**Collection description (IOP 1.1)**

- **Starting place (do not put in IOP):**
  - A personal collection of children’s chapter books
  - Located in someone’s house

- **IOP collection description (hypothetical):**
  - **Name:** Chapter book Library
  - **Location:** school office in Denton, TX

**Collection description**

- **Organizational context:**
  - Developed by and for use by school children

- **Collection purpose:**
  - To provide children with access to the best, most entertaining chapter books in an expedient and efficient manner

**Format:** books

**Size:** 1,574

**Topics and scope:**
- Covers range of non-fiction and fiction genres (values such as growing up, friends, loyalty, animals, sports)
- Includes classic works as well as current releases

**Growth:** donations by parents and teachers

**User group description (IOP 1.2)**

- **380+ school children**
- **Boys and girls**
- Generally between ages 9 and 12
- Residents of Denton, TX or nearby

**User group description**

- **Low levels of general knowledge**
- **Low domain knowledge**
- **Moderate system knowledge**
- **Low information seeking knowledge**
User Queries

- Real life:
  User: What are some books with sports heroes?
  Librarian: That's pretty broad — any particular aspect you are looking for?
  User: I want to read basketball stars.
  Librarian: So... books about basketball star sports heroes. How many do you want?
  User: Two or three. Short ones if possible.
  Librarian: I think we can get some of those!

- IOP Form:
  User: I need two or three books about basketball sports heroes

Users’ queries (IOP 1.3)

1. I want some novels involving animal friends.
2. I’d like the latest book in the American Girl series.
3. What other books did the author of Tom Sawyer write? I want to read another.
4. What was that book where a kid has a porpoise friend and discovers a Martian creature at the bottom of the sea? I have to read it.
5. I need a couple war story books.
6. I want a couple books that deal with kids becoming heroes after being bullied.

Possible attributes

Which attributes are suggested in questions?
- Title, Creator (or Author or Illustrator), Publisher
- Format, Length, Language
- Literary Form (values such as novel, anthology)
- Genre, Subject, Setting, Time Period
- Synopsis (or Abstract or Plot)
- Character Name, Character Feature

Choosing attributes to represent

In system design, object attributes translate into metadata elements and then into record fields

- Attributes: characteristics or properties of entities
- Elements: structured parts of representations of entities
- Fields: logical units within database records; spaces to enter data

For example, the attribute Genre translates into the element Genre and then into the field Genre

Choosing attributes to represent

How many attributes/elements/fields do you need?
- Enough to respond to most frequently asked questions
- Enough to support the four user tasks
- Enough to adequately describe each object uniquely
  - Remember our goal of lumping and splitting
- NOT every descriptive detail of the object
- NOT attributes with only one value

Most students’ records have 8 to 15 fields.

The attribute Genre

- Genres of chapter books
  - Friendship
  - Loyalty
  - Exploring
  - Sports
  - Travel
  - Family
  - Games
  - Social issues
  --- perhaps others...
Mini-Lecture Series:  
System Design Example 1

The attribute Genre - semantics
- **Social issues** deals with subjects such as bullying, drugs, parent relationships, coming of ages, etc.
- **Games** deals with subjects such as computer games, children’s games, etc.

The attribute Subject
- Possible subjects
  - Sharks, baseball, soccer, rockets, sisters, boats, airplanes, shopping, sailing, navigation, cooking, mathematics, etc.
- Used to list a few juicy terms about book’s plot

The attribute Named Characters
- The few most important characters mentioned in the book
- How many? How do you determine which is important?

What would a set of fields look like?
- Author
- Cover illustrator
- Genre
- Subject
- ISBN
- Publisher
- Character name
- Plot summary
- Content warning
- Series name
- Title

Now we have to set the fields up, and write input rules!

Fields: Things to consider...
- Which require data in every record?
- Which hold unique data?
- Which need to be searchable?
- Which need a controlled vocabulary?

*The summary of these decisions is a big part of system design!"