Overview

Design is a critical intermediate step between a statement of requirements and the construction of a solution.

It produces a description of the solution – not the solution itself. This description is sufficiently complete and accurate to assure that the solution can be constructed.

Design models allow the behavior of proposed solutions to be evaluated and compared.
Overview (continued)

Designing the overall system structure involves partitioning the system into three major subsystems – the application programs, the user interface, and the data base.

Thereafter, these subsystems may be treated as relatively independent design problems.

Overview (continued)

This partitioning is implemented as a layered architecture, which is considered to be best practice.

The hardware of an information-processing system consists of three generic types of components: channels (which transport information), containers (which store information), and processors (which transform information).

Batch, Interactive, and Real-Time Systems

In a batch system the system inputs are stored at or near the system boundary. They are processed in batches. The storage introduces a time delay.

In an interactive system inputs enter the system one at a time. Time delays are handled internally.

A real-time system responds rapidly enough for its output to affect or control events in its environment.
The Three-Tier Layered System Architecture

FIGURE 7.5

Presentation Layer

Application Layer

Storage Layer

Learning Objectives

• Describe how analysts and designers view system requirements from different perspectives.
• Explain why analysts and designers view the boundary between analysis and design differently than managers do.
• State some goals of information system design.

Learning Objectives (continued)

• Distinguish among batch, online, interactive, and real-time systems.
• Name and state the purpose of each of the layers of a three-tier system architecture.