2C 30856

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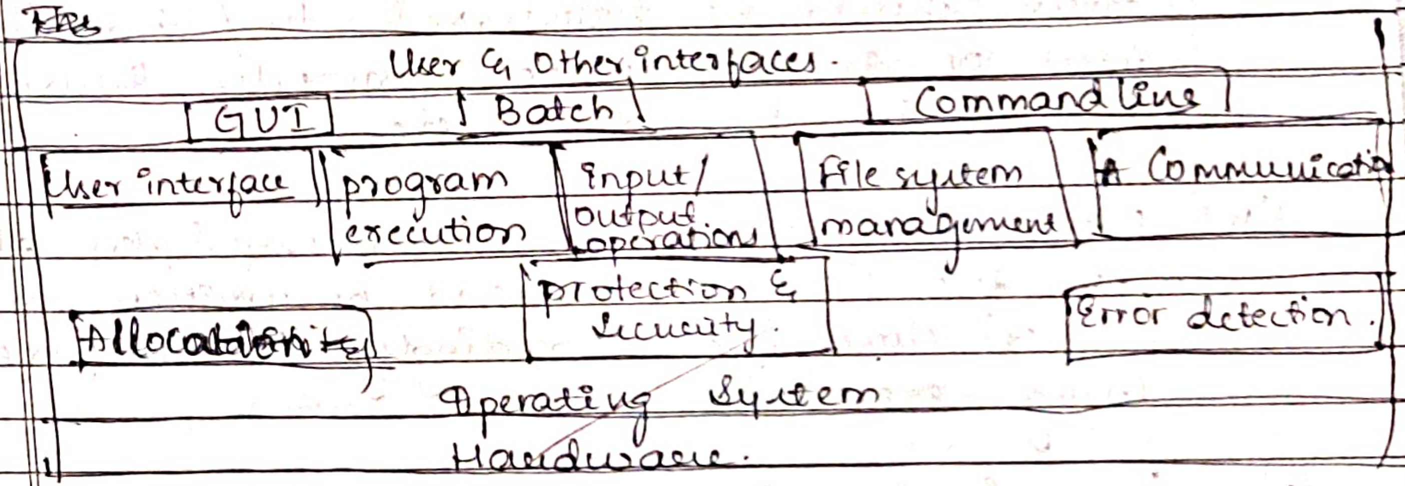
Test - 1.

1 Module - 1.

1) Operating System is the the Software modularity & operates between user of a computer and hardware of a computer.

* Operating System is mainly based on the hardware of a computer.

~~Fig~~



The different services that are provided by the Operating System are :

(i) User Interface:

~~The~~ This means the user gives the commands to the system that will be executed.

Different types of interface are the graphical user interface → here there is pointer window in which the keyboards input the text.

Batch line - The command which is been given will be executed and run.
Command line → the ~~user~~ commands are given to that process.

(ii) Program Execution: The program has to be load into the RAM through CPU and has to run and be terminated normally or abnormally.

(iii) Input Output operations: All the instruction & process should be transferred to / from the input or output devices properly through, mouse, keyboard, pointers etc..

(iv) File System management - Operating System allows the file to ~~be~~ be read or written, or open file or close file accordingly to the process being executed.

(v) Communication: The communication link is established where communication can happen within the same process or between the different processes.

(vi) Error Detection: When the CPU fails to solve the particular logic or process the Operating system goes down with the error detection.

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(vii) Protection & Security : It ~~atto~~ Operating System allows ~~users~~ to whom or which systems can access the needs with ~~&~~ a proper security system.

(b) (i) Multiprocessor System	Clustered Systems.
* ~~use~~ 2 or more computer ~~sha~~ ~~are~~ come closer together	* 2 or more systems share memory and network.
* These are established with buses, memory and other peripheral process.	* These are established with share memory and LAN (Large Area network)
* They are low availability.	* ~~Per~~ They are high availability.
* If one system fails then all of them gets blocked.	* If one system in clusters fails the other continues their execution process.
* They are ~~high~~ low in cost compared to clustered system.	* They are ~~low~~ high cost
* The execution process is slow.	* The execution process is high.
* They use processor and system calls.	* They use SAN Storage Area network (pool of networks).

(ii) Multi programming.	Multi Tasking.
* ~~there a single~~	
* Multi programming is a process where a task at a same time is performed in a single ~~processor~~ CPU	* Multi Tasking is a process where ~~multiple~~ task are performed using multiple CPU at the same time.
* There uses concept of context switching	* There use the concept of share memory.
* The process continues simultaneous ~~is not~~ so that CPU does lie down for long time and improves performance	* Here multiple CPU's continuously run to complete the task and gives better CPU performance.
* The main idea is not to let CPU quee for a longer period of time.	* Here as known it works simultaneously and a task allocation is done.
* Single CPU is used to execute ~~them~~ one process or task	* Multiple CPU are used to execute the task.

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Module - 2

1) Inter-Process Communication : The process of communication transfer through multiple threads are referred to as Inter process communication.

Independent process -> This process does not affect or be affected by other process.

Coordination process -> This process affect or be affected by other process.

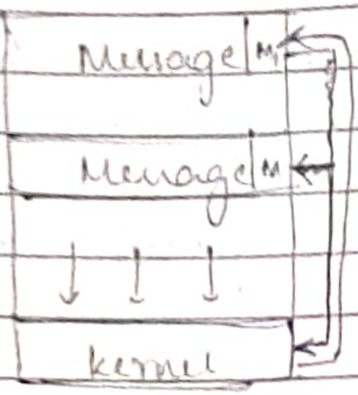
(i) Info sharing : Sometimes the same file will be needed at a time so to this we have info sharing.

(ii) computation speedup - To solve the problem there is a need of break down into sub-tasks so that the execution is made simultaneously with faster rate.

(iii) modularity - ~~The modules are break do~~ The task are broken down into modules and then are executed accordingly.

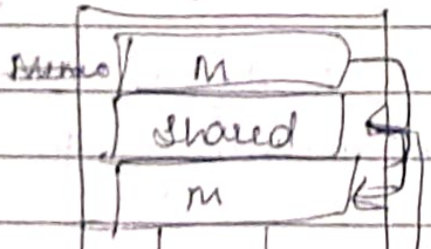
(iv) Convenience -> A single user can do multiple task according to their convenience.

(i) Message passing.



- Message passing is done without using any address space.
- ~~It~~ It is done for transfer of small amount of data and is a efficient process.
- It uses system calls, as it checks for each read and write instruction.
- This is why they are used for small amount data.
- ~~These~~ Message passing are of distributed Systems.
- Message passing does not share data with each other.

(ii) Shared Memory



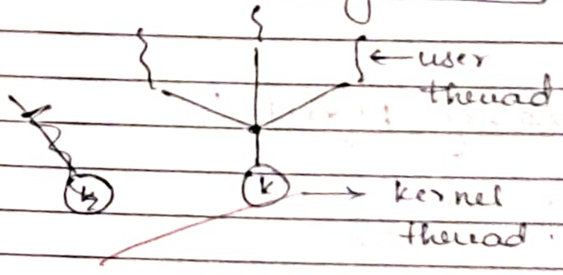
Naming
Sync
Buffering

- Shared memory as an address space, as it shares memory and continues process.
- System call is used only to create the shared memory.
- ~~large~~ It is used for transfer of large amount of data.
- They share data with each other.
- The system call not required as it already present in the operating system

(b)

There are 3 types of Multi-Threading models.

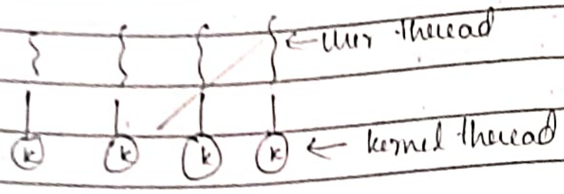
① One-to many Model.



- User thread implements the ~~+~~ thread library
- If system calls the block then the ~~system~~ user-thread gets blocked
- Only one user-thread can access kernel at a time.

Ex : Green threads of Solaris.

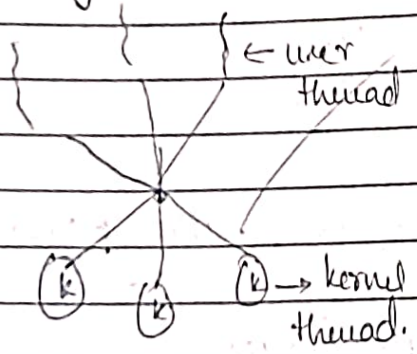
(ii) One - to -One Model:



* These have a limit for the no. of thread being created
* Each user has their own kernel thread
* Here dt in this model the blocking system is not seen and has been overcome.

Ex: windows & linux 95 - XP

(iii) Many to Many Model:



* There are no limits how many threads to be created.
* All the user thread ~~are~~ can access with a other kernel thread
* It is also called as two- tier model
* Ex: IRIX.

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Quiz

1) ~~[illegible]~~ fork.
2) When process is using CPU.
3) Communication between 2 ~~threads of same~~ process.
4) Program Counter
5) 5.

1) a ✓
2) a ✓
3) b ✓
4) b ✓
5) b ✓