

Q

Terminology

What is an Operating System?

Q

History

Why did Operating Systems emerge?



History

Which of the following statements is false?

- a) Operating Systems evolution required Hardware changes**
- b) Hardware evolution required Operating Systems changes**
- c) Hardware and OS evolved independently**
- d) There was strong influence in both directions**

Q

History

Describe three critical early inventions in Operating Systems.

Q

History

What is UNIX?

Q

History

What is POSIX?

Q

History

Discuss whether POSIX is still relevant today.

Q

Terminology

**Describe the relation between the terms
Process, Program, Thread and File.**

Q

Terminology

What is a shell?



Processes and Threads

**Describe briefly what happens when you type
'ls' into a UNIX shell and press enter.**

**What would have happened if you had typed
'cd' instead?**

Q

Processes and Threads

In Pseudo-Code, write a program that executes 'ls' in a child process, and waits in the parent process for the termination of the child process.

Which system calls would you use?

Q

Concepts

Briefly describe five tasks of an Operating System.

Q

Concepts

Briefly describe three design goals of an Operating System.



Concepts

Discuss the reasoning behind the separation of User- and Kernel Mode. Identify advantages and disadvantages.

Q

Concepts

What is an Interrupt?



Concepts

What can cause an Interrupt?

Q

Concepts

Describe how the Operating System handles incoming Interrupts.

Q

Concepts

What is the purpose of a System Call?

Q

Concepts

Describe what happens when at runtime when a program uses the function 'getpid'.



Concepts

What are Windows “Personalities”?

- a) Independent operating modes of the CPU**
- b) Distinguished Engineers at the Microsoft Campus in Redmond**
- c) Separate classes of applications, and their corresponding subsystems**
- d) Groups of Users in the System with different Privileges**

Q

Concepts

Describe the anatomy of a Windows Subsystem.

Q

Concepts

**Compare the three types of
Subsystem Service Calls.**

Name an example for each.

Q

Structure

Name three Operating System components usually located in User- and Kernel Mode (three each).

Discuss the reasoning for the placement.

Q

Structure

**What is the role of a System Thread in Windows?
Name two examples.**

Q

Structure

What is a Service / Daemon?



Concepts

Compare the concepts “Microkernel” and “Monolithic Kernel”.

**Which one would you use to describe Windows?
Linux?**



Concepts

**The Windows Kernel is Object Oriented.
What is a Handle, and what is its role?**

Q

Concepts

Can you share handles between separate Processes?

Q

Concepts

Describe four types of Windows Kernel Objects.

Q

Concepts

What is the Basic Input/Output System (BIOS)?

Q

What?

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