveness as a whole.

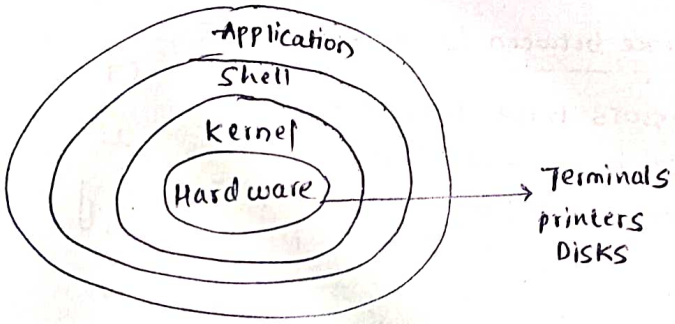
4 Types. 1. Monolithic architecture . 3 Micro kernel architecture.
2. Layered architecture . 4. Hybrid architecture.



Basic operating system

02) What is Linux Architecture?

* The architecture of Linux is composed of kernel, Shell and application programs that is Softwares.
* Hard ware: Physical parts of a computer, Suchas central processing unit. monitor, mouse, HDD



Kernel: The Kernel is one of the core section of an operating system. It is responsible for each of the major actions of the Linux OS.

* monolithic kernel * Micro kernel * Exo kernel * Hybrid kernel

Hardware : CPU, HDD and RAM.

Shell : It is an interface among the kernel and users. It can afford the services of kernel. It can takes commands through user and runs the function of kernel.

* graphical shells * Command-line shells.

primary Features of Linux OS:

1 portable : Can perform different types of hardware & the kernel support any HA
2 Hierarchial file system : affords a typical file structure where user files or system file
3 Open Source : OS Source code is available freely and for enhancing the capable of OS
4 Multi programming : more than one application can be executed at the same time
5 Security : Security systems with various features of authentication Passwd protecti
6 Multi User : more than one user can use the resource. RAM, memory or application.
7 Shell : a unique interpreter program. this can be applied for executing commands of the OS.

Drawbacks of Linux:

* **Hardware drives** : most face issue while using linux, various companies of hardware prefer Mac or Windows to build drivers for mac.
* **Software alternative** : MS office, Photoshop many other tool software not available
* **Learning curve** : Linux is not user-friendly OS. confuse many beginer. understand Linux's complex.
* **Games** : several games are developed for windows but unfortunately not for Linux.

what is computer system BIOS.

BIOS. basic input/output system is the program a computer's microprocessor uses to start the computer system after it is powered on. it also manages data flow b/w the computer's OS and attached devices, such as the hard disk, video adapter, keyboard, mouse & printer

* power on self test * Bootstrap loader * Software/drivers * Complementary metal-oxide Semiconductor- Setup

Difference b/w 32-bit OS and 64-bit OS.

* A 64-bit processor is more capable than a 32-bit processor bcz it can handle more data at once.
* A 64 bit processor can store more computational values, including memory address address. 2TB RAM
* A 32 bit OS can store and handle lesser data than the 64-bit OS. it addresses 4GB of RAM

what are the difference between i3, i5 and i7?

core i3 processors have two cores.
core i5 CPUs have four cores.
core i7 model has four cores.

*	i3	i5	i7
NO OF cores	2	4	4
Hyper threading	Yes	NO	Yes
Turbo boost	NO	Yes	Yes
K model	NO	Yes	Yes

What is an OS interrupt driven?

An operating system in which the interrupt systems is the mechanism for reporting all changes in the states of hardware and software resources. and such changes are the events that include new assignments of these resource to meet work-load demands.

what is interrupt handling?

Interrupt handling is a key function in real-time software, and comprises interrupts and their handlers. Only those physical interrupts which of high enough priority can be centered into system interrupt table

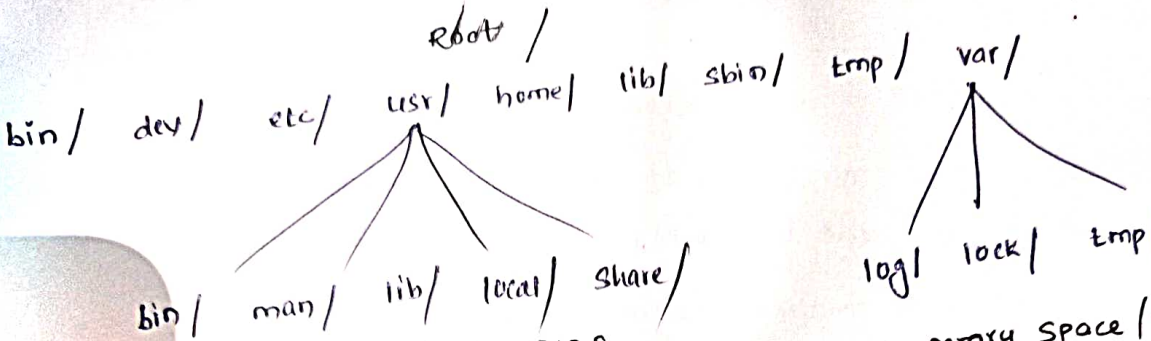
Interrupt is the method of creating a temporary halt during program execution & allows peripheral devices to access the microprocessor

what are the function of interrupt?

Interrupts are commonly used to service hardware timers, transfer data to and from storage (eg. disk I/O) and communication interface (eg UART, Ethernet) handle keyboard and mouse events, and to respond to any other time sensitive events as required by the application system.

Linux directory hierarchy

Primary hierarchy root and root directory of the entire File system hierarchy
Essential command binaries that need to be available in single user mode; for all users
eg. cat, ls, cp, Boot loader files, eg. kernels, initrd, Device Files, eg: /dev/null.
/dev/disk
/dev/sda1.



/bin – binary or executable programs
/etc – System configeration files
/home – home directory. default
/opt – optional /third party software
/tmp temporary space / typically
/usr user related program
/var log files

01) Create a directory 'test' → mkdir, cd test
02) Create Files 'test1.txt' & 'test2.txt' → touch File1.txt, cat > File1.txt, nano File1.txt, vi File1.txt
03) write the File test1.txt & test2.txt → nano, vi, or cat
04) print the File content → cat Filename
05) print the File word count → wc Filename
06) delete a File → rm Filename
07) delete an empty directory → ~~rmdir Filename~~ rmdir dirname
08) delete non empty directory → rm -rf dirname

Hands-on

01) Create users - test 1 & test 2
02) Login with these two credentials of the newly created users.
13) execute 'users' command - It will show the list of logged in users at each.
04) Find path for the sudo users