

11 Lecture - CS501

Important Subjective

1. **What is the basic principle behind the CISC architecture?**

Answer: CISC processors have a large and complex set of instructions, which can perform multiple operations in a single instruction.

What is the main advantage of the RISC architecture over the CISC architecture?

Answer: RISC processors have a simpler and more streamlined instruction set, which makes them faster and more efficient than CISC processors.

How does the complexity of the instruction set affect the power consumption of a processor?

Answer: A more complex instruction set generally requires more power to execute, which is why CISC processors tend to have higher power consumption than RISC processors.

What are some of the common applications for CISC processors?

Answer: CISC processors are often used in applications that require complex calculations and data manipulation, such as multimedia and gaming.

How do RISC processors handle complex instructions that are not part of their instruction set?

Answer: RISC processors can use software-based techniques such as microcode or emulation to handle complex instructions that are not part of their instruction set.

What are some of the common applications for RISC processors?

Answer: RISC processors are often used in embedded systems and mobile devices due to their lower power consumption and faster processing speeds.

How does pipelining work in a RISC processor?

Answer: Pipelining is a technique that allows a RISC processor to execute multiple instructions simultaneously by breaking down the instruction execution process into several stages.

What is the role of the instruction decoder in a CISC processor?

Answer: The instruction decoder in a CISC processor is responsible for translating complex instructions into a series of simpler micro-instructions that can be executed by the processor.

How does the size of the instruction cache affect the performance of a RISC processor?

Answer: A larger instruction cache can improve the performance of a RISC processor by reducing the number of instruction fetches from memory.

What are some of the common trade-offs between CISC and RISC architectures?

Answer: CISC processors tend to be more versatile and better suited for complex applications, but they also tend to have higher power consumption and slower processing speeds than RISC processors. RISC processors, on the other hand, are more specialized and better suited for embedded systems and mobile devices, but they may struggle with more complex applications.