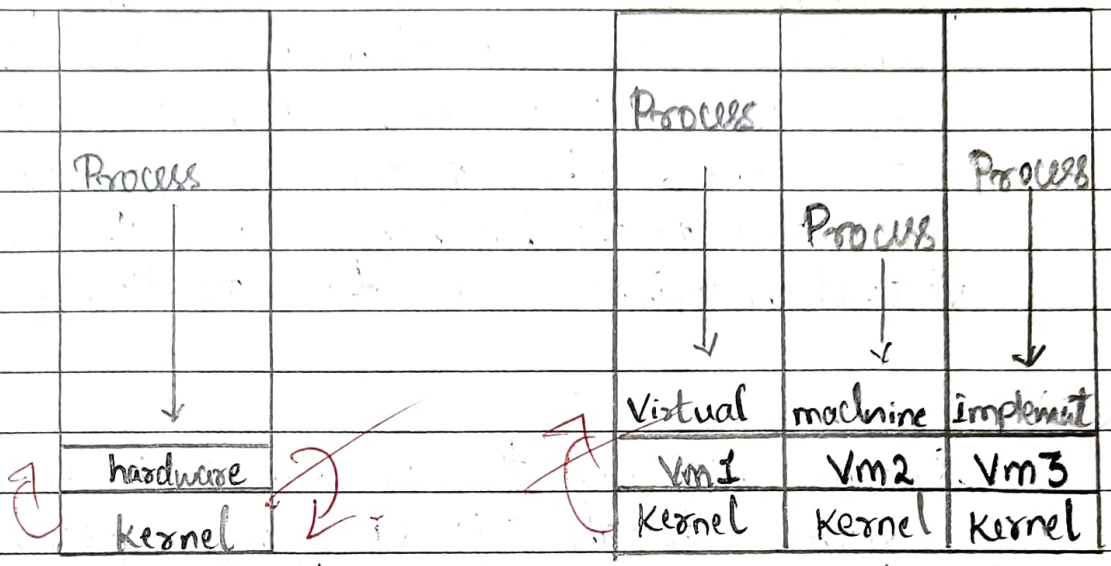
2CS035-4

DD MM YYYY
12 01 2023

Module-1.

2. (a)



Non-Virtual machine Virtual machine.

Introduction :-

The virtual machine is a fundamental process where the hardware creates an illusion that systems process in a single processor only. The virtual machine creates an interconnection with the user and kernel, and it creates an illusion that the hardware and the process between different systems is executed in a single system only.

Implementation :-

Here, we can see that the virtual machine implementation is a quite difficult process but the process here is quite fast where we can combine different process under one system. The Non-virtual machine creates a connection directly with the kernel, whereas the virtual machine separates the processes and combine different process under one system namely (as Vm1, Vm2, Vm3) under the kernel version.

DD MM YYYY

Benefits:-
The main benefit under this is that it can combine two or more process in one system while a Non-virtual machine cannot combine and can execute only one process at a time with kernel. The process is executed through connection to the hardware and then with the virtual machines and then to kernel versions.

2 (b)

System calls are the platform that connects the servers to the OS (Operating Systems). These system calls execute the tasks of programs to give the output. The system calls are divided into following types :-

- Process schedule.
- File Management
- Device Management
- Information Maintanance.
- Communication.
- Protection.

* Process schedule :- The process schedule includes abort, start an event, start a process, terminate a process, call, start, stop, exit an event and allocate a free memory. This process scheduling call is executed in MS DOS, Linux and Ubuntu etc. while the process is executed with the help of free memory.

DD MM YYYY

* File Management :- The file management allocates a file, move a file that the process & tasks has been executed & contains the information of some specific files that need to be executed.
* Device Management :- The Device management has the interconnections with the hardwares like mouse, keyboard and other devices where it takes the inputs and tasks that needed to be executed and pushes the desired output also.
* Information Maintanance :- The Information Maintanance has the commands and operations that needs to be executed while an input needs, and the operands that needed to execute the commands.
* Communication :- The communication is responsible for the interconnections in the operating systems with servers and the input and output devices. Thus are with all the connection to send and recieve the information from one end to another.
* Protection :- The Protection guides the information and responses for the commands and the malwares that protects the information inside memory and other things.

QUIZ

1. (c) New
2. (a) when process is scheduled to run after some execution.
3. (b) Communication b/w two process
4. (a) CPU registers.
5. (d) 1

D D M M Y Y Y Y

Module-2

3. (a)

The IPC or the Inter Process Communication is responsible for the communication network between the operating systems, servers and the hardware devices in the system. The Inter Process Communicatn is divided into two types :-

- Independent Process :- here the process does not affect other processes or operations in the system.
- Dependent Process :- here the process do affect other processes and operations in the system.

The Benefits of Inter Process Communication :-

* CPU Utilization.
* Speed-up.
* Modelarity.
* Communication ease
* Desired outcome.

The IPC has two majo components called Shared Memory and Message Passing.

* Shared Memory :- The shared memory allocates the memory using system call and it can transfer huge data. The system call here is used only for memory allocation. The communication process here is quite fast.
* Message Passing :- The message passing transfers information along with the objects and it uses system call always to read and write operations. It can carry less data and communication

DD MM YYYY

process is also quite slow.

3.(b)

Multi-Threading Module :-

The multithreading here is used for the communication porpose in the operating system with the servers. It has been divided into three teppes as :-

* Many - to - one.
* One - to - one.
* Many - to - Many.