RDBMS BASICS

Tables, rows, databases, oh my!

DATA RELATIONSHIPS

- Why does everyone always talk about data relationships and relational databases? What's all this relationship business?

- Easy! Most information that humans care about is related somehow. One piece of information logically ties to another. Consider:

  - Accounting systems: accounts, transactions, customers

  - Recipes: ingredients, processes, categories

  - Movie collections: Titles, genres, actors, ratings

SO?

- Most requirements to store data can do so by expressing the various entities of information and then expressing the relationships between them. For example:
  - For a given Movie, there will be:
    - A Title
    - One or more Genres
    - One or more Actors
    - etc…

RDBMS'S

- RDBMS's were developed decades ago to manage the underlying storage and organization for all of the information bits and their relationships. Some major examples include:
  - MySQL, Oracle, Postgresql, mSQL, SQLServer
- There is even a special language that was invented to interact with relational databases, known as the Structured Query Language, or SQL. Most RDBMS's implement some form of SQL. Further discussion of SQL to occur in a later lecture.

VOCABULARY TIME!

- **Database**: Highest level container. Holds zero or more tables, views, stored procedures, etc. “Movie Collection”

- **Table**: Primary data storage container. Holds zero or more *rows* of information, each row representing one collection of data bits and relationships. “Titles”

- **Row**: Individual chunk of data, comprised of one or more *columns* of information. “id: 2600, title: Hackers”

- **Column**: One tiny part of data in a row. “Hackers”

WHITEBOARD TIME

- Let's draw some of this out on the whiteboard to get a better idea of what's going on, how relationships are commonly expressed, and how data is stored.

- We will also start sketching out a rough idea for how to organize a movie collection database.

LAB

1) In your own words, define what a table is and it's relationship with columns and rows.

2) On a sheet of paper, and using the sample movie collection database design as a guide, design a simple book collection database, trying to follow some of the ideas discussed in lecture for data reuse and proper organization.

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