



Database Design

1-2

Data vs. Information



Objectives

This lesson covers the following objectives:

- Distinguish between data and information, and provide examples of each
- Describe and give an example of how data becomes information

Purpose

- All kinds of information (school records, mobile telephone records, ring tone downloads, grocery purchases) are stored in databases.
- We interact with databases every day, consciously or unconsciously.
- It is important to understand what is stored in a database and what can be retrieved from it.

Data Compared to Information

- If you work in the information-technology industry, it is essential to understand how data is modeled and stored in a database.
- If you work in any other industry, you will most likely have to work with data stored somewhere on a computer and probably be required to use data in your job to create reports and/or make decisions.

Data vs. Information

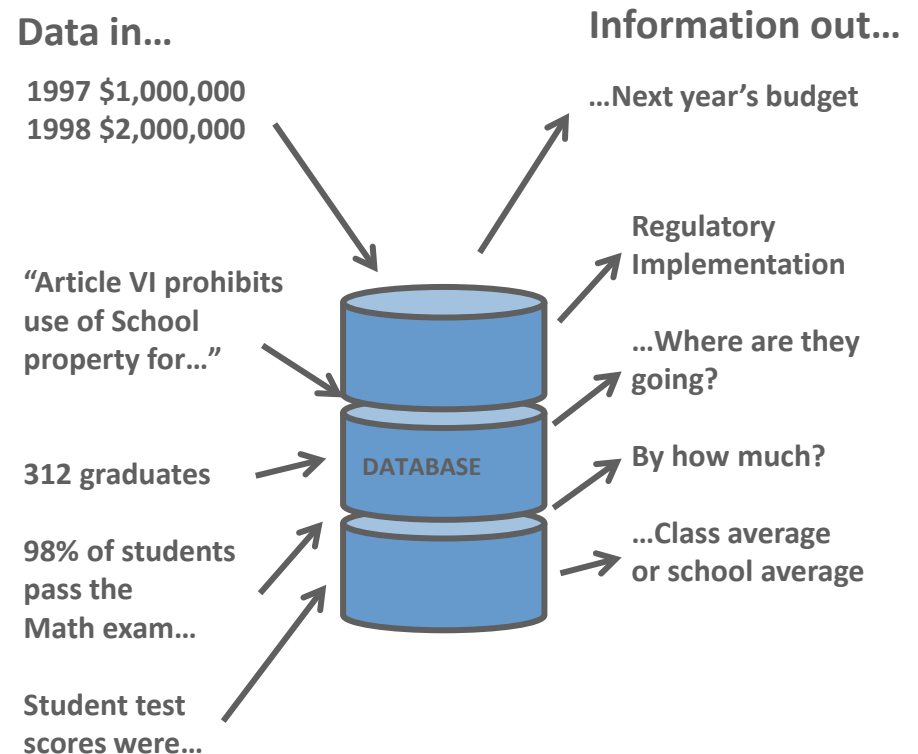
- The words "data" and "information" are often used as if they are synonyms.
- Nevertheless, they have different meanings.
- Data: Raw or unprocessed material
- Information: knowledge, intelligence, a particular piece of data with a special meaning or function.
- Information is often the result of combining, comparing, analyzing or performing calculations on data.

Data vs. Information

- Whenever a student, teacher, administrator (or any person using a computer) interacts with a website, pieces of data are collected.
- The website application may be unique to that school or company, but what happens in the background?

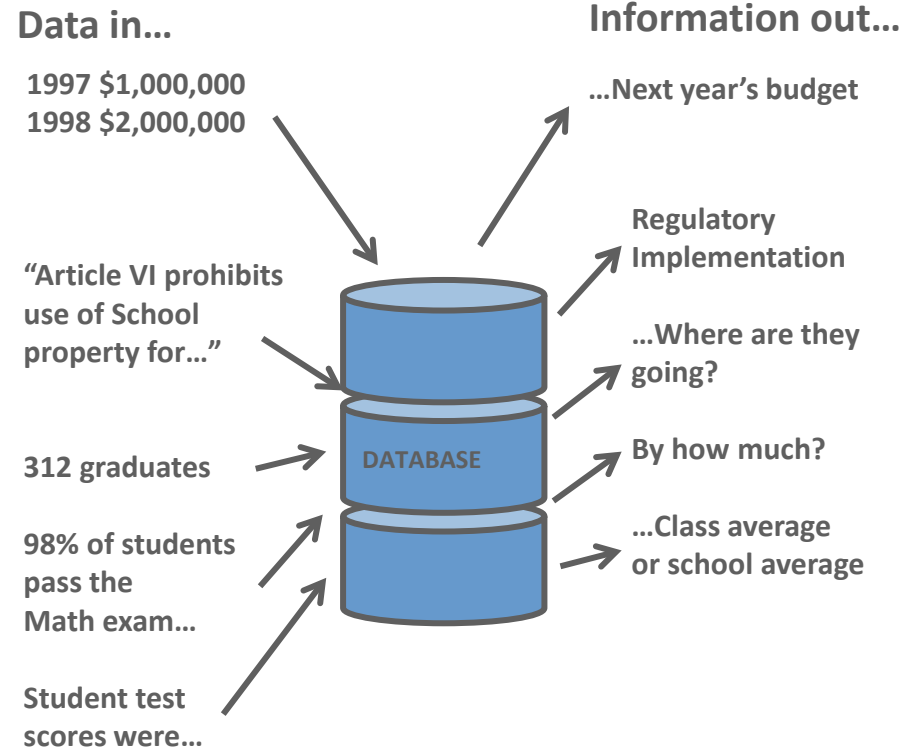
Data vs. Information

- Think about test scores, for example.
- In one class, if every student receives a numbered score, the scores can be calculated to determine a class average.
- The class averages can be calculated to determine the school average.



Data vs. Information

- The Oracle database software will transform recorded/stored data and statistics into useful pieces of information.
- Data: Each student's test score is one piece of data.
- Information: The class's average score or the school's average score.



What is a Database?

- A database is a centralized and structured set of data stored on a computer system.
- It provides facilities for retrieving, adding, modifying, and deleting the data when required.
- It also provides facilities for transforming retrieved data into useful information.
- A database is usually managed by a Database Administrator (DBA).

Documents, Pictures, Video, and Sound

- Within most modern databases, you can store and retrieve a wide variety of data and documents.
- Inside the database, data is stored in its “raw” form.
- When this raw data is queried or retrieved, it is transformed into more useful information.

Different Data/Sources

Operational



Media-rich



External



Decision support



Documents



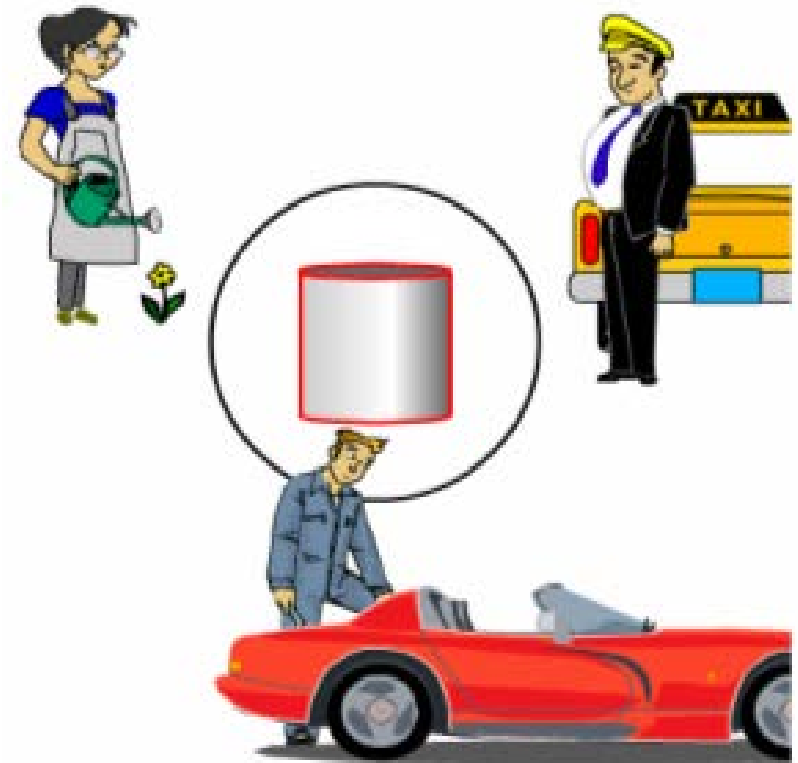
Question: What Does a Database Have to do with My Everyday Life?

- Answer: More than you may realize...
- A lot of websites that you visit are driven by a database.



Question: If You Had One of the Jobs Listed Below, How Might You Use a Database?

- Mechanic in a repair shop
- Taxi driver
- Landscaper



Question: Have You Ever Returned an Item to a Store Without a Receipt?

- What information did you have to provide?
- Were you able to return the item?



Terminology

Key terms used in this lesson included:

- Data
- Database
- Information

Summary

In this lesson, you should have learned how to:

- Distinguish between data and information, and provide examples of each
- Describe and give an example of how data becomes information

