

Lecture 1-What is an Operating System?

1. What is one of the primary roles of an operating system?

- A) To directly execute all user applications
- B) To provide clean abstractions of hardware resources
- C) To replace hardware functionality
- D) To design hardware components

Answer:

2. Which of the following is NOT typically managed by an operating system?

- A) Memory management
- B) CPU scheduling
- C) Email communication
- D) I/O management

Answer:

3. What is the "kernel" in an operating system?

- A) The hardware component managing memory
- B) The one program running at all times on a computer
- C) A user interface for applications
- D) A type of application program

Answer:

4. Which of these is an example of virtualization provided by an OS?

- A) Infinite memory abstraction
- B) Direct access to hardware by applications
- C) Hardware error correction
- D) Physical resource duplication

Answer:

5. What is dual-mode operation in an operating system?

- A) Running two operating systems simultaneously
- B) Providing two modes: kernel mode and user mode
- C) Allowing two users to access the same process
- D) Switching between two CPUs dynamically

Answer:

6. What does a process consist of in an operating system?

- A) Only threads of control
- B) Address space, threads, and additional system state (e.g., open files, sockets)
- C) Only memory and CPU time allocation

D) Only compiled code and libraries

Answer:

7. Which of the following is NOT considered a core abstraction provided by an OS?

- A) Threads for processors
- B) Files for storage devices
- C) Sockets for networks
- D) Physical hardware duplication for processes

Answer:

8. What is one key challenge faced by modern operating systems?

- A) Designing new hardware components
- B) Managing applications with diverse software modules on various devices and architectures
- C) Eliminating all bugs in software programs before deployment
- D) Preventing any form of multitasking or concurrency in applications

Answer:

9. What does "protection" in an operating system ensure?

- A) That processes cannot interfere with each other or the OS itself
- B) That all applications run in kernel mode for efficiency
- C) That users have unrestricted access to hardware resources
- D) That only one application can run at a time on the machine

Answer:

10. Why is Moore's Law important in the context of operating systems?

- A) It predicts improvements in software complexity management.
- B) It refers to the doubling of transistors on chips, enabling more powerful OS functionalities.
- C) It eliminates the need for virtualization techniques in modern OS designs.
- D) It ensures that all processes run at equal priority levels.

Answer: