Database Design

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 material from which you can draw conclusions; facts from which you can deduce new facts.

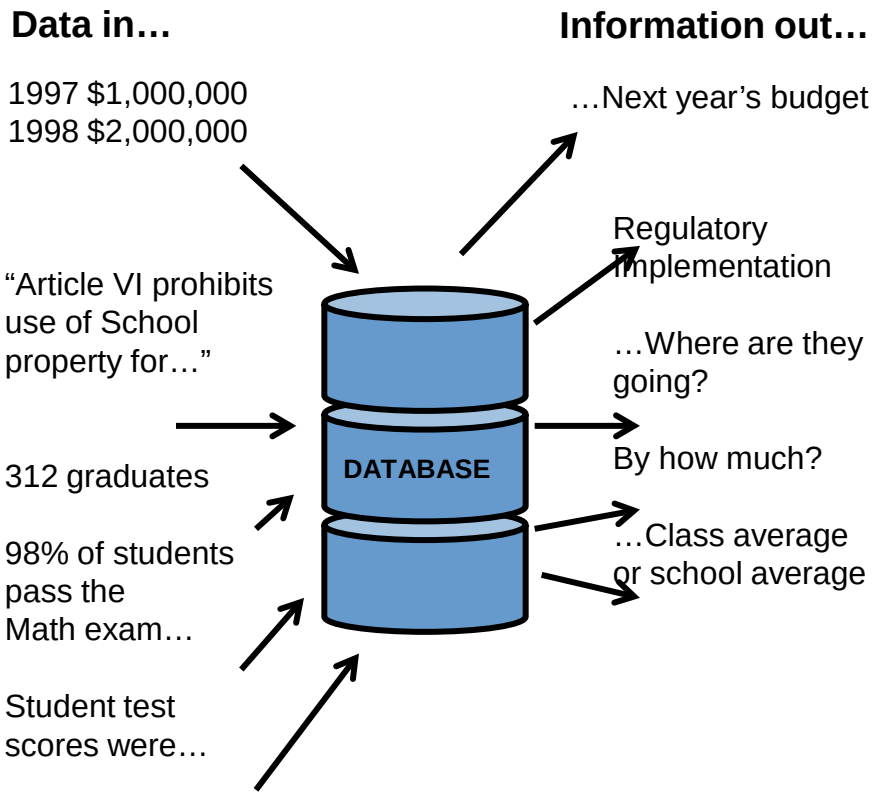
Information: knowledge, intelligence, a particular piece of data with a special meaning or function. Information is often the result of combining, comparing, and performing calculations on data.

Data vs. Information (cont.)

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 (cont.)

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.

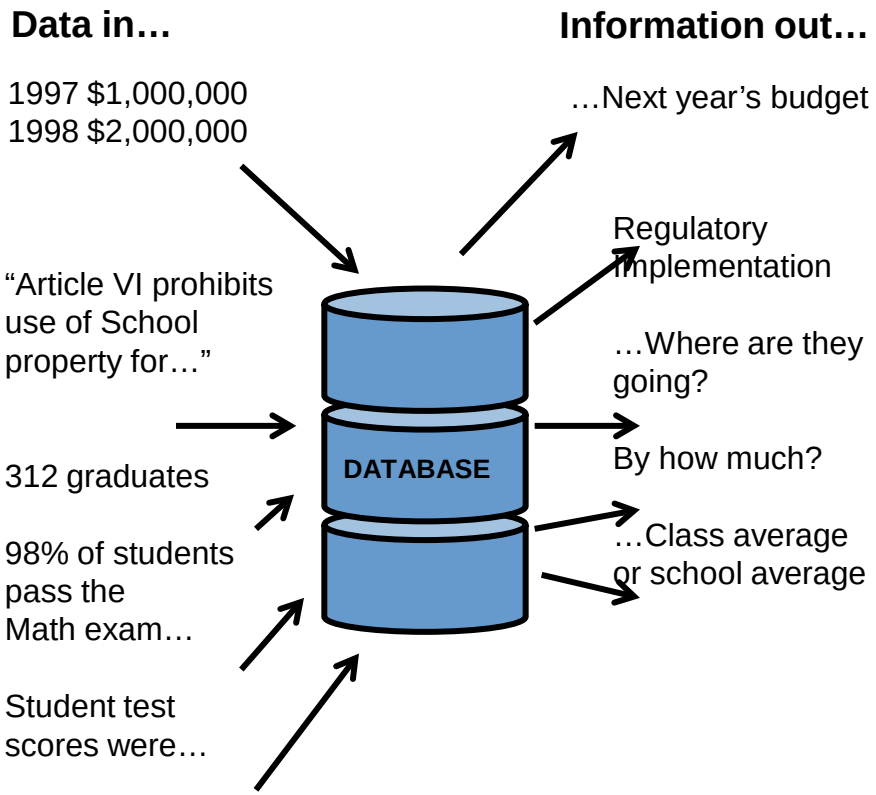


Data vs. Information (cont.)

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' average score or the school's average score.



What is a Database?

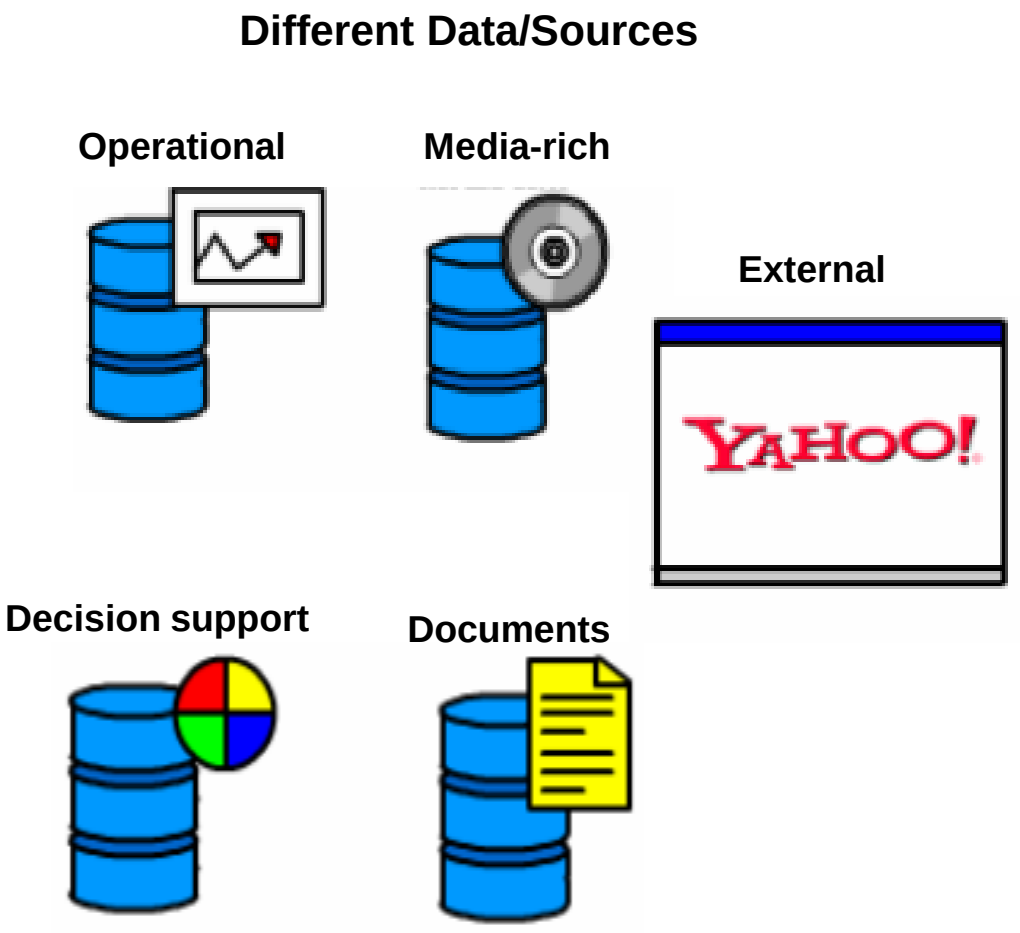
A database is a centralized and structured set of data stored on a computer system.

- 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.



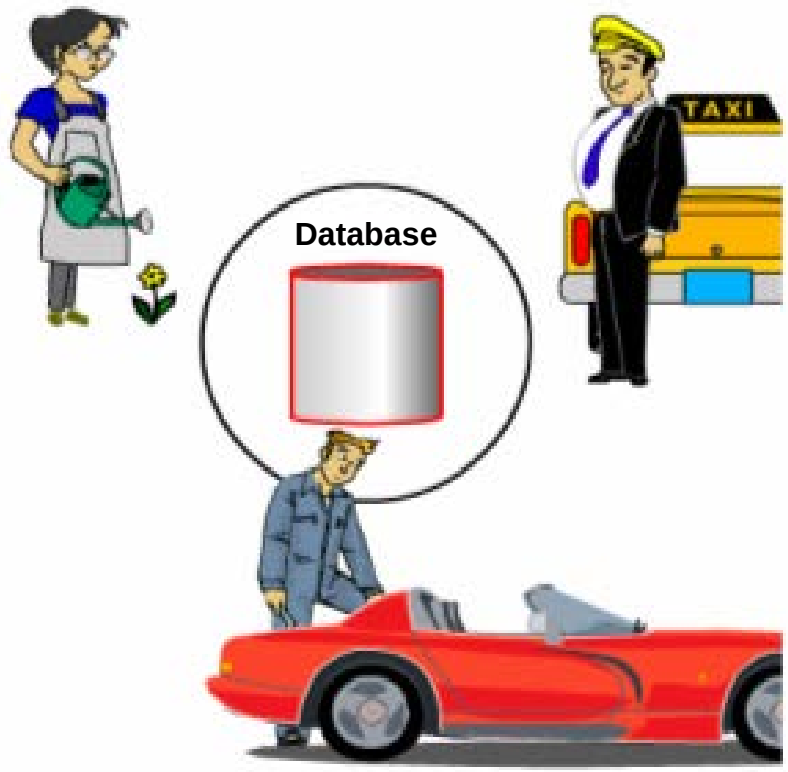
Question: What Does a Database Have to do with My Everyday Life?

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?

1. Mechanic in a repair shop
2. Taxi driver
3. 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