OS

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Q1

Q1) Explain the Main Purpose of an Operating system?

Ans:- The main Purpose of an operating system exist for two main reasons or Purposes.

- One is that it is designed to make sure a computer system performs well by managing its computational activities.
- Another is that it provides an envirnment for the development and execution of Programs.

Main functions of An OS.

- Processor Management
- Memory Management
- Derice Management
- storage Management
- User Interface

Q2

Q2 What are the advantages of a multiprocessor system?

Ans The advantages of a multiprocessor system are:-

a) Multiple Independent jobs can be made to operate in parallel.

b) A single job can partitioned into multiple parallel tasks.

* Increased Reliability:- A failure or error in one part has a limited effects on the rest of the system. If a fault causes one processor to fail, a second processor can be assigned to perform the functions of a disabled processor.

* Increased throughput:- An increase in the number of processors complete the work in less time. It is important to note that doubling the number of processors does not halve the time to complete a job.

(Q3) Describe the Objective of Multiprogramming.

Ans

Objective of Multiprogramming:-

The objective of multiprogramming is to have some process running at all times, to maximize CPU utilization. The objective of time sharing is to switch the CPU among processes so frequently that users can interact with each program while its running.

To meet these objectives, the process scheduler selects an available process for program execution on the CPU. For a single-processor system, there will never be more than one running process. If there are more processes, the rest will have to wait until the CPU is free and can be rescheduled.

Q4) Give some benifits of multithreaded Programming.

Ans)

* Responsiveness:-
Multithreading an interactive application may allow a program to continue running even if part of it is blocked or doing a lengthy operation.

* Resource sharing:-
Threads share the memory and the resources of the process to which they belong.

* Economy:-
Because threads in a process shares the resources, it is more economical to create and context-switch threads.

↳ Creating process is about thirty times slower than creating threads in solaris.

* Utilization of Multi-Processor Architectures:-

↳ Threads may be running in parallel on different processors.

Q5) what is RR scheduling algorithm?

Ans)

RR Scheduling Algorithm:-

The round-robin (RR) scheduling algorithm is designed especially for timesharing systems.

↳ Round robin scheduling is similar to FCFS scheduling, except that CPU bursts are assigned with limits called time quantum.

↳ When a process is given the CPU, a timer is set for whatever value has been set for a time quantum.

↳ If the process finishes its burst before the time quantum timer expires, then it is swapped out of the CPU just like the normal FCFS algorithm.

↳ If the timer goes off first, then the process is swapped out of the CPU and moved to the back end of the ready queue.

Q) What are the primary differences between Network OS and Distributed OS.

Ans) Distributed OS (DOIS) Provide a unified environment designed to optimize operations for the network as a whole, not just for local sites.

* The major difference between NOS and a DOIS is how each views and manages the local and global resources.

Network OS builds on capabilities provided by the local operating system and extends it to satisfy new needs.

* It accesses resources by using local mechanisms and each system is controlled and managed locally based on that system's policy.

Item	Distributed OS		Network OS	Middleware based DS
	Multiproc.	Multicomp.		
Degree of transparency	very high	High	Low	High
Same OS on all nodes?	Yes	Yes	NO	NO
Number of copies of OS	1	N	N	N
Basis for communication	Shared memory	Messages	Files	Model Specific
Resource management	Global, central	Global, distributed	Per node	Per node
Scalability	NO	Moderately	Yes	Varies
Openness	Closed	Closed	Open	Open

(Q7) What inconveniences that a user can face while interacting with a computer system, which is without an operating system.

Ans:- A computer without an operating system is like a man without a brain.

↳ You need one, or it won't do a thing.

↳ Still, your computer is not useless, because you can still install an operating system if the computer has external memory like a usb flash.

↳ Without an OS computer hardware is only an inactive electronic machine, which is inconvenient to user for execution of programs.

↳ As the computer hardware only understands the machine language. It is difficult to develop each and every program in machine language in order to execute it.

↳ Thus without OS execution of user program or to solve user problem is extreamely difficult.