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Before attending your scheduled classes, you should read your assigned chapter for that day

Prepare questions that you have problems with

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Chapter 1 Objectives

1. Know the difference between computer organization and computer architecture.
2. Understand units of measure common to computer systems.
3. Appreciate the evolution of computers.
4. Understand the computer as a layered system.
5. Be able to explain the von Neumann architecture and the function of basic computer components.

Chapter 2 Objectives

1. Understand the fundamentals of numerical data representation and manipulation in digital computers.
2. Master the skill of converting between various radix systems.
3. Understand how errors can occur in computations because of overflow and truncation.

Chapter 3 Objectives

1. Understand the relationship between Boolean logic and digital computer circuits.
2. Learn how to design simple logic circuits.
3. Understand how digital circuits work together to form complex computer systems.
4. Simplification of Boolean functions leads to simpler (and usually faster) digital circuits.
5. Simplifying Boolean functions using identities is time-consuming and error-prone.
6. This special section presents an easy, systematic method for reducing Boolean expressions.

Chapter 4 Objectives

1. Covers basic memory concepts, such as RAM and the various memory devices,
2. Addresses the more advanced concepts of the memory hierarchy, including cache memory and virtual memory.
3. Thorough presentation of direct mapping, associative mapping, and set-associative mapping techniques for cache.
4. It also provides a detailed look at overlays, paging and segmentation, TLBs, and the various algorithms and devices associated with each.

Chapter 5 Objectives

1. Understand the factors involved in instruction set architecture design.
2. Gain familiarity with memory addressing modes.
3. Understand the concepts of instruction-level pipelining and its affect upon execution performance.

Chapter 6 Objectives

1. Master the concepts of hierarchical memory organization.
2. Understand how each level of memory contributes to system performance, and how the performance is measured.
3. Master the concepts behind cache memory, virtual memory, memory segmentation, paging and address translation.

Chapter 7 Objectives

1. Understand how I/O systems work, including I/O methods and architectures.
2. Become familiar with storage media, and the differences in their respective formats.
3. Understand how RAID improves disk performance and reliability, and which RAID systems are most useful today.
4. Be familiar with emerging data storage technologies and the barriers that remain to be overcome.
5. Understand the essential ideas underlying data compression.
6. Become familiar with the different types of compression algorithm.
7. Be able to describe the most popular data compression algorithms in use today and know the applications for which each is suitable.

Chapter 8 Objectives

1. Become familiar with the functions provided by operating systems, programming tools, and database software and transaction managers.
2. Understand the role played by each software component in maintaining the integrity of a computer system and its data.

Chapter 9 Objectives

1. Learn the properties that often distinguish RISC from CISC architectures.
2. Understand how multiprocessor architectures are classified.
3. Appreciate the factors that create complexity in multiprocessor systems.
4. Become familiar with the ways in which some architectures transcend the traditional von Neumann paradigm.

Chapter 10 Objectives

1. Understand the ways in which embedded systems differ from general purpose systems.
2. Be able to describe the processes and practices of embedded hardware design.
3. Understand key concepts and tools for embedded software development.