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

Collection description

- 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
**Mini-Lecture Series:**

**System Design Example 1**

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**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.

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**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.

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**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

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**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.

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**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
-NOT every descriptive detail of the object
- NOT attributes with only one value

Most students’ records have 8 to 15 fields.

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**The attribute Genre**

- Genres of chapter books
  - Friendship
  - Loyalty
  - Exploring
  - Sports
  - Travel
  - Family
  - Games
  - Social issues

--- perhaps others…
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!