Databases
and
Data Management

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Agenda

• Managing and Organizing Research
  • Zotero
  • Tropy
• Principles of Data Modeling
• Creating a Database
• Practice
• Collect your sources

• Organize your sources into a searchable library

• Sync and store your library in the cloud

• Collaborate on bibliographies and share citations
Setup

- [zotero.org](http://zotero.org) account
- Zotero application
- Browser extension
- Microsoft Word plugin
Adding References

Browser extension

PDF


Import

Manually
Attaching Files

PDF

• Linking vs. Storing?

Notes
Inserting Citations and Bibliographies

Copy & Paste

Microsoft Word plugin
Tropy

- **Group** photos into documents or items
- **Annotate** your photos
- **Add** custom tags
- **Search** your collections
Databases: Key Concepts

- **Database**: an organized collection of data
- **Table**: a collection of related data in a database
- **Record**: an individual entry in a table
- **Fields**: attributes describing each record
Database Models

- Flat File
  - Columns and rows organized in a tabular format
  - Each line represents a record
  - No relationship between records
- Relational
  - Recognizes relationships between multiple tables
Relationships

- One-to-One
- One-to-Many
- Many-to-Many
One-to-One Relationships

Customers

Addresses
One-to-Many Relationships

**Parent:** Table on **one** side of relationship

**Child:** Table on the **many** side of the relationship
Museum
Camera
Advisor
Pot
Works of Art
Photos
Students
Sherd
Parent Table: Museum

Child Table: Work of Art
Many-to-Many Relationships

Subject | Sources
---|---
Recipe | Ingredients
Movie | Actor
Relationships

- One-to-One
- One-to-Many
- Many-to-Many
Creating a Database
Join Tables

Movie

Role

Actor
Data Modeling Practice

1. Create Tables
2. Define the Relationship
3. List fields for each table and identify Primary and Foreign Keys
4. Determine the appropriate input type for each field
   - Text Box
   - Drop-down Menu
   - Pop-up Menu
   - Checkbox Set
   - Radio Button Set
   - Drop-down Calendar