

# **IE 5521**

## **Electronic Data Processing Systems**

**COL. Wiwat Ruengmee**

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# Definition of Data, Information and Data Processing

- **Data** are any facts, numbers, or text that can be processed by a computer.
- **Example:**
  - Operational or transactional data such as, sales, cost, inventory, payroll, and accounting
  - Non-operational data, such as industry sales, forecast data, and macro economic data
  - Meta data - data about the data itself, such as logical database design or data dictionary definitions

# Definition of Data, Information and Data Processing

- **Information.** The patterns, associations, or relationships among all this data can provide information.
- **Example:**
  - Analysis of retail point of sale transaction data can yield information on which products
  - Today computers convert data about land and water into recommendations to farmers on crop planting.

# Definition of Data, Information and Data Processing

- **Data Processing.** A series of actions or operations that converts data into useful information.
- Data processing (numerical and non-numerical) includes the analysis of various, sorting, calculating, editing, processing and handling data.
- **Example:** Warehouse management, accounting management, transportation management, IT management, office automation, geographical data require comprehensive data processing.
- We use the term **data processing system** to include the resources that are used to accomplish the processing of data.



# Electronic Data Processing (EDP)

Can refer to the use of **automated methods to process commercial data**. Typically, this uses relatively simple, repetitive activities to process large volumes of similar information. For example: stock updates applied to an inventory, banking transactions applied to account and customer master files, booking and ticketing transactions to an airline's reservation system, billing for utility services. The modifier "electronic" or "automatic" was used with "database processing" (DP), especially c. 1960, to distinguish human clerical data processing from that done by computer.

# Electronic Data Processing (EDP)

Electronic data processing is also known as EDP, a frequently used term for automatic information processing. It uses the computers to collect, manipulate, record, classification and to summarize data. If someone asks what is electronic data processing, then EDP meaning can be described as the processing of data using electronic means such as computers, calculators, servers and other similar electronic equipment. A computer is the best example of an EDP system. Use of a data processing system ensures accurate and rapid data processing. Electronic processing is the fastest way to obtain processed data.

# Advantages of EDP

- Cost of managing data is reduced. It aids decision making and data storage.
- Processing of data reduces paperwork and helps in reducing cost as the management of documents is costly.
- Helps in document management, enables use of integrated process and integrated system.
- Ability to search in a document saves time. In addition to this, it improves the internal and external collaboration.
- The famous software product such as Ms. Office is using the electronic data processing concept. The EDP has the facility to reduce the duplication of effort, repeated entries and make decisions.
- Provides effective control, increases data security, manages information assets and creates effective workflows.



# Disadvantages of EDP

- Electronic form of data is susceptible to hacking attempts. Increased cases of cyber crimes makes it important and essential to think about data security and access control. If the various devices of an information system are connected in a network, then any flaw or loophole in single part of the system might affect the whole network.
- You might be required to keep data in encrypted form. This is particularly important when dealing with sensitive data and storing it in data centres since the data is transmitted over a network.



# Examples of EDP

- Telecom companies format bills and calculate the usage-based charges.
- In schools, they use EDP to maintain student records.
- In supermarkets, used for recording whereas hospitals use it to monitor the progress of patients.
- Hotel reservations.
- Banks to monitor the transactions.
- The electronic data processing can also be used as video and audio equipment.
- It can be used as a barcode scanner.
- It enables larger organizations to collect the information and process the data.



# Elements of an Data Processing (Information System)

**Hardware**

**Software**

**Data**

**People**

**Procedures**



# Elements of an Data Processing (Information System)

## How the Elements of an Information System in an Enterprise Might Interact

### Step 1

IT staff (people) develop processes (procedures) for recording checks (data) received from customers.



### Step 2

Employees (people) in the accounts receivable department use a program (software) to enter the checks (data) in the computer.



### Step 3

The computer (hardware) performs calculations required to process the accounts receivable data and stores the results on storage media such as a hard disk (hardware).



### Step 4

Customer statements, the information, print on a corporate printer (hardware).



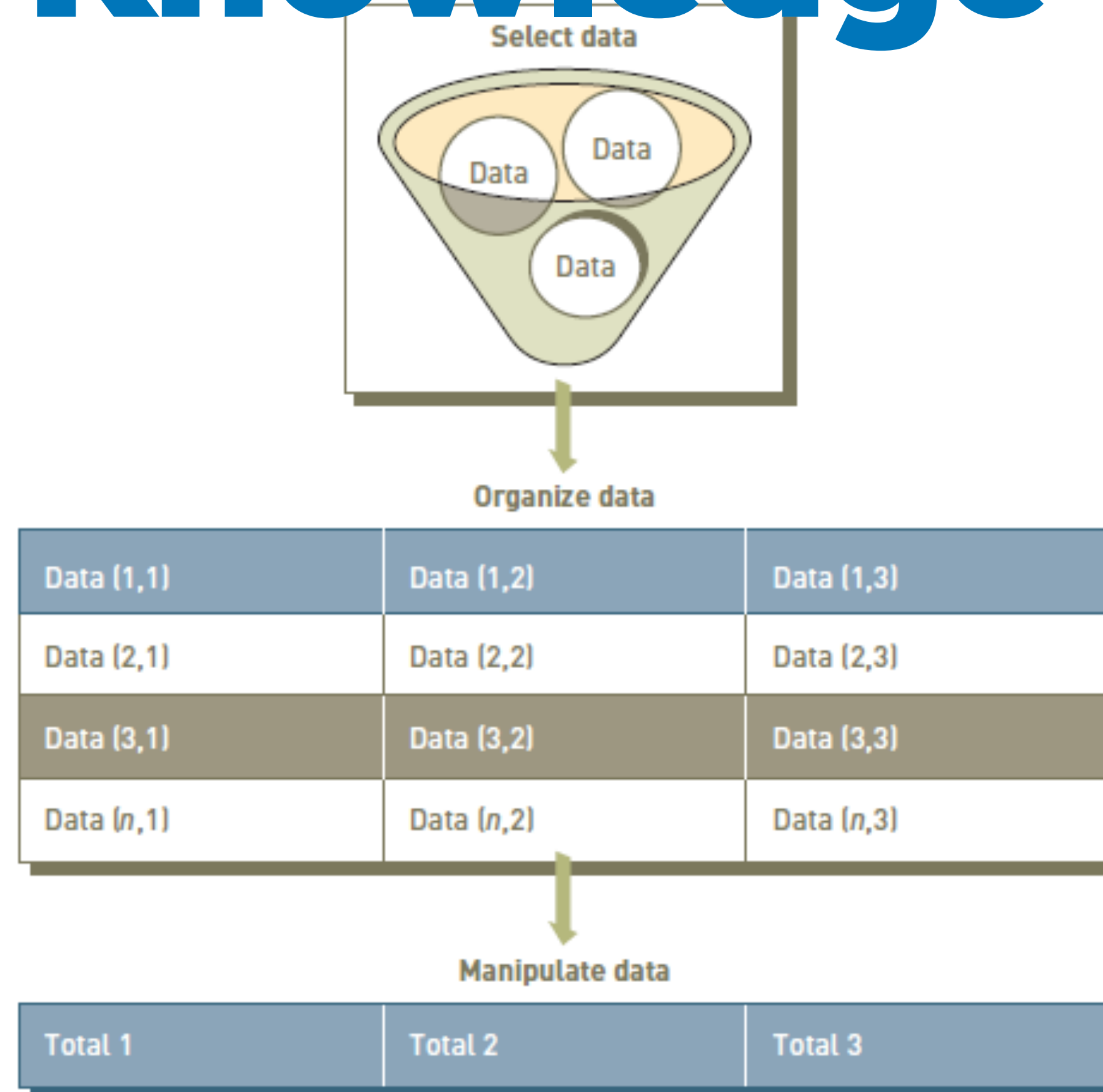


# Data, Information, and Knowledge

Data	Represented By
Alphanumeric data	Numbers, letters, and other characters
Audio data	Sounds, noises, or tones
Image data	Graphic images and pictures
Video data	Moving images or pictures



# Data, Information, and Knowledge



Process of transforming data into information