Chapter 11: Database

- Database
  - Collection of integrated data
  - Database address
    - data redundancy
    - data integrity
  - Advantages
    - Sharing
    - Security
    - Less data redundancy
    - Data integrity
  - Database management/ DBMS
    - DBMS engine
    - Data definition subsystem
      - Data dictionary / schema
    - Data manipulation subsystem
      - Query-by-example
      - Structured query language (SQL)
    - Application generation subsystem
    - Data administration subsystem
      - Database Administrators (DBAs)
      - Processing rights
- Describe the five common database models
  - DBMS Structure/ database model
    - DBMS programs work with data that is logically structured or arranged
    - Model defined rules and standards for data in a database
  - 5 common types of database model
    - hierarchical
    - network
    - relational
    - multidimensional
    - object-oriented
- Distinguish among individual, company, distributed, and commercialdatabases
  - Types of database
    - Individual
    - Compaby or shared
    - Distributed
    - Commercial
- Discuss strategic database usesand security concerns.
  - strategic uses
    - Special type of database called data warehouse
    - Data mining is used to search databases for information and patterns
  - example
    - business directories
    - demographic data
    - business statistical information
    - text database
    - web database
  - security
    - Databases are valuable
    - Protection necessary
  - concern
    - oersonal and private information stored in database are used for wrong purposes
      - person's credit history
      - medical records
    - unauthorized users gaining access to a database
      - virus launched into a database or network.
- Careers in IT
  - Database administrators
    - use database management software to determine the most efficient ways to organize and access a company's data
    - Responsible for database securityand backing up the system
- A look to future
  - Advantages
    - Massive amounts of digital storage are now available and affordable
    - Google Book Search contains millions of book
  - Disadvantages
    - Crime Databases
- Distinguish between physical and logical data
  - physical view
    - focuses on the actual format and location of the data
    - data representation
  - logical view
    - focuses on the meaning, content, and context of the data
- Describe how data is organized
  - character
  - field
  - record
  - table
  - database
- Define key fields and how they are used to integrate data in database
  - key field
    - Unique identifier also known as primary key
    - key field is an employee identification number.
    - Data from the two tables could be related by combining all records with the same key field
    - example: social security number
- Define and compare batch processing and real-time processing
  - Batch processing
    - Data is collected over a period of time and the processing happens later all at one time
    - Example: credit card
  - Real-Time processing
    - Also known as online processing because it happens immediately during the transaction
    - Example: ATM machine