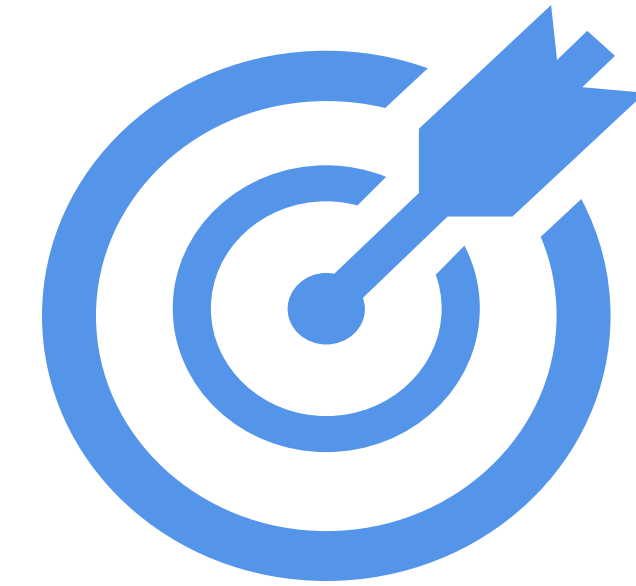# INFORMATION SYSTEMS

Bachelor of Information Systems
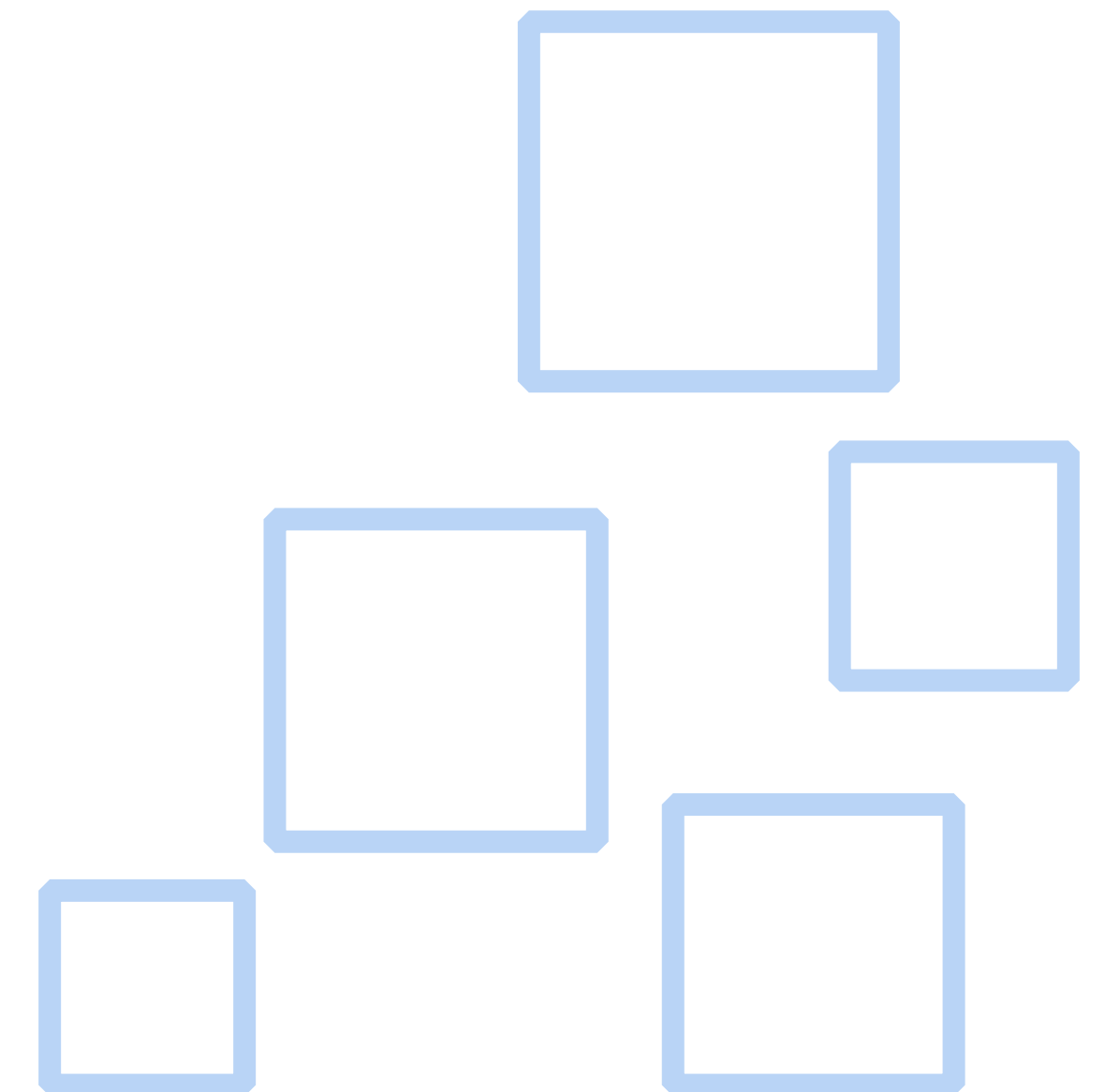
INTRODUCTION TO
**DATABASE AND INFORMATION SYSTEM**

# Learning Objective(s)

This material should address the following question(s).

**?** What is the information system?

**?** What is the importance of studying information systems?

**?** What are the components of an information system?

**?** What are the activities in an information system?

# Question

?

What is the **information system**?

# Data

- Data is a collection of values (in the form of numbers and/or text) that are obtained, recorded, stored and classified, but not organized to convey a particular meaning, or facts/figures in raw form.

- Data can come in the form of text, observations, figures, images, numbers, graphs, or symbols.

- For example,
  - A B A C C D D B B C C B B A

# Information

- Information is a collection of data organized to convey meaning or raw facts that are processed to make them more useful and/or understandable to humans.

- For example,

| Grade | Number of Students |
|-------|--------------------|
| A | 3 |
| B | 5 |
| C | 4 |
| D | 2 |

# Information System

- IS can be an organized combination of **people**, **hardware**, **software**, **communications networks**, **data resources**, and **policies and procedures** that store, retrieve, change, and disseminate information within an organization.

# Question

?

What is the **importance** of studying information systems?

# Why Study IS

- You become an informed user.
- Career opportunities.
- Know how to manage information resources.

# Question

**?**

What are the **components** of an information system?

# IS Components

1. Hardware
2. Software
3. Network
4. Data
5. Human Resources

# Hardware

- Includes all physical devices and materials used in information processing.
- Not only machines, such as computers and other equipment, but also all data media, namely tangible objects such as sheets of paper and magnetic discs or optical discs.



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# Software

- Includes all sets of information processing instructions.
- This generic concept of software includes not only sets of operating instructions called programs, which direct and control computer hardware, but also sets of information processing instructions called procedures that people need.

- Example:
  - System software
  - Application software Procedure

# Network

- Communication media
  - Examples include twisted-pair cable, coaxial and fiber optic cable, cellular, and wireless satellite technology.

- Network infrastructure
  - Examples include communications processors, such as modem and internetwork processors, and communications control software, such as network operating systems and Internet browser packages.

# Data

- Data can take many forms, including:
  - traditional alphanumeric data, consisting of numbers, letters, and other characters that describe business transactions and other events and entities;
  - text data, which consists of sentences and paragraphs used in written communication;

- image data, such as graphic shapes and images or photography;
- video data; and
- audio data, including human voices and other sounds.

# Human Resource

- The people involved in information systems are needed to run the system.

- From the front-line user support staff, to systems analysts, to developers, all the way up to the chief information officer (CIO).
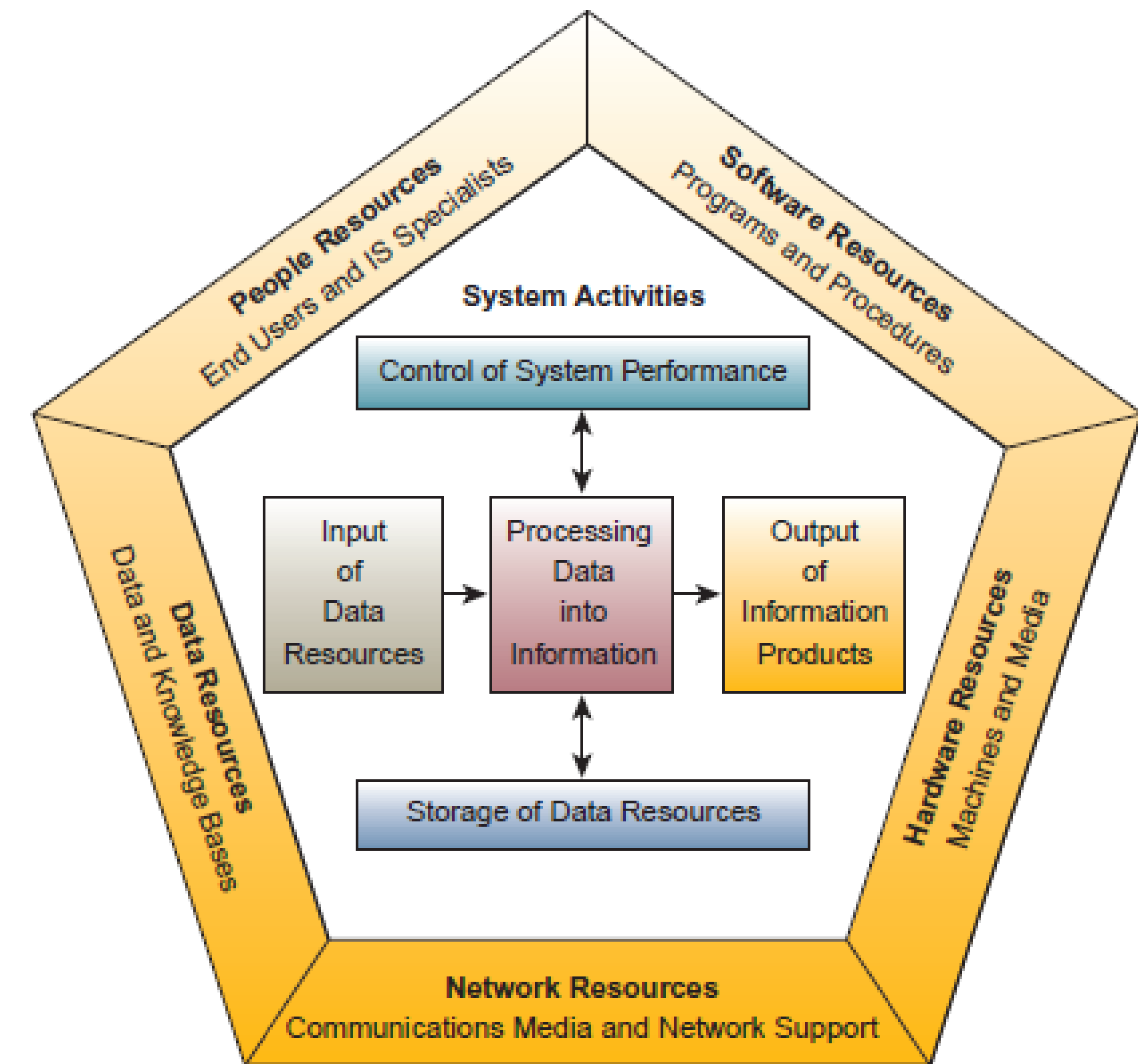
# Question

**?**

What are the **activities** in an information system?

# Information System Activities

- Three activities in an information system produce the information that organizations need to make decisions, control operations, analyze problems, and create new products or services. These activities are input, processing, and output.



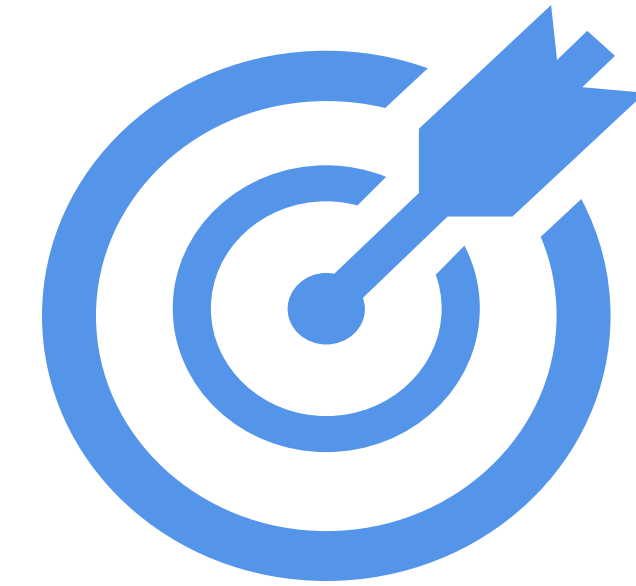| Information System Activities |
|---|
| • **Input.** Optical scanning of bar-coded tags on merchandise. |
| • **Processing.** Calculating employee pay, taxes, and other payroll deductions. |
| • **Output.** Producing reports and displays about sales performance. |
| • **Storage.** Maintaining records on customers, employees, and products. |
| • **Control.** Generating audible signals to indicate proper entry of sales data. |

# Conclusion
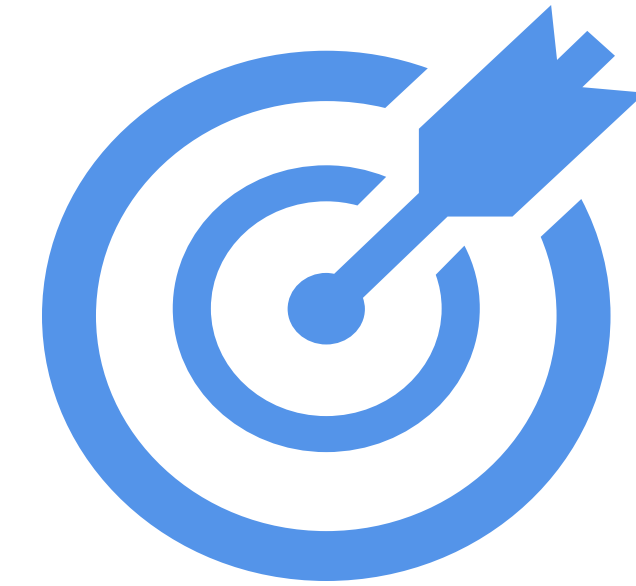
✅ An IS can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization

✅ Study IS is makes you an informed user, expand career opportunities, and know how to manage information resources.

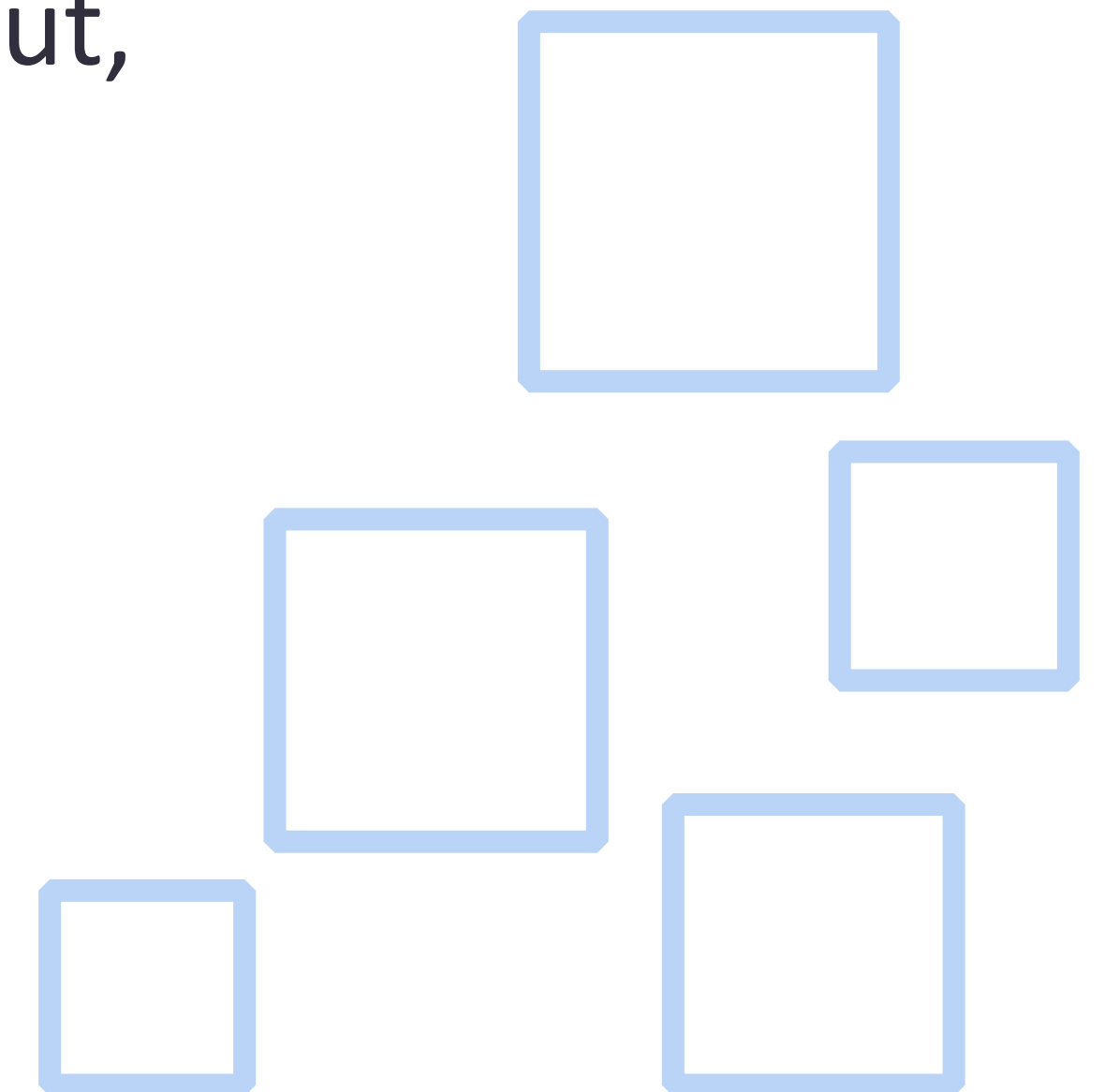✅ Five IS components are hardware, software, network, data, and human resources

# Conclusion

✓ Three activities in an information system produce the information that organizations need to make decisions, control operations, analyze problems, and create new products or services. These activities are input, processing, and output.

# References

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- A. Silberschatz, et. al., Database System Concepts.
- R. K. Rainer, et. al., Introduction to Information Systems.
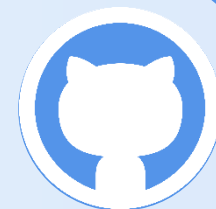- G. M. Marakas et. al., Introduction to Information Systems: Essentials for The e-Business Enterprise.

INTRODUCTION TO
**DATABASE AND INFORMATION SYSTEM**

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