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CS391

01

Introduction to Systems Analysis and Design

Lecture 1 • Part 1

SYSTEMS ANALYSIS & DESIGN

Systems • Information Technology • Information Systems

02

Introduction

Why information matters

Companies use information as a weapon in the battle to:

increase productivity • deliver quality products and services • maintain customer loyalty • make sound decisions

Information technology can mean the difference between success and failure.

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03

What Is Information Technology?

The IT journey continues

Information Technology (IT)

Combination of hardware and software products and services that companies use to manage, access, communicate, and share information.

Welcome to the 21st Century: The IT Journey Continues

- **Changes in the world**
- **Changes in technology**
- **Changes in client demand**

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04

What Is Information Technology?

Systems analysis, information systems, and the systems analyst

SYSTEMS ANALYSIS & DESIGN

Step-by-step process for developing high-quality information systems (software).

Information System

Combines technology, people, and data to provide support for business functions such as medical care.

WHAT DOES A SYSTEMS ANALYST DO?

- Plan, develop, and maintain information systems (Software Engineer)
- Manage IT projects: tasks, resources, schedules, and costs
- Conduct meetings, deliver presentations, and write memos, reports, and documentation

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05

Information System Components

What is a system?

A system is a set of related components that produces specific results.

Mission-critical systems are vital to a company's operations. Example: an order-processing system is critical because a company cannot do business without it.

Every system requires input data.



Data = basic facts / raw material

Information = data transformed into output valuable to the user.

5 KEY COMPONENTS

- Hardware
- Software
- Data
- Processes
- People

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06

Information System Components

Hardware and software

HARDWARE

The physical layer of the information system.

- **Server**
- **Mobile device**
- **Fiber optic cable**

Moore's Law: the number of transistors on integrated circuits doubles approximately every two years.

SOFTWARE

Programs that control hardware and produce desired information or results.

- **System software** Manages hardware • e.g. OS
- **Application software** Supports business/user requirements

Horizontal → adaptable to many areas
Vertical → unique to a specific field
Legacy → older systems that require interaction with new ones

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07

Information System Components

Data, processes, and people

DATA

Raw material that an IS transforms into useful information.

PROCESSES

Tasks and business functions users, managers, and IT staff perform to achieve specific results.

PEOPLE

Stakeholders are people who have an interest in an IS, including users/end users.

IS stores data in tables; linked tables work together to supply data and information. People include programmers, developers, and other end users.

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