2CS03 64

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Module - 1

① (a) operating system

↳ A operating system is a sytem software that acts as an intermediatory between a user of a computer hardware os allow the user to execute program in a convinent and effective way.

Services of operating syster.

User interface.

↳ Means by which users can issue command to the line interferance a Graphical User interface

Ex - window, x-window, KDE, Gnu.

or batch.

Command Line interferance.

↳ Command are given to the system. In Batch interferance. Command and directive to control there system. window with pointing device to get input and keyword to End the text. Program interface int RAM in the program. and terminate the program

I/O operation.

↳ The OS is reponsible for inter-

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face tranferring data from one memory location to another and give to the system. In Batch..

It includes specels devices.

File System Manipulation.

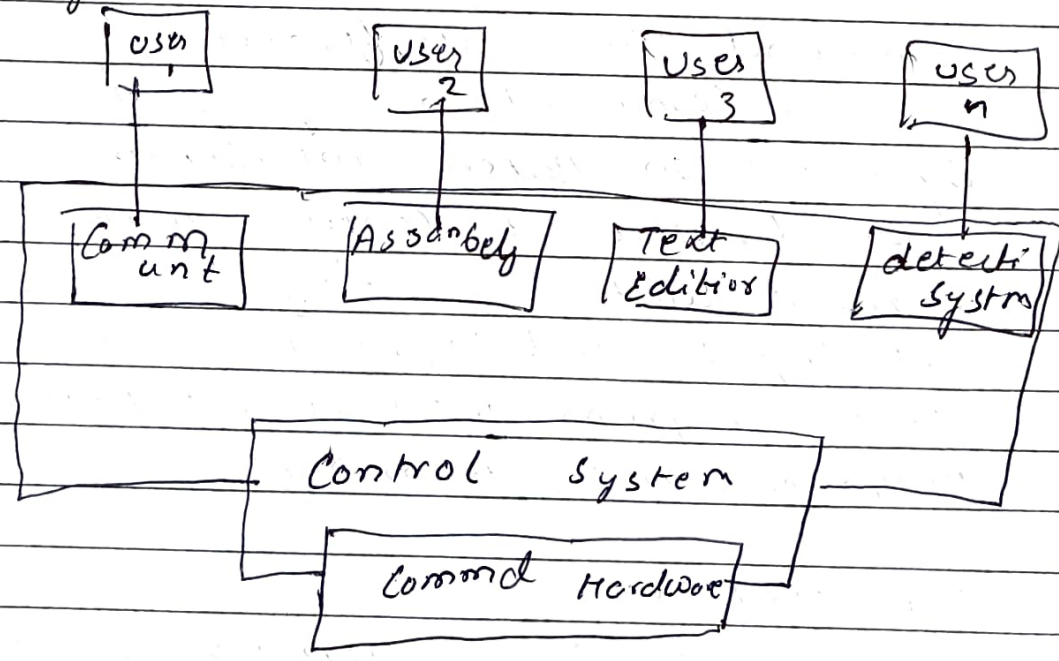
↳ Progrom need to read and write file or directories. The servic- required to Create a delete file.

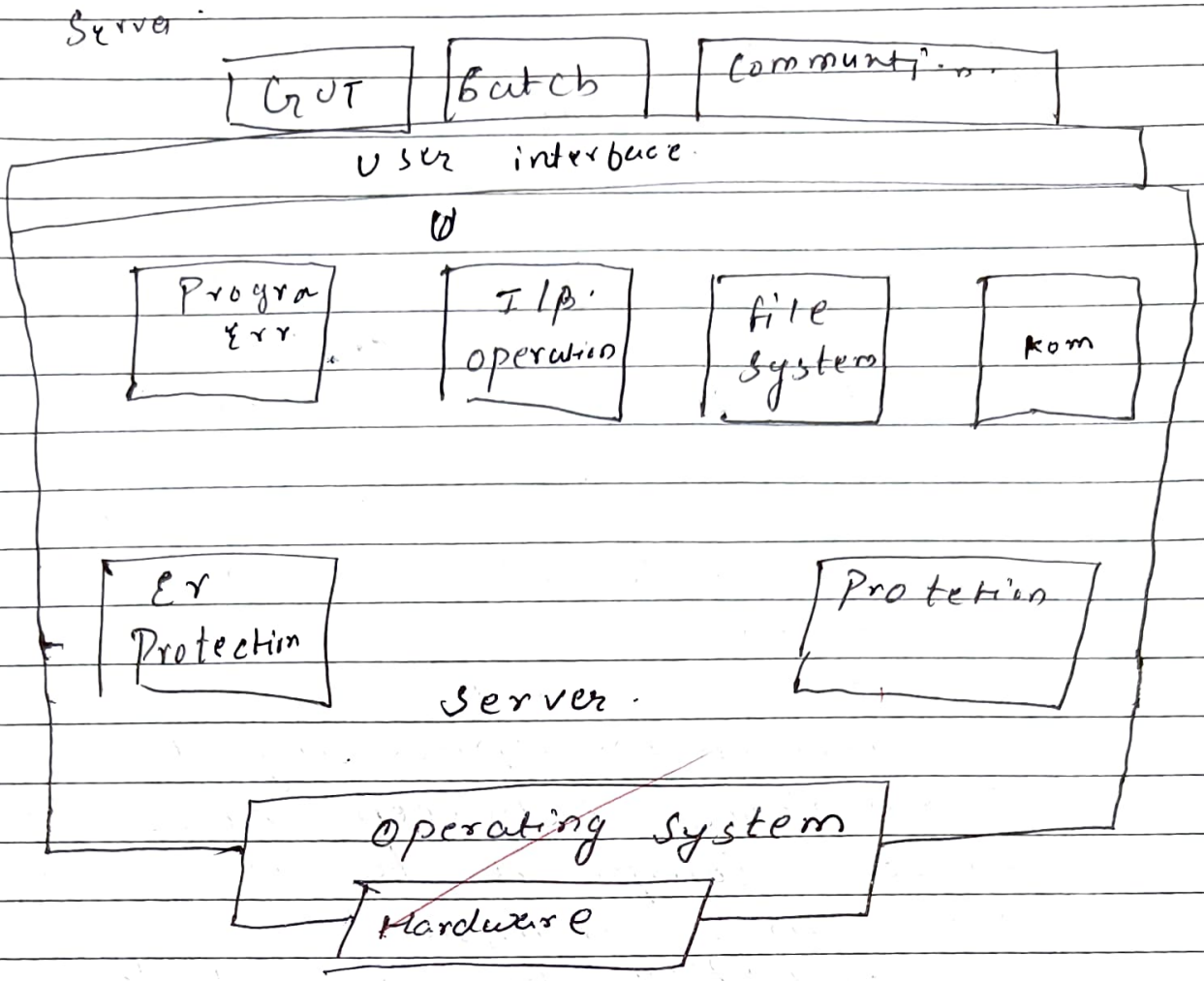
Error Detection.

↳ Both hardware and software errors must be detected and handled appropriately by the os.

Error may occurs in the CPU and memory hardware

Diagram.






(b) Difference Between.
Multi Processor system and Clustered System.

Multi Processor.

↳ Here in a multiprocessor system multiply processors share a common memory and are tighly Copied. All processor can access the shared memory.

where as a Clustered System A.
↳ computer is Connected and

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controlled the data. Here in clustured system we Each node has its own memory and processors and Communicates between nods is done.

Memory artecticture.

Here in multiprocessing data is specfiooly has a Single shared Memory space that dl processor can access. This shared memory is simplified.

where as in clustured Memory Each node is clustured with another one. Hen.

Communicatio overhead.

Here in multiprocessing data is Communicate betweeen nods involves network Compared to direct memory acesss in a multiprocess.

Scalibility where as clustured involves higher latency and overhead Compared to dirct memory accesss in a multiprocessor

* Multi Programing and Multitasking.

Defination.

↳ Yn Multi Programing primary focused on efficient utilization of cpu More user centric. allowing multiple tasks to run Concurrently to enhance

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User experience

Processor Utilization.

↳ In multi programming aims to maximize processor utilization by overlapping CPU and I/O operations of diffrent program.

Wherea as Multitasking focus on providing low Responsiviness and inter activity by quickly switching between modules.

Task switching.

↳ Multi Programing. switching between program is usually done after the completion of a predified time slice or when a program enter the I/O wait state

where as Multitasking involves dynamic and other scheduling creteria

User Interface.

↳ Multi Programing primily design for batch processing without much Emphasis on user interaction during program execution.

Multitasking. Geared towards interactive system.

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# Module-2.

(3) a Inter process communication.

↳ Process executing may be either co-operative or independent processes.

Independent process processes that cannot affect processes or be affected by other processes executing themself.

Cooperating Process that can among processes are allowed for following reasons.

Information sharing.

↳ There may be several processes which needs to access the same file so the information must be accessible at the same time allsors.

Computation speedup - often a solution to a problem can be solved faster if the problem can be broken down into sub-tasks which are solved simultaneously (particularly)

Modularity. - A system can be ~~modified~~ as the divided into Coorperating module and execute by sending information among other.

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convenience. Even a single user can work on multiple task by information sharing.

Cooperating processes required some type of inter process communication.

which allowed by two models

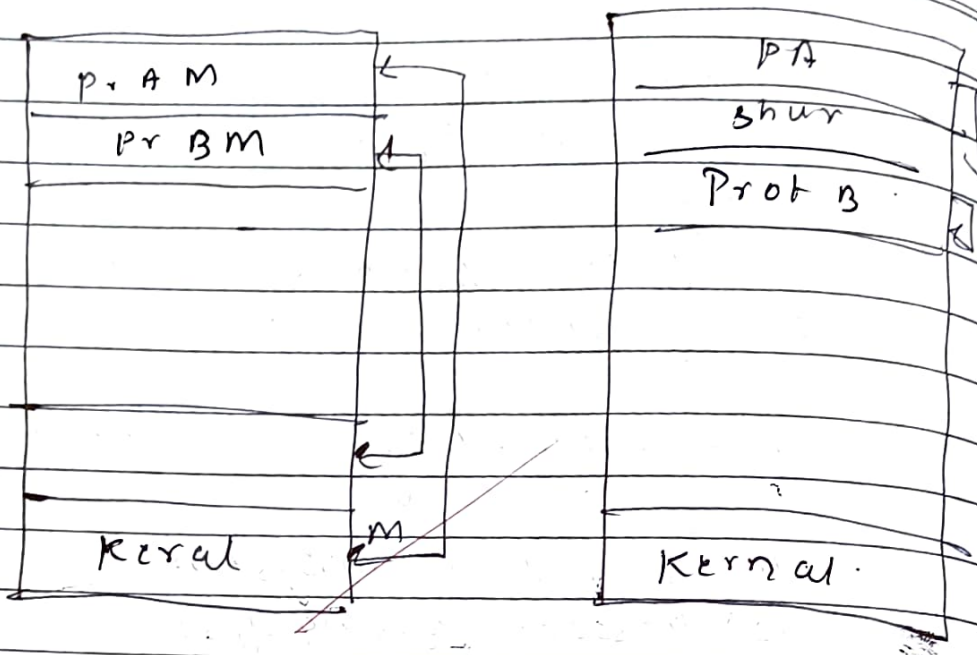
(1) Shared Memosystem.
(2) Message Passing system

shared Memory is faster once it is set up because no system call are required and access occurs at normal memory speed. shared must be shared quickly on the same computes.

well Message Memorystem.
required system call for every message transfer and is therefore slower but it is simple to set up and works with it. It is slower but it simpler compared to Message Memorystem.

so easy to set up and work across multiple computer.

Message passing is generally pereferable when another frequency. of data transfer transmits




(b) Mulbi -Threading Model.

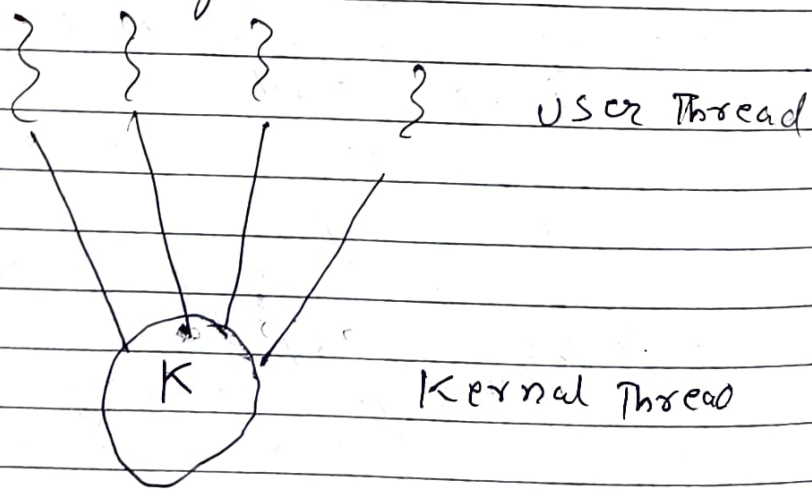
↳ User lev

Many to One Model.

↳ Many user level threads are mapped to one kernal thread.

These Thread management is done by thread Library.

Ex = Solaris greenthreads.



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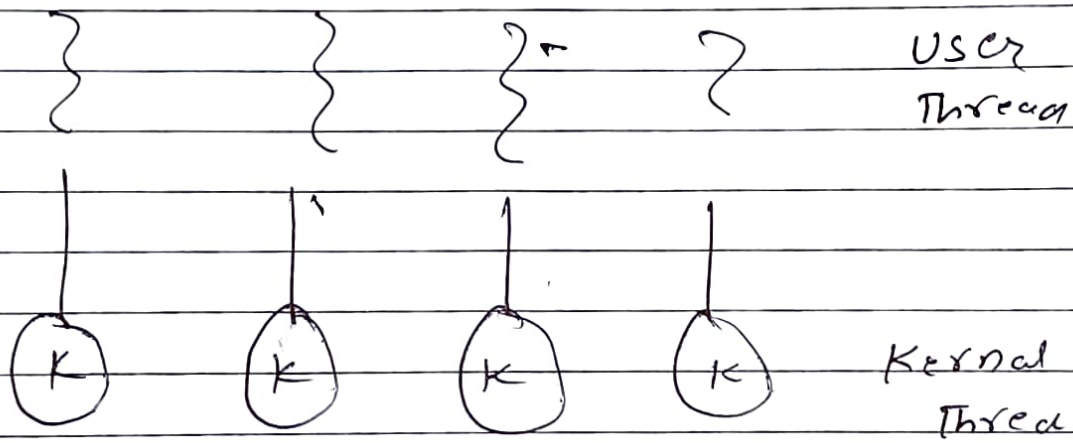
one to one Model.

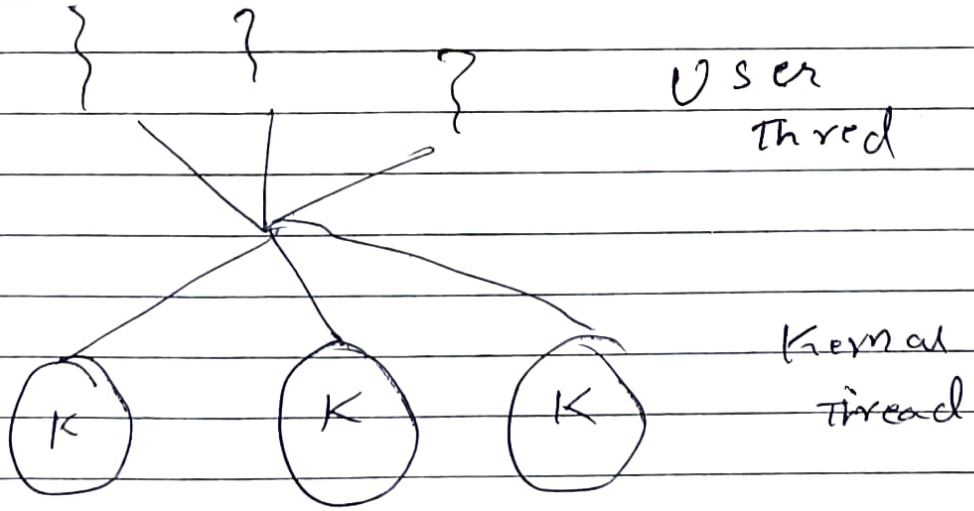
↳ Each user thread is mapped to Kernal thread.

↳ It provides more concentency than the multi threading Model.




Mony to Mony Model.

↳ Mony user level threads are multiplied to a smaller numbes of Kernal thread.



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Quiz

① (b) ✗
② (a) ✓
③ (b) ✓
④ (b) ✓
⑤ (c) ✗