

1. DATA

- Two ways to view data

- Physical view
- Logical view

- Two ways to process data

- **Batch Processing** (data is collected over time and then processed later all at one time)
- **Real-time processing online processing** (data is processed at the same time the transaction occurs; direct access storage devices make real-time processing possible)

2. DATA ORGANIZATION

Data organized by

- Character
- Field
- Record
- Table
- Database
- **Key Field** (primary key) is the field in a record that uniquely identifies each record.

3. DATABASE

- Type of databases

- Individual
- Company or shared
- Distributed
- Commercial

- Need for databases

- Sharing data,
- Improved security
- Reduced data redundancy
- Higher data integrity

- Database management system (DBMS)

- Software for creating, modifying and gaining access to the database
- Consists of five subsystems:
 - DBMS engine
 - Data definition subsystem
 - Data manipulation subsystem
 - Application generation subsystem
 - Data administration subsystem

CHAPTER 11 DATABASE

4. DBMS STRUCTURE

- DBMS programs are designed to work with specific data structures or database models.
- Common database model:
 - Hierarchical database
 - Network database
 - Relational database
 - Multidimensional database
 - Object-oriented database

5. DATABASE USES AND ISSUES

- Strategic Uses

- Data warehouses support data mining (a technique for searching and exploring databases for related information and patterns)
- **Security**
 - Security concerns illegal use of data, unauthorized access
 - Use firewalls to protect internal network