Collection description (IOP 1.1)

- Starting place (do not put in IOP):
  - A hypothetical collection of science books
- IOP collection description
  - Name: Ajax Science Library
  - Location: Ajax High School

Collection description

- Organizational context:
  - Developed to provide further reading for high school science students
- Collection purpose:
  - To provide students with age-appropriate material to supplement their readings for science projects and papers

Collection description

- Format: books
- Size: 1255+
- Topics and scope:
  - Covers range of broad science topics (earth science, biology, chemistry, astronomy, paleontology, physics)
  - Generally limited to recent texts, but some classics
- Growth: One-time grant and small annual stipend

User group description (IOP 1.2)

- 707 students attending 4 high schools
- Boys and girls
- Generally between ages 14 and 19
- All four grade levels
- Residents of Ajax, Texas and surrounding county

User group description

- Moderate levels of general knowledge
- Low to moderate domain knowledge, but will design to moderate
- Moderate system knowledge
- Moderate information seeking knowledge
Users’ questions (IOP 1.3)

1. I need a short book that describes how shield volcanoes grow?
2. I would like a book that shows how to predict planet appearances for a given date?
3. Ms. Fisbaine says I need to check out a couple books that give ideas for science fair projects
4. Bill Nye dude… does he do one on explosives? Can I have it?
5. I have looked at the field guide to birds. I need the same thing but on insects.
6. I have a theory that California will set sail. Can I get some textbooks on earthquakes or faults or whatever that shows maps?

Possible attributes

Which attributes are suggested in questions?
- Title, Series Name, Subject
- Creator (or Author or Illustrator), Book type
- Book feature, Length

Which attributes are needed in addition?
- Author, publisher, ISBN

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 Subject

- Broad subjects (for subject field)
  - Earth science
  - Biology
  - Physics
  - Chemistry
  - Paleontology
  - Physiology
  - Astronomy
  - First Contact

The attribute Subject - Granularity

- Under the broad term “Biology”
  - Microbiology, cells, diseases, DNA, microorganisms, reproduction, mitosis, miosis, genes
- Under the broad term “Astronomy”
  - Telescopes, stars, planets, galaxies, Jupiter, Saturn, space program, Apollo, asteroids, rockets
The attribute Book Type

- Possible values
  - Textbook
  - Field guide
  - Picture book
  - Overview
  - Detailed study

Attribute Book Feature

- Possible Values
  - Maps
  - Pictures
  - Overlays
  - Charts
  - Calculators
  - Projects
  - Experiments
  - Biographies

What the thesaurus would look like

Astronomy
  - UF Star studies
  - NT Galaxies
  - NT Planets
  - NT Space program

Space Program
  - BT Astronomy
  - NT Apollo
  - RT Rockets
  - Star Studies
  - Use Astronomy

Planets
  - BT Astronomy
  - NT Jupiter
  - NT Saturn
  - RT Asteroids

The four tasks...

1. I need a short book that describes how shield volcanoes grow?
   How will the user “find”?  
   By subject
   How will the user “identify”?  
   By subject
   How will the user “select”?  
   By length

The four tasks...

1. I would like a book that shows how to predict planet appearances for a given date?
   How will the user “find”?  
   By subject
   How will the user “identify”?  
   By book feature
   How will the user “select”?  

The four tasks...

1. I have looked at the field guide to birds. I need the same thing but on insects.
   How will the user “find”?  
   By book type
   How will the user “identify”?  
   By subject
   Or visa versa!
The four tasks…

1. I have a theory that California will sail. Can I get some textbooks on earthquakes or faults or whatever that shows maps?

   How will the user “find”?  
      By subject

   How will the user “identify”?  
      By book type

   How will the user “select”?  
      By book feature