

Database Fundamentals

Objective 5.01: Understand database tables used in business



What is a database?

- ▶ A database is a tool for organizing, storing, retrieving, and communicating groups of information that have similar characteristics

Examples of Databases

- ▶ Telephone book
- ▶ Computerized Library card catalog
- ▶ Student data (NCWISE)
- ▶ iTunes
- ▶ Personal address book
- ▶ CD-Rom Encyclopedias
- ▶ Fingerprint database
- ▶ Encyclopedias
- ▶ Dictionaries
- ▶ Customer contact list
- ▶ Houses for sale
 - MLS listings online
- ▶ Hospital/patient data
- ▶ Business stock inventory
 - Barcode scanner keeps inventory in database.
- ▶ Internet search engines database

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Slide 3

Why do businesses use databases?

- ▶ A database is a tool used by physical and online businesses to manage the huge amount of data required to run the business.
- ▶ For example, a business may use several databases to keep track of employee information, customers, products, and prices of products. All of the information can be easily and efficiently managed and shared by database software.

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Slide 4

What makes a database?

Databases consist of four main objects:

1. **Tables** store data in rows and columns
2. **Queries** retrieve and process data
3. **Forms** control data entry and data views

Customized manner of inputting data into a database or presenting data on a screen

4. **Reports** summarize and print data

*In this objective, our focus is on tables

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Slide 5

Tables: the Building Blocks of all Databases



Product Name	Category	Price
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00
Chai	Beverage	8.00

- Tables organize data
- Each database consists of one or more tables

- ▶ Tables store data, so they're essential building blocks of any database.
- ▶ All databases contain at least one **table**
- ▶ A database should have a separate table for every major subject, such as employee records or customer orders. Data should not be duplicated in multiple tables.
- ▶ Tables contain **Rows** called **Records** and **Columns** called **Fields**.

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Slide 6

Components of a Database Table

- ▶ **Entry** – Data typed into a field. Made up of characters. Example: John Doe is an entry in the name field. Also known as data.
- ▶ **Field** – One item or bit of information in a record; represented by a **COLUMN**. Comprised of entries
- ▶ **Record** – A group of related fields of information. **Everything on one row is a record**

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Slide 7

Database Tables: The Big Picture

1. Records
2. Fields
3. Entry

Movie Title	Year	Release Date	Genre
Green Day	1994	11/20/2004	Rock
Play Station	2000	06/01/2004	Video Game
John Legend	2005	12/01/2004	R&B
Alaska Parks	2004	12/01/2004	Travel
Recess & Outlets	2004	12/01/2004	Children's
...
Green Day Naugle	1994	11/20/2004	Rock
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...

2. Rows – RECORDS

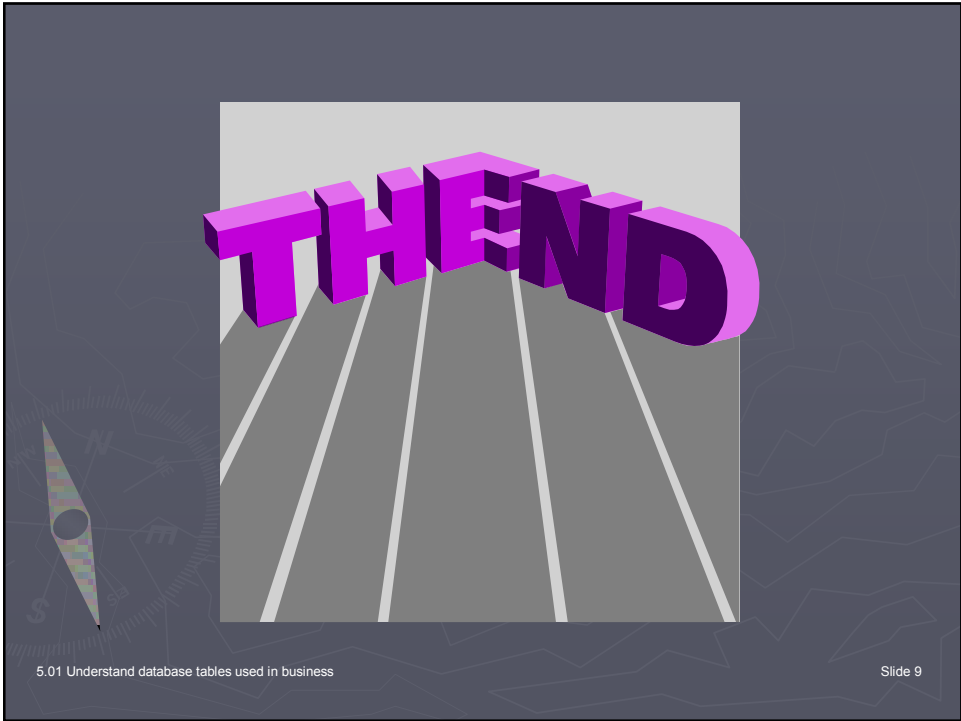
3. Columns - FIELDS

4. Cells - ENTRIES

To calculate the number of **entries** in a database multiply the number of fields by the number of records. Ex. $5 \times 26 = 130$ entries in this database.

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Slide 8



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Slide 9