

# CPSC 5021: Database Systems

Introduction

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# What is a Database?

- Database is a collection of data.



Name	Things	Total
Lin	iPhone	1
Lin	iPad	1
Lin	Pen	3
Lin	Pencil	2

# What is a Database?

- Database is the backend of almost any business these days



Name	Type	Total
Apple	Fruit	5
Banana	Fruit	12
Green Pepper	Vegetable	10
Eggplant	Vegetable	18

# Why Database?

- How many of you have bought anything using a credit card during the past day, week, month, or year?
- How many have shipped a document or a package via an overnight service or via certified or registered mail?
- How many have checked course catalogs and class schedule online?
- How often do you use Google, Facebook, Twitter, YouTube?

# Why Database?

- Tons of data
- Countless transactions
- None of these applications could be possible without a database
- “Live” performances
  - ✓ YouTube (<http://www.youtube.com>)
  - ✓ Facebook (<http://www.facebook.com>)
  - ✓ Amazon (<http://www.amazon.com/>)
  - ✓ National Football League (<http://www.nfl.com/>)

# Why Database?

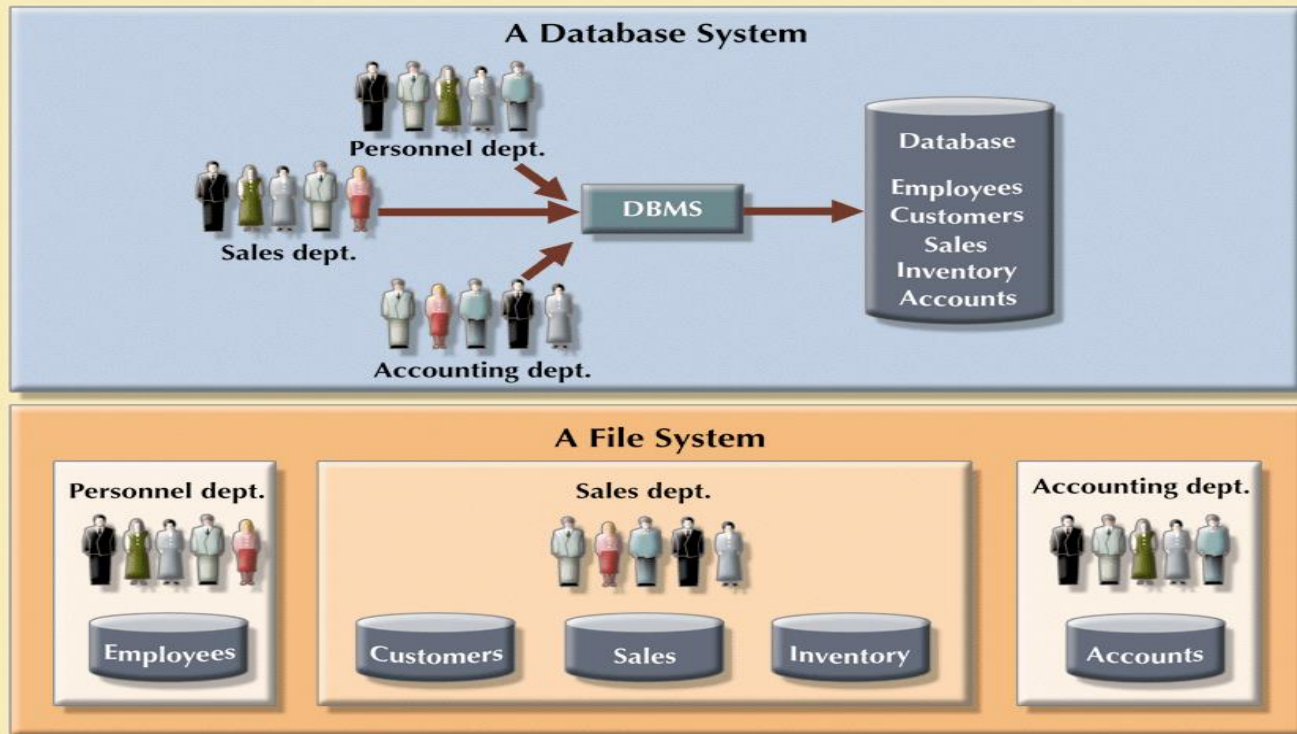
- It is important that database operations are made successfully, accurately and quickly
- Database design is important
- Database administration is important too
- Numerous exciting database employment opportunities



# Why Database?

**FIGURE 1.8**

**Contrasting database and file systems**



SOURCE: Course Technology/Cengage Learning

# What is DBMS?

- DBMS is just one of several crucial components of a database system
- DBMS is a software that allows for storage, manipulation, and querying of data
- Provides a way to allow secure access to data
- Business rules are enforced
- Backup, restore, protection from failure
- Query language, possible API access



# What is DBMS?

- You're likely familiar with many DBMS products.

ORACLE®



SYBASE®

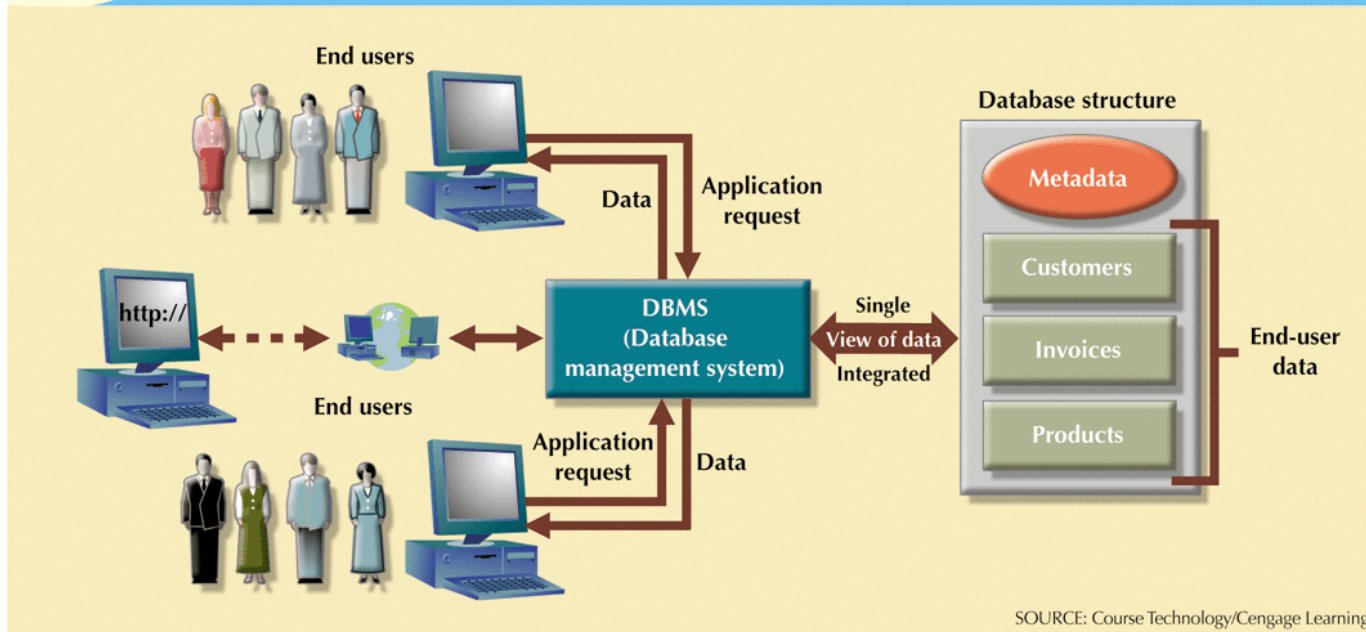


# What is DBMS?

- DBMS is the intermediary between the user and the database

FIGURE 1.2

The DBMS manages the interaction between the end user and the database



# What is DBMS?

