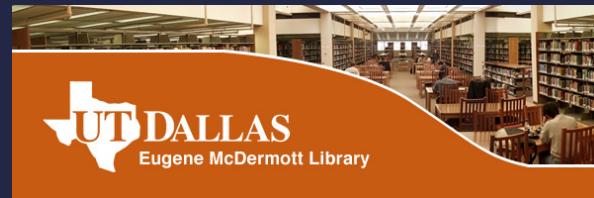


# Assignment 1

Kira Lowe

# Three applications I have used that employed a database system to store and access persistent data:



- Inter-university Consortium for Political and Social Research (ICPSR): a searchable database of data sets
- UTD Eugene McDermott Library: searchable database of materials online and on campus
- Walmart online grocery shopping: searchable database of inventory with ecommerce applications

# **Proposed application in social science 1: Database pairing students with seniors for housing**

- Purpose:
  - Find seniors willing to rent rooms to students, thereby reducing loneliness and depression in seniors while providing affordable housing and mentorship for students
- Function:
  - Users enter information like housing needs, interests, and preferences into database where they can be matched to a roommate based on their specified criteria
- Interface:
  - Website containing the database form as well as information about the program

# Proposed application in social science 2: Database for searching congressional votes

- Purpose:
  - Sites like govtrack and congress.gov can be intimidating for a casual user or do not have many searchable parameters
  - I propose a database where users can find voting records easily, using more search parameters than are currently available, to increase congressional transparency and accountability
- Function:
  - Data from congress.gov are used to maintain a database which users can search by combinations of issue keyword, representative (or even enter zip code if they don't know their representative), vote, and other parameters
- Interface:
  - Website with text boxes to enter keywords or a location and drop-down menus to select a congressperson, vote, bill number, etc.

# Proposed application in social science 3: Database for reuniting lost pets with their owners

- Purpose:
  - A central location where a pet owner can post a photo and other information about a lost pet that can be seen by the pound, rescue organizations, veterinarians, and community members
- Function:
  - Users who have lost a pet upload a photo, description of the animal, and contact information into a database
  - Users who have found a pet can search the database to try and find contact information for the owner of the found animal. They can also upload information about pets they have found in a similar manner to pets who have been lost.
- Interface:
  - A website that has a portion of the site dedicated to lost pets and a portion dedicated to found pets. The database entry form will be similar for either scenario but can be toggled to enter information into either the lost or the found category.

# NoSQL

- Why did NoSQL systems emerge in the 2000s?
  - The start of “Web 2.0” and user-generated content through applications like Facebook or blogs
    - Lots of data, in different forms, being created every minute
- How is NoSQL different than traditional database systems?
  - Relational vs. non-relational
  - More flexible in schema, more scalable both for size of data and number of users, lower cost