

8 Lecture - CS401

Important Subjective

1. What is an interrupt handler?

Answer: An interrupt handler is a function or routine that is executed in response to an interrupt. It is responsible for handling the event that caused the interrupt and returning control to the interrupted program.

What is the purpose of an interrupt request (IRQ) line?

Answer: The IRQ line is used to signal the CPU that an interrupt has occurred and needs to be processed. The CPU then interrupts the current program and jumps to the corresponding interrupt handler.

What is a hardware interrupt?

Answer: A hardware interrupt is an interrupt that is triggered by an external device, such as a keyboard, mouse, or timer. It is handled by the operating system or device driver.

What is a software interrupt?

Answer: A software interrupt is an interrupt that is triggered by a software instruction, such as a system call or software interrupt instruction. It is used to request a service from the operating system or to perform a software task.

What is the difference between a maskable and non-maskable interrupt?

Answer: A maskable interrupt can be disabled by software, while a non-maskable interrupt cannot. Non-maskable interrupts are typically used for critical events that cannot be ignored, such as power failures or hardware errors.

What is interrupt latency?

Answer: Interrupt latency is the time it takes for the system to respond to an interrupt request and begin executing the corresponding interrupt handler. It can affect the responsiveness of the system and must be minimized for time-critical operations.

What is a vectored interrupt?

Answer: A vectored interrupt is an interrupt that has a specific address assigned to it. When the interrupt occurs, the CPU jumps directly to the corresponding interrupt handler, rather than searching for it in a table.

What is interrupt masking?

Answer: Interrupt masking is the process of disabling or enabling interrupts. This can be done by setting a flag in the CPU's interrupt mask register, which controls whether interrupts can be processed or not.

What is a priority interrupt?

Answer: A priority interrupt is an interrupt that is assigned a priority level, based on its importance or urgency. When multiple interrupts occur simultaneously, the CPU will handle the highest-priority interrupt first.

What is interrupt chaining?

Answer: Interrupt chaining is a technique used to handle multiple interrupts of the same type, such as multiple timer interrupts. When an interrupt occurs, the corresponding interrupt handler may chain to another handler to process additional interrupts of the same type.