

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: B

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: C

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: B

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: A

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: B

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: B

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: D

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: B

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: A

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: B