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COURSE: CSE - 231 (Operating System Concept)

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Batch : 08 (EV).

⇒ ⇒ Final Assessment ⇒ ⇒

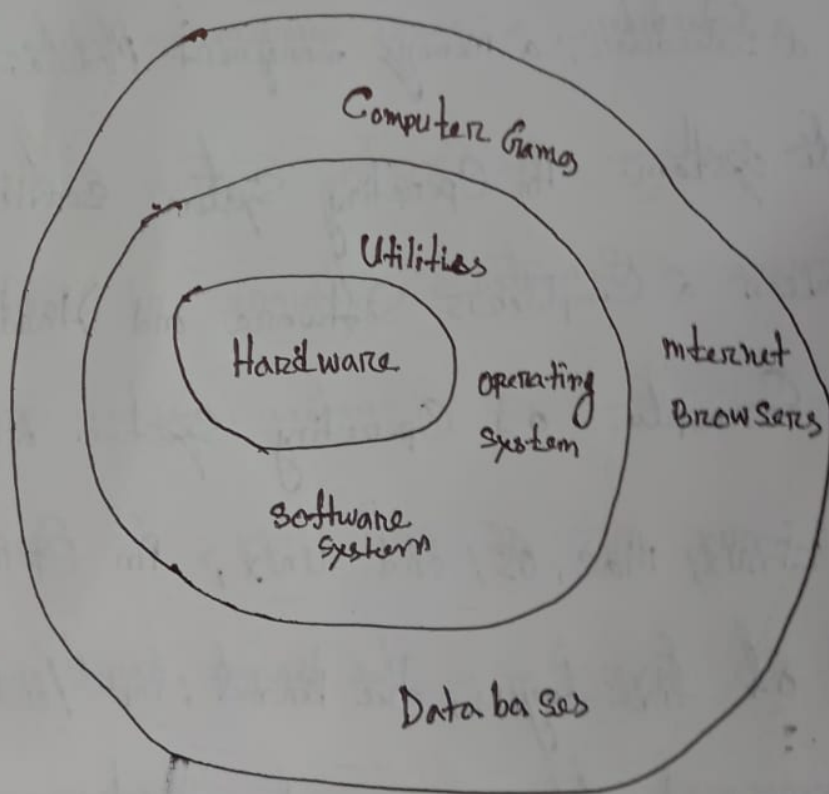
Answer to the Question No-1.

□ Basic Concept Operating System: An Operating System with the Allocation of resources and services, such as memory, processors, devices, and information. The Operating System correspondingly. Includes programs to manage these resources, such as a traffic controller, a scheduler, a memory management module, I/O programs and a file system. An Operating System serves as a linker between a computer's software and hardware. Typical examples of Operating Systems are Windows, Linux, Mac OS, and Unix. An Operating System is composed of five layers, the kernel, input/output, memory management, file management system, and user interface.

## ② Operating System Definition and function:

⇒ In the Computer System (Comprises of Hardware and Software), Hardware can only understand machine code (in the form of 0 and 1) which doesn't make any sense to a naive user.

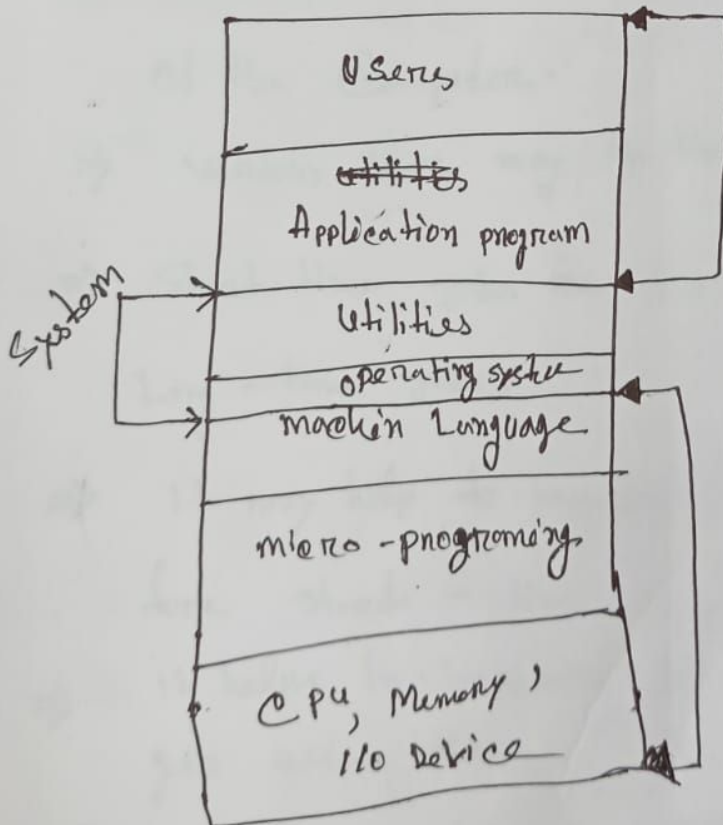
We need a system which can act as an ~~inter~~ intermediary and manage all the processes and resources present in the system.



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An operating system can be defined as an interface between user and hardware. It is responsible for the execution of all processes. Resource Allocation, CPU management, file management and many others tasks.

The purpose of an operating system is to provide an environment in which a user can execute programs in convenient and efficient manner.



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Answer to the Question No - 2

There are various advantages and Disadvantages of the multiprogramming Operating system. Some of the Advantages and disadvantages are as follows: -

Advantages:

- ⇒ It provides less response time.
- ⇒ It may help to run various jobs in a single application simultaneously.
- ⇒ It helps to Optimize the total job throughput of the Computer.
- ⇒ Various users may use the multiprogramming system at once.
- ⇒ Short time jobs are done quickly in Comparison to Long-time jobs.
- ⇒ It may help to ~~improving~~ improve turnaround time for short-time tasks.
- ⇒ It helps in improving CPU utilization and users gets side idle.
- ⇒ The resource are Utilized smartly.

(11) Disadvantages Operating System. (5)

⇒ It is highly complicated and sophisticated.

⇒ The CPU scheduling is required.

⇒ Memory Management is needed in the Operating System, because all types of tasks are stored in the main memory.

⇒ The harder task is to handle all processes and tasks.

⇒ if it has a large number of jobs, then

long ~~time~~ term jobs will require a long

wait.

→ X →

Answer to the Question No-3

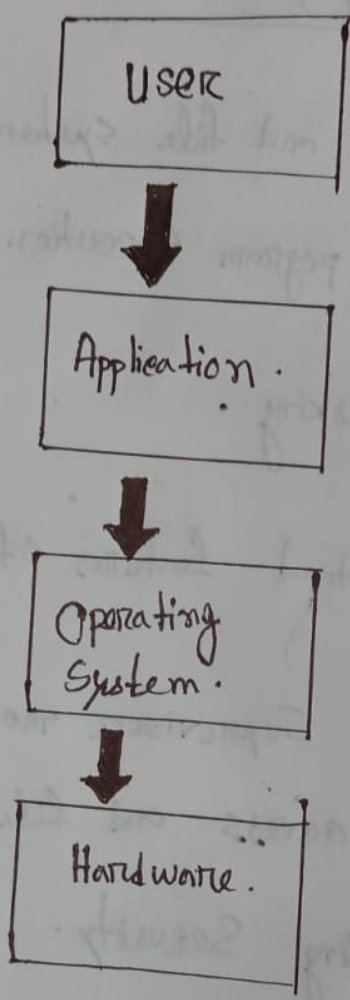
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Features of operating system: (OS)

Allows disk access and file system Device driver.  
Networking Security. program Execution. Memory management  
Virtual Memory Multitasking.

⇒ Here is list important features of OS:

- ⇒ protected and Supervisor mode.
- Allows disk access and file system Device Drivers Networking Security.
- program Execution.
- Memory management Virtual Memory Multitasking.
- Handling I/O operations.
- Manipulation of the file system.
- Error detection and handling.
- Resource allocation.
- Information on Resource protection.



a feature operating system

- Memory management
- Handling I/O operation
- Monitoring of the system
- Error detection and handling

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Objects Operating System: The operating system

acts as a bridge between the user of a Computer System and the Computer hardware. All of the Applications required for your programs to utilize the Computer Hardware are located on top of the laptop Operating System.

⇒ The following are the main objects of of Operating system —

- (i) Efficient Efficiency -
- (ii) Hardware abstraction -
- (iii) Convenience -
- (iv) System Resource management.

Efficiency

Hardware  
Abstraction

Objects of OS

Convenience

System  
Resource  
management



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▣ Efficiency : The operating system increases the production efficiency. This is because the System Configuration takes less time. By default the Operating system handle system takes such as allocating resource to processes, and Resolving Conflicts between different program and users.

▣ Hard ware abstraction : The operating system performs a good job of concealing the Computers intricate details. The user can fully utilize the Computer Hardware without having to cope with the accompanying difficulty.

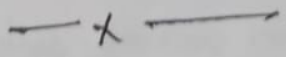
▣ Convenience : In the absence of an operating system user would have to deal with the Hard ware directly without Access to the pre - Configured utility packages.

The Come with an operating systems. This would make using a Computer extremely inconvenient. operating System allow users to go right to work on the tasks they want to do without dealing with the burden of setting up the system beforehand.

System resource management: The operating

System serves as a neutral. It serves a management role in the Computer system by ensuring equitable resource distribution among various operation and consumers.

So far we've discussed the objectives of the Operating System let's go over the function of Operating System.



Ans: Most Secure operating system: Choosing a Secure system

Offer a number of significant Advantage, particularly in Environment where Confidentiality data integrity and Security are priorities. Here are reasons to opt for a Security Operating System -

▣ protection against cyber attacks: Secure operating System

are designed to resist attacks from malware, ransomware and other form of cyber-attack. They are often equipped with advance security measures such as strong encryption, built in firewalls and enhanced access control.

▣ Data Confidentiality: These system are ideal

for users who handle sensitive or confidential information. ∴ They often feature data

Data and Communication encryption ensuring that <sup>(12)</sup> personal or business information remains private.

☐ Regulatory Compliance: for Business and Organization

Using Secure Operating System can help to comply with data protection regulation such as the GDPR in Europe or HIPAA in the USA.

☐ Reducing the risk of data leakage: By limiting access to sensitive data and recording ~~act~~ activities, this system reduces the risk of internal or external data leaks.

☐ Reliability and stability: Secure Operating systems are often more stable and reliable as they are less likely to be attacked by malware or security attacks. e.t.c.

☐ Advanced user control: ☐ preventing surveillance

☐ Sensitive Environment: ☐ Access management.

⇒ Deadlock operating system: A ~~dead~~ Dead lock

Operating system is a deadlock occurs when there is at least one process which is waiting for resources to be released by another process in order to finish a task correctly. In this graph process A is waiting for resource R2 to be released by process B to finish a task.

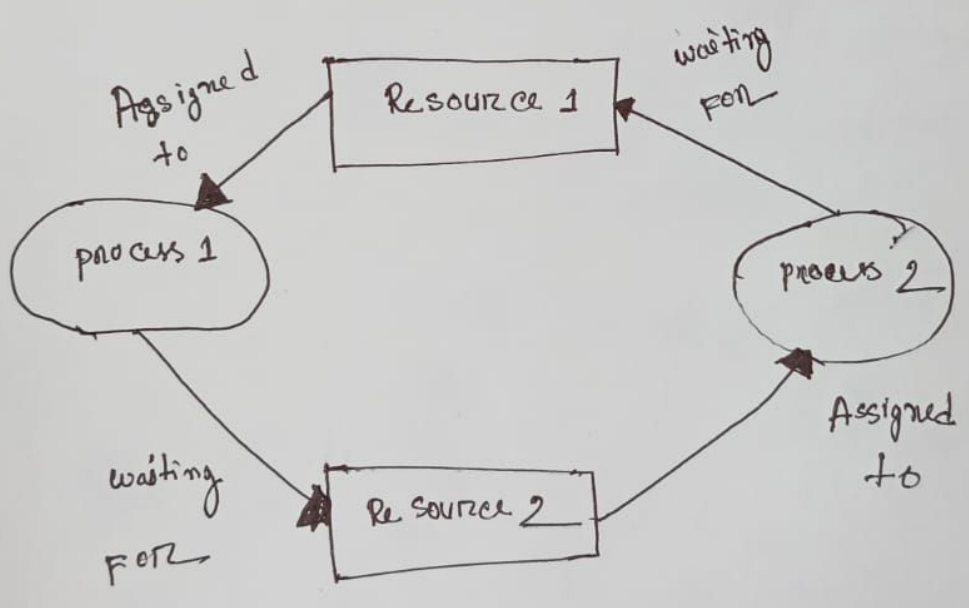


Fig: Deadlock operating system.