

17 Lecture - CS501

Important Subjective

1. **What is a machine reset and why is it necessary?**

Answer: Machine reset is the process of restoring a computer system to its initial state. It is necessary to ensure that the system is in a known state and to address any issues that may have caused the system to become unstable.

What are machine exceptions and how are they handled?

Answer: Machine exceptions are unexpected events that occur during the operation of a computer system. They are handled by the control unit, which generates an exception handler routine to handle the exception and prevent the system from crashing.

How does a machine reset differ from a software reset?

Answer: A machine reset involves resetting all components of the system, including the hardware, while a software reset only involves resetting the software components of the system.

What are some common machine exceptions?

Answer: Common machine exceptions include divide-by-zero errors, invalid memory access, and illegal instruction.

How can machine exceptions be prevented?

Answer: Machine exceptions can be prevented by using error correction codes and implementing proper exception handling routines.

What is the role of the control unit in a machine reset?

Answer: The control unit is responsible for resetting all components of the system during a machine reset.

What is the difference between a hard reset and a soft reset?

Answer: A hard reset involves physically resetting the system by turning it off and on again, while a soft reset involves resetting the system through software commands.

Why is it important to handle machine exceptions properly?

Answer: It is important to handle machine exceptions properly to prevent the system from crashing and potentially losing valuable data.

Can machine exceptions be caused by software errors?

Answer: Yes, machine exceptions can be caused by software errors, such as invalid memory access or illegal instructions.

How can machine reset be used to troubleshoot hardware issues?

Answer: Machine reset can be used to troubleshoot hardware issues by restoring the system to a known state and identifying any issues that may have caused the system to become unstable.