

ID

14517

Q1.

Ans 1

Process

~~Thread~~

- ① Processes are heavy weight operations
- ② Every process has its own memory spaces.
- ③ Inter processes ~~has~~ communication is slow as process have different memory address.
- ④ Context switching b/w the process is more expensive.
- ⑤ Processes don't share the memory with other process.

Thread

- ① Threads are light weight operation.
- ② Threads use the memory of process they belong to.
- ③ Inter thread communication is fast as threads of the same process share the same memory address of the process

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②

They belong to

④ Context switching b/w threads of the same process is less expensive.

⑤ Threads ~~share~~ share the same process.

Exp \Rightarrow ① User level thread (ULT)
 \approx ② Kernel level thread (KLT)

Question No 2 \leftarrow

~~_____~~
Answer No 2 \leftarrow
SS

1. User level thread:

Is

Implemented in the user level library they are not created using the system calls. Thread switching does not need to call OS and to cause interrupt to kernel. Kernel does not know the user level thread and messages them as if they were single threaded processes.

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② Kernel level Thread:-

Kernel knows and manages the thread instead of Thread table in each process, the kernel itself has Thread table (a master one) that keeps track of all the threads in the system in addition kernel also maintain traditional process table to keep track of the process. As kernel provides system call to create and manage threads.

Question No 3:-

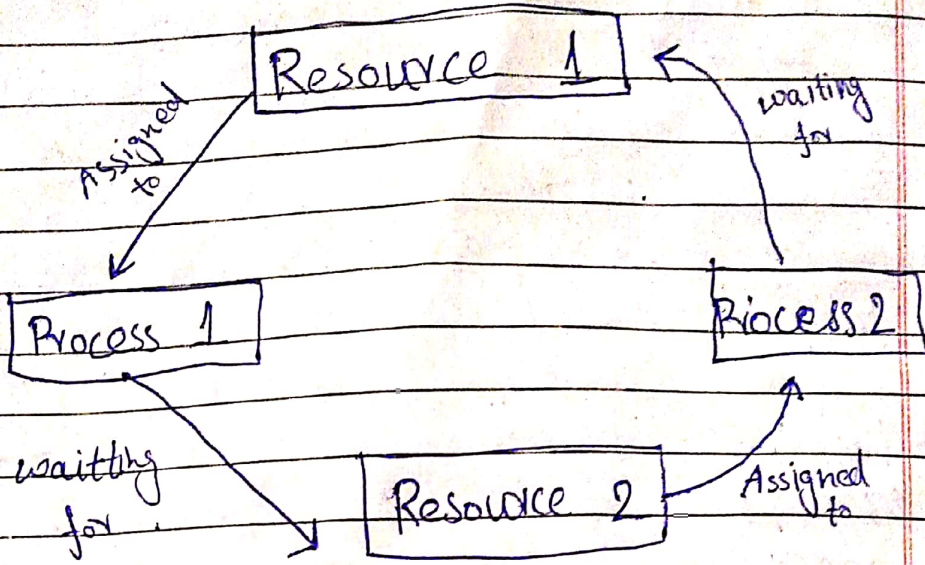
Answer No 3:-

Dead Lock :-

is a situation where a set of processes are blocked b/c each process is holding a resource and waiting for an other resource required by some other process.

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Part (b) :-

Mutual Exclusion :- one or more than one resources are non-sharable (only one process can use it at a time).

Hold and Wait :- A process is holding at least one resource and waiting for resources.

No Preemption :- A resource cannot be taken from a process unless the process releases the resource.

Circular Wait :-

A set of processes are waiting for each other in circular form.

Question No 81 :-

~~Different b/w~~
write your understanding about logical vs physical address space ?

Answer No 82 :-

The basic difference b/w logical and physical address is that logical address is generated by CPU in perspective of a program whereas the physical address is a location that exists in the memory unit. The logical address does not exist physically in the memory where physical address is a location in the memory that can be accessed physically.

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The logical address is generated by the CPU while the program is running whereas the physical address is computed by the memory management unit (MMU).

Question No 6

Discuss a solution to the critical-section problem must satisfy the three requirements?

Answer No 6 =>

S S S S A Critical Section is a code segment that accesses shared variables and has to be executed as an atomic action. It means that in a group of competing processes at a given point of time, only one process must be executing its critical section if any other process also wants to execute its critical section, it must wait until the first one finishes.

Solution to Critical Section Problem.

①. Mutual Exclusion:

↳ = = = Out of a group of cooperating processes only one process can be in its critical section at a given point of time.

②. Progress:

↳ = If no process is in its critical section and if one or more threads ~~want~~ want to execute their critical section then in one of these threads must be allowed to get into its critical section.

Question No 7_g

↳ Dynamic loading and linking Differentiate with example?

Answer No 7_g

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→ Loading :-

- ① Routine is not loaded until it is called
- ② Better memory space utilization - unused ~~are~~ routine is never loaded
- ③ Usefull when large amount of code are needed to handle infrequently occurring causes.

Linking :-

① linking postponed until execution ~~#~~ time.

② Small piece of code stub, used, to locate the appropriate memory-resident library routine.

③ Stub replaces its self with the address of the routine and executes the routine.

④ Operating system needed to check if routine is the processes memory address.

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Question No 4 :-

Answer No 4 :-

Different B/w Network
operating System and Distributed
operating System.

The main difference b/w operating system and Distributed operating system is that a network operating system provides network related functionalities while a distributed operating system connects multiple independent computers via a network to perform tasks similar to a single computer.

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Question No 50
→ → → what inconveniences
that users can face while
interacting with a computer
system which is without
an operating system?

Answer No 50
→ → →
Without operating
system computer hardware is
only an inactive electronic
machine which is inconvenient
to use for execution of
programs. As the computer
hardware ~~at~~ machine
understands only the machine
language. It is difficult to
develop each and every
program in machine language
in order to execute it.