Summer-20 Mid Term Assignment

Subject: Operating System Concepts

ID=13027

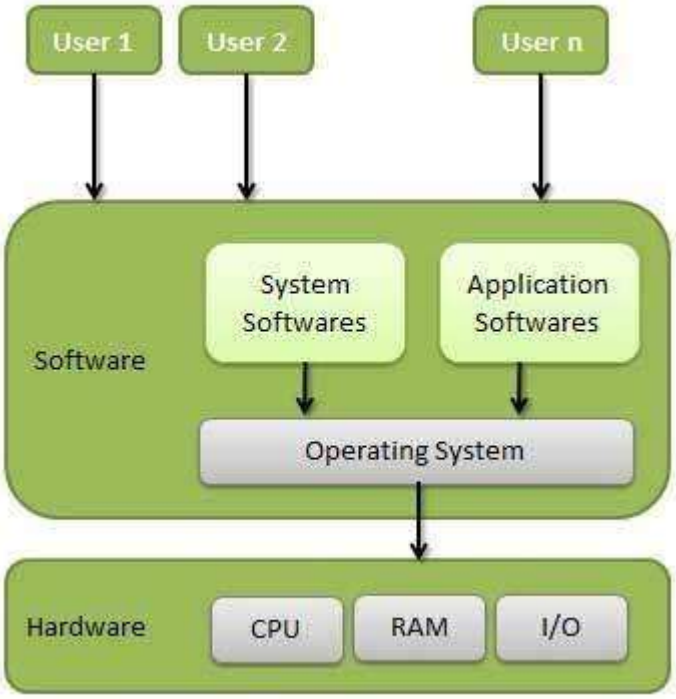
Note: Please attempt all Questions in sequence. All questions carry equal marks. **(30)**

1. Explain the main purpose of an operating system?

   Ans:

   Operating System:

   Operating system works like as bridge in between hardware and software, and the main purpose and goal of the operating system is to manage all the resources of hardware and software that are connect with the computer. Without operating system all the computer system are powerless, because operating system create the interface between the user and hardware. When user give any command to the computer then operating system transform thesecommands in to binary form such as 0 and 1, because computer systems are not able to understand directly our commands. Computer can understand only machine language.



2. What are the advantages of a multiprocessor system?

   Ans:

Multiprocessing operating system support the use of more than one processor in close communication.

The advantages of the multiprocessing system are:

- **Increased Throughput** − By increasing the number of processors, more work can be completed in a unit time.
- **Cost Saving** − Parallel system shares the memory, buses, peripherals etc. Multiprocessor system thus saves money as compared to multiple single systems. Also, if a number of programs are to operate on the same data, it is cheaper to store that data on one single disk and shared by all processors instead of using many copies of the same data.
- **Increased Reliability** − In this system, as the workload is distributed among several processors which results in increased reliability. If one processor fails then its failure may slightly slow down the speed of the system but system will work fluently.

3. Describe the objective of multiprogramming.

   Ans:

   The main objective of multiprogramming is that to have process running all the time

   with this design the cpu utilization is said to b the maximized. Multitprogramming is

   the feature of the operating system that with the help of it it can run the multiple

programs at the same time.It assumes a single shared processor it increases the cpu utilization by organizing jobs so that the cpu always has one to execute.

4. Give some benefits of multithreaded programming.

   Ans:

   It allows the execution of multiple parts of a program at the same time. These parts are known as threads and are lightweight processes available within the process. So multithreading leads to maximum utilization of the CPU by multitasking.

   The benfits of the multithreading are as follow:

   - Superior application responsiveness
   - Better Communication
   - Program structure simplification
   - Minimized system resource usage
   - Superior application responsiveness
   - Simultaeous and fully symmetric use of multiple processors for computation and I/O.

5. What is RR scheduling algorithm?

   Ans:

   The name of this algorithm comes from the RR principle, where each person gets an equal share of something in turns. It is the oldest, simplest scheduling algorithm, which is mostly used for multitasing.

   RR scheduling algorithm is one of the algorithm which is employed by process and the network schedulers in computing as the term is used generally the time slice (also used as the time quanta) are assigned to each of the process in equal portions and in circular order handling all processes without he priority(also knows as the cyclic executive).

6. What are the primary differences between Network Operating System and Distributed Operating System?

   Ans:

   The network operating system and distributed software system have a common hardware base, but the differences lies in their software

   Networking Operating System:

   A network operating sytem is made up of software and associated protocols which allows a set of computer network to be used together. In this OS the environment users are aware of the multiplicity of machines and the control of the file placemet Is done manually by the user.

   Distributed Operating System:

   Distributed operating system is an ordinary centralized operating system but runs on the multiple independent CPUs. In this OS the environment users are not aware of the multiplicity of machines and it can be done by the system automatically.

   It is more reliable or fault tolerant i.e distributed operating system performs even if certain part of the hardware starts malfunctioning.

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

   Ans:

Operating system is a required component of the computer system.

Without an operating system computer hardware is only an inactive electronic machine, which is inconvenient to user for the execution of programs.

the computer hardware or the machine understands only the machine language. It is hard to develop each and every program in machine language in order to carry out it.

So without the operating system execution of user program or to solve user problems is extremely difficult.

Good Luck