CONTROLLED VOCABULARY & THESAURUS DESIGN

Trainee’s Manual

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Cataloging for the 21st Century—Course 3
Controlled Vocabulary & Thesaurus Design

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Course Introduction and Background

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Session 6  Display & Navigation
Session 7  Planning & Maintenance
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Sample Front Matter

Resources

Bibliography
Cataloging for the 21st Century:
The five CE course components

1. MARC/AACR2 cataloging of electronic resources
2. Overview of basic concepts of 21st century bibliographic control, including specific metadata standards and applications
3. Thesaurus design principles, building a controlled vocabulary, and examination of selected controlled vocabularies
4. Digital library design, with a project-based component
5. Philosophy and approach to asset management for the 21st century, including evaluation skills
Cataloging for the 21st Century: CE course series objectives

- To equip catalogers to deal with new types of resources and to recognize their unique characteristics
- To equip catalogers to evaluate competing approaches to and standards for providing access to resources
- To equip catalogers to think creatively and work collaboratively with others inside and outside their home institutions
- To ensure that catalogers have a broad enough understanding of the current environment to be able to make their local efforts compatible and interoperable with other efforts
- To prepare catalogers to be comfortable with ambiguity and being less than perfect
- To enable practicing catalogers to put themselves into the emerging digital information environment and to continue to play a significant role in shaping library services

Goals for this course

- Understand this course as the third in a series of five courses for Cataloging in the 21st Century and see thesauri within a larger context of vocabulary control
- Understand and apply fundamental concepts of controlled vocabulary and thesaurus design, and why they are important
- Understand and apply diverse types of term relationships to structure descriptive terms
- Understand and apply both basic rules and best practices from existing thesauri to the construction and maintenance of thesauri and controlled vocabularies
- Develop a basis for exercising individual judgment for making thesaurus and controlled vocabulary decisions
Course overview

- Session 1. Types of Controlled Vocabularies
- Session 2. Vocabulary Terms & Lists
- Session 3. Term Selection/Format & Synonyms
- Session 4. Hierarchies & Taxonomies
- Session 5. Associative Relationships & Thesauri
- Session 6. Display & Navigation
- Session 7. Planning & Maintenance
- Session 8. Resources & Future Directions

Why Controlled Vocabularies?

- Goal of information retrieval systems:
  - Efficient access to information
- Core problems:
  - Within a domain: different terms with same meaning
  - Between domains: same term with different meanings
- Other problems:
  - Scalability: almost all IR research is based on small test collections or user communities
  - User needs vary with time and subject domain
  - Basic disconnect between indexer and user experience
Who Controls Vocabularies?

- Information professionals
  - Computer scientists, information scientists, librarians, linguists
- Designers vs. maintainers
  - Which are you?
- What is your own interest in Controlled Vocabularies?
Controlled Vocabulary & Thesaurus Design

Types of Controlled Vocabularies

The Goal

The goal of a controlled vocabulary is to facilitate agreement between the concepts within the site and the vocabulary of the person using it.
Continuum of Vocabulary Control

List | Synonym Ring | Hierarchy | Thesaurus

Less Complexity More

Ambiguity Control | Synonym Control | Ambiguity Control | Synonym Control
Hierarchy | Hierarchical Relationships | Ambiguity Control | Associative Relationships

List Example 1

Welcome to The Starlite Cafe

Break away from your everyday life and immerse your senses in the splendor of poetry. The Starlite Cafe is your place to relax and enjoy. Browse through our poems. Share some of your own: from love poetry to Gothic - all poetry welcome!

- Create your own online portfolio.
- Link to your poems from any website.
- Create the perfect look for your poem.
- Improve your writing skills with our writing exercises and poetic challenges.
- Meet new friends!

Join the Starlite Family

Create a profile. Share your work with us. It's fast, it's passion and it's free! Once you've created your profile, you'll have full access to post, modify and delete your poems. Your profile will be linked to all of your new poems. You'll also have full access to our discussion forum and all the custom features of the Cafe.

Create a profile
Lost your username or password?

Log In

Welcome to The Starlite Cafe

Welcome Returners

Join the Starlite Family

Create a profile. Share your work with us. It's fast, it's passion and it's free! Once you've created your profile, you'll have full access to post, modify and delete your poems. Your profile will be linked to all of your new poems. You'll also have full access to our discussion forum and all the custom features of the Cafe.

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Log In

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- Create a profile
- Lost your username or password?

Log In
### List Example 2a

[Image of a webpage with a search bar and a list of categories, such as About, What's New, Tables of Contents, Repositories, Collections, Places, Documents, All Subjects, Historical Events, Quick Search, Search Collections, Search Documents, The Top 100, Community Space, and Help.]

### List Example 2b

#### Table of Contents: View Documents by Historical Event

<table>
<thead>
<tr>
<th>Term</th>
<th>All</th>
<th>Text</th>
<th>Audio</th>
<th>Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protestant Reformation, 1500-1650</td>
<td>17</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Protestant Reformation, 1529-1603</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdication of Mary Queen of Scots, 1557</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battle of Jarnac, France, March 13, 1569</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Bartholomew's Day Massacre, August 24, 1572</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thirty Years War, 1618-1648</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irish Rebellion and Cromwell's Invasion of Ireland, 1641-1650</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English Civil War, 1642-1651</td>
<td>123</td>
<td>123</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restoration, 1660-1688</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacobite Risings, 1689-1746</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French and Indian Wars, 1689-1763</td>
<td>41</td>
<td>41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Session 1: Types of Controlled Vocabularies

Synonym Ring Example 1a

Google

Synonym Ring Example 1b

Mobile phone - Wikipedia, the free encyclopedia
A mobile phone or cellular (cell) phone is an electronic telecommunications device. ... The use of a mobile phone is prohibited in some rail carriages.
www.en.wikipedia.org/wiki/Mobile_phone - 74k - Cached - Similar pages - Note this

How Stuff Works - Cellular Phones
Learn about wireless technology, check out our phone buying guide, read cell phone reviews and compare prices and features on wireless accessories.
www.howstuffworks.com/cell-phone.htm - 59k - Aug 20, 2006 - Cached - Similar pages - Note this

Personal Phones, PDA, Plans - Verizon Wireless
Affordable, reliable wireless services for you and your family from Verizon Wireless. ... I'm looking for a new phone and plan just for me. Start with...
www.verizonwireless.com/ - 26k - Cached - Similar pages - Note this

Compare Cell Phone Prices, Free Cell Phones, Cell Phone plans...
Compare Cell Phones, Research Cellular phones, Free cell phones, Compare Cell Phone plans, cell phone accessories, wireless phones, mobile phones.
www.leostatik.com/ - 74k - Cached - Similar pages - Note this
Synonym Ring Example 2

Hierarchy Example 1a

Vocabulary of Basic Terms for Cataloguing Costume
ICOM International Committee for the Museums and Collections of Costume

Women's Garments
- Main Garments
- Overwear
- Protective Wear (against dirt or danger, not weather)
- Underwear
- Supporting and/or Shaping Structures
- Night and Dressing Garment
- Accessories Worn
  - Head
  - Handwearing
  - Face coverings and additions
  - Above waist
  - Arms and hands

Men's Garments
- Main Garments
- Overwear
- Protective Wear (against dirt or danger, not weather)
- Underwear
- Supporting and/or Shaping Structures
- Night and Dressing Garment
- Accessories Worn
  - Head
  - Handwearing
  - Face
  - Above waist
  - At waist or below
  - Arms and hands
  - Legs and feet

Infants' Garments
- Main Garments
- Overwear
- Protective Garments
- Underwear
- Supporting and/or Shaping Structures
- Nightwear
- Accessories Worn
  - Head
  - Handwearing
  - Face
  - Above water
  - At waist or below
  - Arms and hands
  - Legs and feet
  - Accessories Carried
Hierarchy Example 2b

Trainee Manual

Session 1: Types of Controlled Vocabularies

Thesaurus Example A

MeSH Browser (2006 MeSH):
The lists are updated every week on Sunday.
Go to 2006 MeSH

Enter term or the beginning of any root fragment: or

Search for these record types:

- Main Headings
- Qualifiers
- Supplementary Concepts
- All of the Above
- Search on MeSH Unique ID
- Search text words in Annotation & Scope Note

Search in these fields of chemicals:

- Heading Mapped To (GIM) (Supplementary List)
- Indexing Information (ID) (Supplementary List)
- Pharmacological Action (PA)
- CAS Registry/EC Number (EI)
- Related CAS Registry Number (ER)

Find Exact Term | Find Terms with ALL Fragments | Find Terms with ANY Fragment

15

Thesaurus Example B

MeSH Descriptor Data

Return to Entry Page

<table>
<thead>
<tr>
<th>MeSH Heading</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Number</td>
<td>805 318 740</td>
</tr>
<tr>
<td>Tree Number</td>
<td>003 850 520 830</td>
</tr>
<tr>
<td>Tree Number</td>
<td>850 548 832</td>
</tr>
<tr>
<td>Tree Number</td>
<td>855 715 360 750</td>
</tr>
</tbody>
</table>

Annotation: DM, SPEC only; SPEC qual (if no qual, prefer / stat) with non-disease terms. Manual 19:2, 19:868. maxit on des = / epidemic. DM = for statistical theory or statistical methods; tables in texts are not necessarily / mean. do not confuse with MATHEMATICS, DF, STATIST

Scope Note: The science and art of collecting, summarizing, and analyzing data that are subject to random variation. The term is also applied to the data themselves and to the summarization of the data.

Entry Term: Area Analysis
Entry Term: Correlation Studies
Entry Term: Correlation Study
Entry Term: Correlation of Data

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### Thesaurus Example C

<table>
<thead>
<tr>
<th>Entry Term</th>
<th>Indirect Estimation Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Term</td>
<td>Multiple Classification Analysis</td>
</tr>
<tr>
<td>Entry Term</td>
<td>Service Statistics</td>
</tr>
<tr>
<td>Entry Term</td>
<td>Statistical Study</td>
</tr>
<tr>
<td>Entry Term</td>
<td>Statistics, Services</td>
</tr>
<tr>
<td>Entry Term</td>
<td>Tables and Charts</td>
</tr>
<tr>
<td>See Also</td>
<td>Bibliometrics</td>
</tr>
<tr>
<td>See Also</td>
<td>Biometry</td>
</tr>
<tr>
<td>See Also</td>
<td>Meta-Analysis</td>
</tr>
<tr>
<td>See Also</td>
<td>Models, Statistical</td>
</tr>
<tr>
<td>See Also</td>
<td>Psychometrics</td>
</tr>
<tr>
<td>See Also</td>
<td>Genetic Techniques</td>
</tr>
<tr>
<td>Allowable Qualifiers</td>
<td>CL, EC, ED, ES, HI, IL, MA, MT, CG, STTD</td>
</tr>
<tr>
<td>Entry Version</td>
<td>STATIST</td>
</tr>
<tr>
<td>Unique ID</td>
<td>D0133223</td>
</tr>
</tbody>
</table>

### Thesaurus Example D

- Investigative Techniques [E05]
- Epidemiologic Methods [E05 318]
  - Contact Tracing [E05 318 740]
  - Data Collection [E05 318 740 150] +
  - Disease Notification [E05 318 362]
- Epidemiology, Molecular [E05 318 416]
  - Sentinel Surveillance [E05 318 650]
- Statistics [E05 318 740]
  - Actuarial Analysis [E05 318 740 100]
  - Analysis of Variance [E05 318 740 250] +
  - Area Under Curve [E05 318 740 200]
  - Cluster Analysis [E05 318 740 220] +
  - Confidence Interval [E05 318 740 270]
  - Data Interpretation, Statistical [E05 318 740 300]
  - Discriminant Analysis [E05 318 740 350]
Other Means of Access

- Folksonomies & tagging communities
  - Technorati - tagging blog entries
  - Digg - tagging webpages
  - Flickr - tagging images
  - Answerbag - folksonomy

- Classification systems
  - Library of Congress Classification Outline
  - Universal Decimal Classification

- Keyword extraction and search
### Google Coop Example

Welcome to the Google Co-op page for the health topic. You can help improve search around this topic by contributing your expertise. The labels for this topic — both those in use and those in development — are listed below. We encourage you to annotate useful and reliable webpages in this topic using the labels below. (Click a label to get its definition.) You can also use the search box below to test out the current version of this topic.

#### Health labels

- Condition info
- Drug info
- For doctors
- Info type
- For patients
- Research overview
- Practice guidelines
- For health professionals
- Alternative medicine
- Patient handbooks
- Continuing education
- Clinical trials
- For patients
- Support groups

Try it out: [Search](#)

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### Criteria for Selecting a CV Tool

- **Institutional requirements**
  - Budget, time, manpower constraints
  - Purpose of the CV tool
- **Benefits to the user**
  - Expected uses for the CV tool
  - Balancing ease of use and functionality
Defining Scope & Users

- **Scope of the material**
  - What is your core topic or topics?
  - What are your surrounding topics?
  - What is there a need for?
  - What is already out there?
  - What do you have resources for?

- **User population**
  - Who is intended user?
  - How and when will they use the CV tool?

Appropriate CV Applications

- Subject
- Genre
- Physical material
- Personal names
- Corporate/organization names
- Events
- What else?
CV Tool Discussion

- What is your topic?
- Who is your intended audience?
- What is your institution’s need for a CV tool?
Controlled Vocabulary & Thesaurus Design

Vocabulary Terms & Lists

Generating Wordstock

- **Goal:**
  - Find terms that accurately reflect the collection or domain
- **Where:** sources & warrant
  - People
  - Published materials
  - Data dictionaries
- **What:** content bearing terms
  - This is tricky...
Word Frequency Distribution

```
Word Frequency Distribution

"and"
"the"
"economics"

"monopoly"
"scarcity"

"Pareto Efficiency"
"Free Rider Problem"
```

Warrant

Why select particular terms over others:

- **Literary Warrant** - using the terminology found in literature of the topic
- **User Warrant** - using the terminology people familiar with the topic use to describe concepts
- **Organizational Warrant** - based on the needs and priorities of the organization
Exercise 1: Generate Wordstock

- Get into groups of 2-3
- Read the provided materials
- Identify potential content bearing terms
- Write each term on a Post-It

Exercise 1: Discussion

- What terms did you come up with?
- Are they content bearing?
- Are users going to search on these terms?
- Who are the potential users for this collection?
- Were these appropriate sources of wordstock?
The List

- The list literally provides a list of topics represented by your collection
- Terms used have neither hierarchy nor synonyms
- A list generally consists of a small number of terms whose use is intuitive, e.g., format, genre, size, etc.
- List creation
  - Generate wordstock
  - Weed for appropriate terms
  - Organize materials under terms
List Example 1

List Example 2
List Discussion

- What are the potential benefits of a List?
- What are the potential drawbacks of a List?
- When would it be appropriate to use a List for access?
Controlled Vocabulary & Thesaurus Design

Term Selection/Format & Synonyms

Term Selection

- Defining your scope
  - What is the purpose of this controlled vocabulary?
  - Who is the user of this controlled vocabulary?
- Refining your scope
  - Which terms are central to your collection/topic/mission?
  - Which terms are on the periphery?
- Stick with your scope
  - Focus on the central terms
  - Hang onto the peripheral terms for future consideration
Term Format & Style

- Plural nouns
  - Ex. Cats, Dogs
- Abstract concepts
  - Ex. Happiness
- Abbreviations
  - Use only when the full form is rarely used (e.g., AIDS, DNA)
  - When the full form is used, add a cross reference from the abbreviation (and vice versa)
- Capitalization
  - Generally, use capital letters only for proper names, etc.
  - Follow common usage (e.g., eBay, dBase IV)

Compound Terms - Good or Bad?

- Multiple words to express a single concept
- Supported by literary or user warrant
  - Aid to families with dependent children
- Avoid false hits during retrieval
  - Search: library AND science
  - Desired: Library science or Science library
- When to use compound terms – section 7.5 on page 39
- Generally, avoid multiple concepts in a single expression
  - Children and television - prefer Children AND Television
  - Bird migration - prefer Birds AND Migration
  - Aircraft engines - prefer Aircraft AND Engines
Descriptor vs. Subdivision Logic

- Descriptor vocabularies express multiple concepts with separate terms
  - Each concept or aspect warrants a term
  - Intended for post-coordinate searching – user brings concepts together
  - Ex: Liver AND Blood Vessels AND Diseases
- Vocabularies like LCSH use subdivisions to refine major concepts with additional aspects
  - Selected aspects are routinely expressed as subdivisions
  - Intended for pre-coordinate searching – vocabulary brings concepts together
  - More complex to create, learn and apply
  - Ex: Liver—Blood Vessels—Diseases

Terms Can Be Ambiguous

- “Pitch” can represent:
  - a property of sound
  - throwing a baseball
  - a sales talk
  - degree of deviation from the horizontal plane
  - dark heavy viscid substance
  - a high approach shot in golf
  - a card game
  - abrupt up-and-down motion
  - the action of throwing something
  - etc.

References:
- 7.2.1-2, p. 37
- 5.3.1, p. 13
Term Disambiguation

- Term qualifiers can be used to disambiguate between two or more terms with different meanings
  - Mercury (planet)
  - Mercury (metal)
- Try to use only when necessary

Resolving Synonyms

- Determine which is the preferred term
  - What do your sources say?
    - Which is more frequently used?
    - Which is more likely to be prefaced with “also known as”?
  - Talk to your experts
  - Ask the user community
    - Through user testing
    - Checking search logs
- Save the others as synonyms
Term Record Components

- Preferred or Main Entry Term
  - SN - Scope note
    - A definition of when to the term applies
    - Anything from a few words to a paragraph
  - UF - Use for
    - Indicates the synonymous terms for which the preferred term should be substituted

- Non-preferred or Non-entry term
  - USE - Use
    - Indicates the preferred term to be used instead of the synonym term

Example Scope Notes

- Cartography
  - SN Science or art of making maps

- Printmaking
  - SN The process of making a picture or design from an impression of an engraved metal plate, wooden block, silkscreen stencil, lithographic stone, photographic negative, etc.

- Patternmaking
  - SN (Note: Do not use for the study of numerical patterns -- see the Identifier "Number Sequences" for that concept)
Exercise 2: Terms & Synonyms

Using your terms from the previous exercise...

- Format your terms
  - As plural nouns, abstract concepts, compound terms, etc.
  - Add qualifiers where necessary
- Resolve any synonyms into
  - Preferred terms
  - And their non-preferred terms
- Start term records for each term
  - Preferred terms
    - Add a SN and UF if there are synonyms
  - Non-preferred term
    - Add the preferred term to USE

Exercise 2: Discussion

- How did you format your terms?
- What terms did you select as preferred?
- Was everyone in your group in agreement about the terms?
The Synonym Ring

- Synonym rings are for the controlling of synonymous terms
- Predominantly used for query expansion
Synonym Ring Example 1

View results from: Dictionary | Thesaurus | Encyclopedia | the Web

Main Entry: information
Part of Speech: noun
Definition: facts
Synonyms: advice, ammo*, break*, clue, confidence, counsel, cue, data, dirt*, dope*, dossier, earful*, enlightenment, erudition, hash, hookup, hot poop, illumination, info*, inside story*, instruction, intelligence, knowledge, leak, learning, lore, lowdown*, material, message, network, news, notice, notification, orientation, pipeline, poop, propaganda, report, science, scoop, score, skinny, the latest, tidings, tip, tip-off, what's what*, whole story*, wisdom, word*

Source: Roget's New Millennium™ Thesaurus, First Edition (v 1.3.1) Copyright © 2005 by Lexico Publishing Group, LLC. All Rights reserved.
* = informal or slang

Synonym Ring Example 2a

Advanced Search Results

Not all Strategis content is included in this search. Select from the left navigation bar to search a specialized content area, to perform an Advanced Search or to access the Help section.

Type of search: New search
Scope: All words
Search in: All Text
Word variations: On

Show all options
Synonym Ring Example 2b

11. **Consultation on the Issuance of a Spectrum Licence to the Railway Association of Canada**
   - **Title:** Consultation on the Issuance of a Spectrum Licence to the Railway Association of Canada
   - **Format:** PDF
   - **Size:** 34.0 KB
   - **Access:** Access to documents Spectrum, Information Technologies and Telecommunications EXPAND m对阵telecommunications; Licensing Consultation on the Issuance of a Spectrum Licence to the Railway Association of Canada
   - **Format:** PDF
   - **Size:** 34.0 KB
   - **Access:** Access to documents Spectrum, Information Technologies and Telecommunications EXPAND
   - **Author:** Spectrum, Information Technologies and Telecommunications
   - **Date:** 2003-09-28
   - **Size:** 2 KB

12. **Annexes, Rail and Urban Guided Transit Equipment Sector Competitiveness Framework**
   - **Title:** Annexes, Rail and Urban Guided Transit Equipment Sector Competitiveness Framework
   - **Format:** PDF
   - **Size:** 200 KB
   - **Access:** Access to documents Rail and Urban Guided Transit Equipment Sector Competitiveness Framework
   - **Author:** Rail and Urban Guided Transit Equipment Sector Competitiveness Framework
   - **Date:** 2003-09-28
   - **Size:** 200 KB

Synonym Ring Discussion

- What are the potential benefits of a Synonym Ring?
- What are the potential drawbacks?
- When would it be appropriate to use a Synonym Ring for access?
Controlled Vocabulary & Thesaurus Design

Hierarchies

Term Relationships

- Term equivalency
  - Groups equivalent terms
  - Establishes USE/UF relationship
    - USE Preferred term
    - UF Synonym (non-preferred term)

- Term hierarchy
  - Groups like terms under a broader term
  - Establishes BT/NT relationship
    - BT Broader term
    - NT Narrower term
Mapping Term Relationships

BT (Broader Term)

USE, UF (Use, Use For)

Term

NT (Narrower Term)

Hierarchical Relationships

Whole/Part BTP

Generic BTG

Instance BTI

BTP Heads
NT Skulls

BTG Bones
NT Skulls

BTI Movies
NT The Skulls
Polyhierarchies

- Where the same term fits under more than one broader term

BTP Heads

NT Teeth

NT Brains

NT Vertebrae

BTG Bones

NT Skulls

NT Femurs

AAT’s “graffiti” Polyhierarchy

Facet/Hierarchy Code: VVC

Hierarchical Position:

- Objects Facet
- ... Visual and Verbal Communication
- ........ Visual Works
- ........... <visual works>
- ................ <visual works by location or context>
- ................... graffiti

Additional Parents:

- Objects Facet
- ... Visual and Verbal Communication
- ........ Information Forms
- ........... <information forms>
- ............ <document genres>
- ................ <document genres by form>
- ................... inscriptions
- ..................... graffiti
Polyhierarchy or Qualifiers

- BT4 Materials
- BT3 Inorganic materials
- BT2 Rock
- BT1 Metamorphic rock
- Jade
  - NT Jadelite
  - NT Old jade

- Jade (materials)
- Jade (colors)

Facet Analysis & Facets

- The division of terms into categories
- Using one principle of division at a time
- To produce groups which are
  - Homogeneous
  - Mutually exclusive
- The facets comprise a single thesaurus
Facet Example: AAT

- Top of the AAT hierarchies
  - Associated Concepts Facet
    - Associated Concepts
    - Physical Attributes Facet
    - Attributes and Properties
    - Conditions and Effects
    - Design Elements
    - Color
    - Styles and Periods Facet
    - Styles and Periods
    - Agents Facet
    - People
    - Organizations

Activities Facet
  - Disciplines
  - Functions
  - Events
  - Physical and Mental Activities
  - Processes and Techniques
  - Materials Facet
  - Materials
  - Objects Facet
  - Object Groupings and Systems
  - Object Genres
  - Components
  - Built Environment
  - Furnishings and Equipment
  - Visual and Verbal Communication

Grouping Terms

- Use of terms to group subordinate terms

- flowers
  - annuals
    - marigolds
    - petunias
    - zinnias
  - perennials
    - dianthus
    - coreopsis
    - peonies

[5.3.4, p. 14 & 9.3.4.16, p. 72]
Node Labels

- “Dummy” terms
- Can’t be assigned to objects
- Marked by italics or brackets
- In facets, highest terms are often node labels

*Visual Works*

visual works by form
- dioramas
- diptychs
- triptychs

visual works by function
- cartoons
- clip art

CV Scope (again)

What terms should be included in a thesaurus:

- Only terms needed to describe objects currently in the collection?
- All concepts within the domain (even if there are currently no documents in the collection on a topic)?

Discussion

- What are the benefits of each approach?
- What are the weaknesses of each approach?
- How might you decide which approach to use?
Exercise 3: Hierarchy!

In your groups...
- Take the terms from Exercise 2
- Group like terms
- Develop or find Broader terms to describe the groupings

Exercise 3: Discussion

- What hierarchies did you come up with?
- Did anyone attempt Polyhierarchies or Qualifiers?
- How did this work?
  - Was it harder than you expected?
  - Was it easier than you expected?
Continuum of Vocabulary Control

<table>
<thead>
<tr>
<th>List</th>
<th>Synonym Ring</th>
<th>Hierarchy</th>
<th>Thesaurus</th>
</tr>
</thead>
</table>

Less Complexity More

- Ambiguity Control
- Synonym Control
- Synonym Control Hierarchical Relationships
- Ambiguity Control Synonym Control Hierarchical Relationships Associative Relationships

Hierarchies

- Taxonomies
  - Hierarchical organizations of terms
  - Controlled for synonyms
  - Prevalent in business and web topic organization
  - Intended to reflect real world organization

- Ontologies
  - Hierarchical organization of terms
  - Not necessarily controlled for synonyms
  - Prevalent in computer science and academia
  - Intended to reflect disciplinary domain
  - Computer readable
Hierarchy Example 1c

**Media and Entertainment**

Information media companies and the entertainment industry, including resources for filmed entertainment, live entertainment, broadcasting and journalism.

<table>
<thead>
<tr>
<th>Media and Entertainment</th>
<th>Company Profiles</th>
<th>News</th>
<th>Web Listings</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Film Industry</td>
<td>• Music Industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Telecommunications</td>
<td>• Maps and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Media</td>
<td>• Athletes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Live Entertainment</td>
<td>• Talent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• News Entertainment</td>
<td>• Television</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Events</td>
<td>• Visual Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sports</td>
<td>• Visual Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Film</td>
<td>• Theater</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

More Media and Entertainment Categories:

- Consultants
- Education & Training
- Employment
- Events
- Film
- Journalism
- Music Industry
- Consultants
- News
- Online Entertainment
- Organizations
- Photography
- Printing for the Publishing Industry
- Reference
- Software
- Sports
- Shopping Media
- Technology
- Theater

Sponsored Links

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Hierarchy Example 2a

**allmusic**

![allmusic Logo](image)

Artist/Group: [Enter Artist/Group]

Advanced Search

**Featured Artist/Group:**

- Bob Dylan

New Album: "Modern Times"

Ticketmaster Pre-Sale Offer

**Album of the Day:**

- *No Cover*

**Check out the new look!**

**allmovie**

- *amg*

**in the latest installment of Now, find out what has our editors all worked up is the summer crowd to a album. From the deathly amount of a

20
### Hierarchy Example 2b

**Jazz Styles**
- Big Band/Swing
  - Big Band
  - Traditional Big Band
  - Dance Bands
  - Latin
  - Ballroom Dance
  - Modern Big Band
  - Fusion
- Apex
- Latin/Swing
- Smooth Jazz
- Smooth Rock
- Contemporary Pop
- Commodities
- Latin/Commodities
- Latin Band

**Free Jazz**
- Modern Creative
- Modern Free
- Latin Creative
- In Rock
- Free Jazz
- Third Stream
- Inner City
- Third Stream Jazz
- Avant Garde Jazz

**Latin Jazz/World Fusion**
- World Fusion
- Latin Jazz
- New Cuban Jazz
- Brazilian Jazz
- Spanish Fusion
- Cuban Jazz
- Mexican Jazz

**New Orleans/Classic Jazz**
- Rhythm & Blues
- Bebop
- Dixieland
- Swing

**Hard Bop**
- No Pat
- Funk
- Hard Bop
- World Music
- Standards

**Cool**
- Cool
- West Coast Jazz

---

### Hierarchy Example 3a

- **Main Page**
- **Welcome to the Living Taxonomy Project (LTP)**
  - The Living Taxonomy Project is a collaborative effort aimed at creating a global set of open-source, standards-based taxonomies for education. The purpose of these taxonomies will be to provide a fine-grained structure for the classification and discovery of educational materials around the world. We will be updating our taxonomies on a regular basis and invite our users to edit these taxonomies as well as suggest or create new ones. A list of upcoming taxonomy changes can be found on our What's New page, and suggestions for new taxonomies can be made on our Suggestions page.

- **Taxonomy Categories**
  - Humanities and Social Sciences | Business and Economics | Science, Engineering and Math | Education

- **Articles**
  - Building Learning Communities with Taxonomies and Learning Objects
  - It had been a hard day in the evening teaching, and earlier English composition faculty members. Ms. Delancey was looking for somewhere to have tea with the girls. She called into the College of Fine Arts, English Department page, and entered the discussion boards and links. It was a remarkably pleasant experience... much to write more... much out of the others.

- **Announcements - Updates - Links**
  - The Living Taxonomy project now has an associated blog:
    - http://livingtaxonomy.blogspot.com

---
Hierarchy Example 3b

Hierarchy Example 3c

Cataloging for the 21st Century
Course 3: Controlled Vocabulary & Thesaurus Design
Hierarchy Example 3d

Hierarchy Example 3e
Hierarchy Example 3f

Hierarchy Discussion

- What are the potential benefits?
- What are the potential drawbacks?
Wrapping Up Day 1

- The role of Controlled Vocabulary tools
- The spectrum of Controlled Vocabulary tools
- Term selection and Lists
- Term refinement and Synonym Rings
- Organizing terms with hierarchy
- Any questions?
Today’s Goals

- Questions about yesterday’s sessions
- Associative relationships and Thesauri
- CV display and navigation
- CV planning and maintenance
- CV resources and future directions
**Relationships Map**

```
  BT  
(Broader Term)  
    Term  
  USE, UF  (Use, Use For)  Term  RT  (Related Term)
  NT  (Narrower Term)
```

**Associative Relationship**

- “the most difficult [relationship type] to define” (Z39.19)
- Semantic or conceptual relationship
- Used on the grounds that their inclusion may suggest additional descriptors for indexing or retrieval.
- Overlapping sibling terms (8.4.1.1)
- Terms in different hierarchies (8.4.2)
### Sibling Rules

![Sibling Rules Diagram]

#### Derivational Relationships

<table>
<thead>
<tr>
<th>donkeys</th>
<th>BT equines</th>
<th>RT mules</th>
</tr>
</thead>
<tbody>
<tr>
<td>equines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NT donkeys</td>
<td>NT horses</td>
<td>NT mules</td>
</tr>
<tr>
<td>horses</td>
<td>BT equines</td>
<td>RT mules</td>
</tr>
<tr>
<td>mules</td>
<td>BT equines</td>
<td>RT donkeys</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RT horses</td>
</tr>
</tbody>
</table>

![Derivational Relationships Diagram]

---

8.4.1.1, p. 52

8.4.1.3, p. 52
Hierarchy & Associativity

- Hierarchy depth rules
  - Try to be as specific (deep) as possible
  - Try to explicate the relationship
- Inverse relationship between
  - Depth of hierarchy
  - Number of associative relationships
  - Eg. A flat thesaurus will have many more associative relationships

Additional Associate Relationships

- Relationships between terms belonging to different hierarchies
  - Process - Agent
  - Process - Counteragent
  - Action - Property
  - Action - Product
  - Action - Target
  - Cause - Effect
  - Concept or Object - Property
  - Concept or Object - Origins
  - Concept or Object - Units or Mechanisms of Measurement
  - Raw Material - Product
  - Discipline or Field = Object or Practitioner
  - False Common Parent
  - Antonyms
Administrative Information

- Includes
  - Scope note: defining the scope of use for the term
  - Creator: the person who entered the term
  - Creation date: date of entry
  - Language: term language
  - Modified by: last modifier of the term record
  - Modified date: term last modified on date
- Keeps track of your decisions for you and others!

Exercise 4: Associate

Given your groups and terms from yesterday...
- Establish as many associative relations as possible
- Revise your scope notes, hierarchy, etc when necessary
Exercise 4: Discussion

- What associations did you establish?
- Questions?
- Problems?

Continuum of Vocabulary Control

List | Synonym Ring | Hierarchy | Thesaurus

Less Complexity More

Ambiguity Control Synonym Control
Ambiguity Control Synonym Control Hierarchical Relationships
Ambiguity Control Synonym Control Hierarchical Relationships Associative Relationships
**Thesauri**

- A tool for vocabulary control of a specific subject domain
- It contains:
  - Preferred terms and non-preferred terms
  - The semantic relations between terms
  - Rules for use and other administrative information
- It presupposes:
  - A particular collection of documents
  - A particular group of users

---

**Thesaurus Example 1a**

[Image of thesaurus example]

Connecting Mathematics

This site contains brief explanations of mathematical terms and ideas in English, Danish, Polish, Hungarian, Lithuanian, and Russian. The site also provides a link to the Spanish version. Click the link to access the Spanish version. The site features a link to a related site. You can also access the site by clicking the link on each page. If you have the Java plug-in, you can use the Java browser. This allows you to see ideas that...
Thesaurus Example 1b

Thesaurus Example 1c
Thesaurus Example 2

The NASA Thesaurus contains the authorized subject terms by which the documents in the NASA Aeronautics and Space Database are indexed and retrieved. The scope of this controlled vocabulary includes not only aerospace engineering, but also supporting areas of engineering and physics, the natural sciences (aeronautics, astrophysics, and planetary sciences), Earth sciences, and to some extent, the biological sciences. The Thesaurus contains over 14,270 terms, 4,287 headings, and 4,475 USE references. Terms are organized within a hierarchical structure, and also include related terms lists.

Publications and Notices
- NASA Thesaurus (PDF Publication on CD-ROM)
- Thesaurus-List Library
- NASA Thesaurus Terms Added (Monthly Update)

Electronic File Products
- Thesaurus Term List (Data File for Site Usage)
- Thesaurus Hierarchical Listing (Data File for Site Usage)

Web-Browsable PDF Documents
- NASA Thesaurus
- Other Vocabulary Links

---

Thesaurus Example 3a

The Cook’s Thesaurus

The Cook’s Thesaurus is a cooking encyclopedia that covers thousands of ingredients and kitchen tools. Entries include pictures, descriptions, synonyms, pronunciations, and suggested substitutions.

Ingredients of the Month

Brined red cabbage: pair well with apples, onions, nuts, and red wine, and it makes an excellent bed for pork, duck, and salmon. Choose firm, shiny heads that are as dark as possible. Don’t overcook red cabbage or you’ll sacrifice flavor and vitamins.
**Thesaurus Example 3b**

**Vegetables Category**

Vegetables is a catch-all category that includes many of the edible parts of a plant, like stems, roots, flowers, and leaves. We don’t usually consider the fruits of a plant to be vegetables, except for fruits that aren’t very sweet. Tomatoes, squashes, peppers, eggplants, and beans, for example, are all fruits, but we usually refer to them as vegetables.

- Roots
- Tubers, including potatoes and sweet potatoes & yams.
- Stalk Vegetables
- Onions, including green onions & leeks and dry onions & shallots.
- Garlic
- Ginger & Other Rhizomes
- Cabbages

---

**Thesaurus Example 3c**

**Sweet Potatoes & Yams**

- *batata*
- *batata dulce*
- *batata*

Batata = tropical sweet potato = Cuban sweet potato = white sweet potato = white-flushed sweet potato = batata = batata = batata dulce = amarante. Name: Batata aren’t as sweet and tender as other sweet potatoes, but many people prefer their firmer consistency and more delicate flavor. Store them at room temperature and use them soon after you purchase them, since they tend to spoil quickly. Suffixes: sweet potatoes (SP), sweet yam (SY), Cuban sweet potato (CSP), batata*

- *cassava*
- *Cuban sweet potato*
- *cassava*

Cassava: See tropical yam.

carbohydrate: See tropical yam.

*pronunciation: EEE-may-tah*
Thesaurus Example 4

Thesaurus

The ICPSR Thesaurus is a controlled vocabulary system composed of three separate lists: Subject Thesaurus, Personal Names Authority List, and Geographic Names Thesaurus. Brief descriptions and links to each are provided below.

- **Subject Thesaurus** is an alphabetical listing of social science subject terms. The scope of this thesaurus is multidisciplinary and is intended to reflect the subject range of the ICPSR archive. Social science disciplines represented include: political science, sociology, history, economics, education, criminal justice, demography, public health, law, and international relations.

- **Personal Names Authority List** provides controlled name forms and spellings. Unlike the Subject and Geographic lists, it is non-hierarchical (there are no broader-narrower, or related term designations). This list is designed to provide name form consistency and, through the use of a "description" (DBS) note field, enable users to distinguish between same or similar names and to determine whether the person name is appropriate to their indexing or searching needs.

- **Geographic Names Thesaurus** provides guidance on the preferred and/or current names of geographic and geographic entities. It is hierarchically arranged using broader-narrower notation, allowing one to navigate the relationships among region, continent, country, and in some cases, cities. Scope notes briefly detailing the history of country name changes are included along with instructions and restrictions for their use and application.


Thesaurus Example 5a

Chocolate Thesaurus

IS 463 Indexing and Thesaurus Construction, Fall 2004

- Introduction
- Purpose
- Construction
- Guide to Application
- Updating & Enhancing
- Strengths & Weaknesses
- Analysis
- Appendices
- Assignment
- Credits & Resources
- Thesaurus
- Alphabetical
- Hierarchical
Thesaurus Example 5b

Chocolate Thesaurus

IS 463 Indexing and Thesaurus Construction, Fall 2004

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

C
Cacao Beans
Cacao Butter (see: COCOA BUTTER)
Cacao de Zeeman (see: NETHERLANDS, THE)
Cocoa Fruits (see: CACAO FRUITS)
Cocoa Nibs (see: COCOA NIBS)
CACAO PODS
CACAO PODS
CACAO Powder (see: COCOA POWDER)
CACAO Seeds (see: CACAO SEEDS)
CACAO SEEDS
Cacao Beans
Cacao Butter (see: COCOA BUTTER)
Cacao de Zeeman (see: NETHERLANDS, THE)
Cocoa Fruits (see: CACAO FRUITS)
Cocoa Nibs (see: COCOA NIBS)
CACAO PODS
CACAO PODS
CACAO Powder (see: COCOA POWDER)
CACAO SEEDS
Cacao Beans
Cacao Butter (see: COCOA BUTTER)
Cacao de Zeeman (see: NETHERLANDS, THE)
Cocoa Fruits (see: CACAO FRUITS)
Cocoa Nibs (see: COCOA NIBS)

Thesaurus Example 5c

Chocolate Thesaurus

IS 463 Indexing and Thesaurus Construction, Fall 2004

Hierarchical Thesaurus

Regions
Natural Sources
Types
Chocolate Goods
Processes
Associated Ingredients
Thesaurus Discussion

- What are the potential benefits of a thesaurus?
- What are the potential drawbacks?
Controlled Vocabulary & Thesaurus Design

Display & Navigation

General Text Guidelines

- Font and capitalization
  - Bold or all caps for preferred terms
  - Italics or lower case for non-preferred terms
- Indentation conventions
- Order of relationships
  - (e.g. BT, then NT, then RT), or by facet
- Be consistent!

9.2.3 & 9.2.4, p. 61
Standard Term Record

TERM

Non-preferred term

SN Scope note

USE TERM

BT Parent term

NT Child term/s

RT Related term/s

UF Non-preferred term/s

9.4.1, p. 74

Term Record Example 1

Thesaurus Search Results

Ecology

Record Type: Main

Scope Note: Study of the interrelationships between organisms and their environment

Category: Science and Technology

Broaderterm: Biological Sciences

Narrower Term: n/a

Related Terms: Adjustment (the environment); Air quality; Agriculture; Botany; Climate; Conservation (environment); Ecological; Ecology; Energy; Environment; Environmental; Environmental education; Environmental standards; Epidemiology; Food; Geography; Geology; Health; History; Language; Literacy; Mathematics; Meteorology; Oceanography; Physical; Plant; Policy; Pollution; Renewable; Resources; Science; Scientific; Social; Stewardship; Sustainable; Technology; Water; Water quality; Weather; Wildlife; Zoology

Used For: Biodiversity (2006); Ecosystems (2006); Euthanasia (2006); Genetics (2006); Habitat (2006); Marine (2006); Rain forest (2006); Resources (2006); Soil (2006); Statistics (2006); Sustainable development (2006); Water (2006); Water resources (2006); Water quality (2006); Weather (2006); Wildlife (2006)

Use Term: n/a

Use And: n/a

Add Date: 07/01/1996
Term Record Example 2a

**Research**

Research Home > Conducting Research > Art & Architecture Thesaurus > Full Record Display

Art & Architecture Thesaurus Online
Full Record Display

Click the icon to view the hierarchy.

**ID:** 300192836  
**Record Type:** concept

animal glue (glue, organic adhesive, ... Materials)

**Note:** An adhesive made from a solution of degraded or denatured collagen in water.

**Terms:**

- animal glue (preferred, C, U, D, American English-
  P)
- animal glues (C, U, D, American English)
- glue, animal (C, U, D, American English)
- glues, animal (C, U, D, American English)

**Facet/Hierarchy Code:** M, MT

---

**Term Record Example 2b**

**Hierarchical Position:**

- Materials Facet
- ... materials
- ........ materials
- ................ <materials by function>
- ................ adhesives
- .................. <adhesive by composition or origin>
- ...................... organic adhesive
- .................... glue
- ...................... animal glue

**Related concepts:**

related to .... gelatin

................. (<processed animal material>, animal material, ... Materials) [300011812]

**Sources and Contributors:**

- animal glue........... [VP Preferred]
  ... Mills and White, Organic Chemistry (1987) 75
- animal glues.......... [VP]
  ... Rose and van Endt, ed., Protein Chemistry (1984) 42
- glue, animal.......... [VP]
  ... Walther, Materials and Techniques of Painting (1982) 210
- glues, animal......... [VP]
  ... Getty Vocabulary Program
  ... Getty Vocabulary Program

**Subject:** .... [VP]

**Note:** .... [VP]
Term Record Example 2c

Research

Displays: Alphabetical

- Similar to a back-of-the-book index
- Alphabetical list of all preferred terms
- Can also list non-preferred terms, with USE pointers to preferred terms
Alphabetical Example 2a

Grove Art Online
for all aspects of the visual arts worldwide

Article Abbreviations Contributors Index

A, Painter
Aa, Dirk van der
Aa, Jan van der
Aa, van der (family)
A.A.A. see Allied artists' association; American abstract artists
A.A.A. Anderson Galleries
A.A.A. Gallery
Aachen
Aachen, Hans van (1652-1655)
Aachen, Johann von (1540)
Aachen Altar; Master of the
Aachen Gospels; see under Gospel books → individual manuscripts; Gospel books → individual manuscripts
Aachen Stadt
AACS see Anglo-American Cataloging Rules

Alphabetical Example 2b

Back To Index

- Aachen
  - art forms and materials
  - Cathedral see Palace à Palatine Chapel
  - Couven Museum
  - foundry
  - Gateway
  - Ludwig Forum für Internationale Kunst
  - Ludwig-Stiftung für Kunst und Internationale Verständigung GmbH
  - Neue Galerie
  - Palace
Alphabetical Example 2c

Back To Index

- Aachen
  - Palace
    - Palatine Chapel
    - Royal Hall
  - see also Rathaus
- Treasury see under
- weathervane

Displays: Hierarchical

- Display terms within the context of the hierarchy
  - Category lists that can be drilled into
  - Starting at the top and listing all children
- Typically lists only preferred terms, no non-preferred

TESTING
  - Aerospace testing
  - Aircraft testing
  - Electronic equipment testing
  - Circuit testing
  - Integrated circuit testing
  - Printed circuit testing
Hierarchical Example 1a

UNESCO Thesaurus: hierarchical list

3. Culture

3.05 Culture
3.15 Culture policy and planning
3.16 Philosophy and ethics
3.20 Religion
3.25 History
3.30 Linguistics
3.35 Languages
3.40 Literature
3.90 Visual arts
3.55 Performing arts
3.90 Museums
3.06 Leisure

Hierarchical Example 1b

3.55 Performing arts

Cinema

Narrower Term
- NT1 Cinema attendance
- NT1 Film festivals
- NT1 Film industry
- UF Film distribution, Film production, Movie industry
- NT1 Film making
- UF Cinematography
- NT2 Film scripts
- NT1 History of cinema

Dance

Used For
- UF Choreography

Narrower Term
- NT1 Ballet
- UF Classical ballet
- NT1 Modern dance
- NT1 Traditional dance
- UF Folk dance
Hierarchical Example 2

Using the Hierarchical View of Terms:

You can navigate through the terms by clicking the arrows at the top of the display. Clicking a term will expand the first level of terms under the upper level term and bring up the record that contains information on the term. Clicking the other level terms will expand the next level of terms. For instance, to view the term "Nonprofit Organizations," click the term. To view the term "Nonprofit Organizations," click the term. To view the term "Nonprofit Organizations," click the term. To view the term "Nonprofit Organizations," click the term.

Hierarchical Example 3a

Search in Category Home: Include sub-categories

CATEGORIES

Audiences

Students

NASA History

History Office at NASA Centers, NASA History, NASA History

Businesses

NASA Center Commercial and Technology Transfer

Offices, NASA Center Procurement Offices, NASA Center Small Business Innovation Research Offices

NASA Missions and Projects

Flight Research, Human Exploration, Robotics

Missions...

Organizations

NASA Center Commercial and Technology Transfer

Data Center, Astrophysics Data

Source note:
Hierarchical Example 3b

**CATEGORY SEARCH**
Category Home > **NASA Missions and Projects**

Search in: NASA Missions and Projects

+ Go

**CATEGORIES**
- Flight Research (32357)
  + Humans in Space (72509)
  - Robotics Missions (123)
  - Solar System Exploration (80488)

Hierarchical Example 3c

**CATEGORY SEARCH**
Category Home > NASA Missions and Projects > **Humans in Space**

Search in: Humans in Space

+ Go

**CATEGORIES**
- Apollo (5428)
  + Apollo-Soyuz (359)
  + **Astronauts** (40805)
  + Gemini (1097)
  + International Space Station (ISS) (35428)

+ Mercury (573)
  + Shuttle-Mir (10520)
  + Skylab (2826)
  + Space Shuttle (19852)
Hierarchical Example 3d

**CATEGORY SEARCH**
Category Home > NASA Missions and Projects > Humans in Space > International Space Station (ISS)

Search in: International Space Station (ISS)
Include sub-categories

**RESULTS**
Documents: 1 - 10 of 206 returned
- Prev | 1 2 3 4 5 | Next

NASA - NASA Selects International Space Station Managers
NASA Selects International Space Station Managers

NASA - NASA Names International Space Station Program Manager
William H. Gerstenmaier Selects Michael Suffredini to Manage ISS Program

Hierarchical Example 4a

MeSH is NLM's controlled vocabulary used for indexing articles for MEDLINE/PubMed. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

- Use the MeSH database to find MeSH Terms and build a search strategy.

MeSH database tutorials:
- Searching with the MeSH Database
- Quick Tour
Hierarchical Example 4b

MeSH Tree Structures

- Musculoskeletal Diseases [C05]
  - Foot Deformities [C05.330]
    - Flatfoot [C05.330.448]
    - Foot Deformities, Acquired [C05.330.448] +
    - Foot Deformities, Congenital [C05.330.495] +
    - Hallux Valgus [C05.330.610]
    - Hallux Varus [C05.330.612]
    - Hammer Toe Syndrome [C05.330.612]

Displays: Visual

- Some visual organization of the terms via their relationships
  - Tree graphs - family tree
  - Topic maps - clouds of terms
- Difficult to implement well
- Good for visual users!
Visual Example 1

I want to:  

The world wants to...
Write an autobiography  play in the rain
stop being afraid  stay safe
be nice  chill out
more  go vintage clothes shopping
fix my back  learn to can fruits and vegetables
breathe  become a personal trainer
visit Italy  be happy with my body
get out of debt  write a novel
live in Paris
Matt wants to make a successful website
that I don’t need  finish what I start
organize my life
Kiss in the rain  clean out everything from my room
thanDean wants to get Democrats elected to Congress
in 2009, restore balance of power
explore the world  finish graduate school
I don’t know  laugh as much as possible
watch family guy online

Visual Example 2

26
Visual Example 4b

Displays: Systematic

- A systematic view is some combination of views to allow multiple means of access
- The best of all worlds!
**Systematic Example 1**

**Thesaurus**

**Browse Thesaurus Alphabetically**

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J
- K
- L
- M
- N
- O
- P
- Q
- R
- S
- T
- U
- V
- W
- X
- Y
- Z

**Browse Thesaurus By Category**

- Agriculture and Natural Resources
- Arts
- Business
- Education
- Family, Children, and Youth
- Government
- Health
- History
- Language
- Learning
- Libraries
- Management
- Mathematics
- Mental Health
- Music
- People and Culture
- Physical Education and Recreation
- Philosophy
- Planning and Policy
- Politics
- Prayer and Religion
- Psychology
- Science
- Social Science
- Technology
- Theology
- Women

**Systematic Example 2a**

**UNESCO Thesaurus**

This web site allows you to browse the UNESCO Thesaurus. It also provides information about the UNESCO Thesaurus. To search the UNESCO Thesaurus, please use the search function which is available on the UNESCO website.

1. About the UNESCO Thesaurus
2. Searching the UNESCO Thesaurus
3. Using the UNESCO Thesaurus
4. About this web site
5. Copyright statement

1. About the UNESCO Thesaurus

The UNESCO Thesaurus is a controlled vocabulary developed by the United Nations Educational, Scientific, and Cultural Organization, which includes subject terms for the following areas: education, social, culture, science, human sciences, information and communication, and politics, law and economics. It also includes the names of countries and groupings of countries: political, economic, geographic, ethnic and religious, and linguistic groupings.

The UNESCO Thesaurus allows subject terms to be expressed consistently, with increasing specificity, and in relation to other subjects. It is used to facilitate subject indexing in libraries, archives and similar institutions.

As in other thesauri, the terms in the UNESCO Thesaurus are linked together by these types of relationships:

- Hierarchical relationships, which link terms to other terms expressing more general and more specific concepts, i.e., broader terms and narrower terms. Hierarchically related terms are grouped under general terms. Known as "hierarchical", which is in turn organized into the areas of knowledge covered by the Thesaurus. In the UNESCO Thesaurus, broader terms are indicated by the prefix "broader" or narrower terms by the prefix "narrower" or "more specific than the term in the hierarchy. Related terms are indexed by the prefix "related".
- Associative relationships, which link terms to similar terms (related terms) where the relationship between the terms is not hierarchical. Included are: terms related by the prefix "related".
- Explicative relationships, which link "more profound" terms to synonyms or related terms which act as "explanations".
Systematic Example 2b

UNESCO Thesaurus: alphabetical list

This page allows you to search the UNESCO Thesaurus alphabetically. Each group of 40 terms links to the terms in that group. The list includes preferred terms and non-preferred terms. The following abbreviations are used: BT (broader term), FT (finer term), PT (preferred term), NT (narrower term), MT (microthesaurus heading), RT (related term), SN (scope note), SP (Spanish equivalent), UF (unPreferred term). Terms which are synonyms (e.g. UK) and compound terms which begin with a synonym (e.g. ADS education) are listed at the start of their alphabetical section, rather than in alphabetical order.

Return to UNESCO Thesaurus Home Page.

Abandoned children - Accessibility of information
Accessions - Admission requirements
Aid programme - Africa
After school activities - Agricultural prices
Agricultural production - Animal
Allergy - Animal feeding
Animal genetics - Apiculture

Systematic Example 2c

UNESCO Thesaurus: hierarchical list

This page allows you to search the UNESCO Thesaurus hierarchically, in the following way:

- The seven main sections of the Thesaurus link to the microthesaurus headings in each section.
- Each microthesaurus heading links to an alphabetical list of the preferred terms which are entered under that microthesaurus heading.
- Each term includes a link to a display of its broader terms, narrower terms, related terms, scope notes, non-preferred terms, French equivalent and Spanish equivalent.

Return to UNESCO Thesaurus Home Page.

1. Education
2. Science
3. Culture
4. Social and human sciences
5. Information and communication
6. Politics, law and economics
7. Countries and country groupings

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Systematic Example 3c

Displays: Permuted Index

- Separate listing for every word in every term with pointers to the full compound term
  - Twist on the alphabetical display
  - Mainly used for compound terms
- Typically part of a systematic display
  - Serves as an index to the thesaurus
Permuted Index Example

---

**Definitions:**
- **Alphabetical List** - displays a list of main terms with no indication of relationships; enter a word or phrase to search the alphabetical list.
- **Hierarchy** - displays all terms that have relationships with the found item (e.g., broader and narrower terms) plus any explanatory notes; enter a word or phrase to search the hierarchies.
- **Rotated Index** - displays all terms that contain the found single word, plus related terms; enter a single word to search. This is often the best place to start your thesaurus search; remember to begin by entering one word.

---

### Environmental tests

### Environmental Trusts

### Integrated environmental assessment

### Protest, Environmental
Keyword in Context Example

Technorati

Search for longtail anderson

Home / Search / Results for longtail anderson

390 results from all blogs with any authority

Keyword in Context Example

Faux Granite Video

2 days ago in SalesTail Because niche isn’t always kitsch - 0 blog links here

Show details

links for 2006 08 25

2 days ago in Micro Persuasion by stevemibus - 0.728 blogs link here
Wired News: IPhone Leap From Geeks to Teen Interview with Woz about his new book (dogs, woz apple)... Steve and Chris Anderson, author of the Long Tail (tags: LongTail 37Signals Yahoo) TechCrunch UK

Show details
User/Indexer Views

- A CV is layered over the data
- Potentially a user does not need to see the CV guts
- The indexer may need to see more of the admin info than the user
- How can both be accommodated?

User Interface

Controlled Vocab

Data & Structure

User/Indexer View Example

Charles W. Cushman Photograph Collection

Charles Weaver Cushman, amateur photographer and Indiana University alumnus, bequeathed approximately 14,500 Kodachrome color slides to his alma mater. The photographs in this collection bridge a thirty-two year span from 1938 to 1960, during which time he extensively documented the United States as well as other countries.

Indiana University's Digital Library Program and the Indiana University Archives invite you to explore what Cushman saw. Here you can view his photographs as well as read contextual information about Cushman's life and work.
User View

Browse the Cushman Collection

Year
Browse photographs chronologically by calendar year.

Location
Browse photographs by geographic location.

Subject
Browse photographs by subject or topic matter.

Genre
Browse photographs by a particular style, form, or general content.

Notebook
Browse the notebooks in which Cushman documented his photographs.

User View

Browse by Subject

Select a letter above to browse subject terms.
**User/Indexer View**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodian ID</td>
<td>1414</td>
</tr>
<tr>
<td>Archival ID</td>
<td>FS2346</td>
</tr>
<tr>
<td>Date</td>
<td>Aug. 21, 1941</td>
</tr>
<tr>
<td>Description (Slide)</td>
<td>Wigwam and Tribute towers from Walker and Wrigley</td>
</tr>
<tr>
<td>Street Address</td>
<td>East Wacker Drive, North Wacker Avenue, North Michigan Avenue</td>
</tr>
<tr>
<td>Location</td>
<td>Chicago, Illinois, United States (Cook county)</td>
</tr>
<tr>
<td>Camera Settings</td>
<td>(None)</td>
</tr>
<tr>
<td>Roll Number</td>
<td>18-59</td>
</tr>
<tr>
<td>Frame Number</td>
<td>4</td>
</tr>
<tr>
<td>Personal Names</td>
<td>(None)</td>
</tr>
<tr>
<td>Corporate Names</td>
<td>Wrigley Building (Chicago, IL) \ Tribune Tower (Chicago, IL)</td>
</tr>
<tr>
<td>Other Names</td>
<td>(None)</td>
</tr>
<tr>
<td>Genre Headings</td>
<td>Chicago photographs</td>
</tr>
<tr>
<td>Subject Headings</td>
<td>Buildings, Clocks, Landmarks, Street Light, Architectures, Texts</td>
</tr>
</tbody>
</table>

**Index View**

Cushman's notebook annotations and corresponding documentation on slide mounts have been exactly transcribed, even when abbreviations or misspellings are included. These descriptions are keyword searchable. Dates associated with the slides are also searchable. In addition, descriptive metadata for the subject content, geographic location, genre and physical characteristics of each image provides enhanced access to the collection. Terms have been selected from the following controlled vocabularies:

Library of Congress Thesaurus for Graphic Materials

The Library of Congress Thesaurus for Graphic Materials (TGM) and Thesaurus for Design Materials (TDM) and Physical Characteristics Terms (TGM P) include subject headings developed by the Library of Congress Photo and Photograph Division through the past three decades. TGM is the cataloging tool created to meet the needs of photographic collections. TDM is used to describe a wide range of materials, from textiles to metal. The American National Standards Institute/National Information Standards Organization (ANSI/NISO) was established in 1998, and in 2007, both thesauri were revised and are now available online.

**Subject Terms (TGM)**

TGM E contains more than 4,300 terms and approximately 5,000 cross-references. The thesaurus includes terms for objects, activities, occupations, events and concepts represented in visual resources. TGM E is updated regularly, with several hundred new terms added annually. Cataloguers have selected applicable terms from TGM E to describe prominent subjects and themes. Examples include appropriate terms for subjects (e.g., poverty, happiness, anger) and cross-references. The thesaurus for design materials (TDM E) contains more than 800 terms and more than 450 cross-references for documenting categories of visual resources as well as the processes.
**Index View**

**Cataloging & Digitizing Toolbox**

Cataloging Tools
- The Library of Congress trophy and Home page
- Cataloging & Digitizing Toolbox
- Find
- Index View
- Prints & Photographs Reading Room
- Library of Congress Prints and Photographs Reading Room
- Prints and Photographs Reading Room
- Prints & Photographs Reading Room
- Prints and Photographs Reading Room

**Cataloging Tools Produced by the Prints and Photographs Division**

- **Thesaurus for Graphic Materials I: Subject Terms** - Thousands of subject terms and cross-references, as well as guidelines for indexing graphic materials and illustrative examples.
  - PDF file
  - TGM I integrated with catalog and hierarchical subject access: see the Charles W. Clark
  - Digital Photographs Collection catalog at the University of Indiana
- **Thesaurus for Graphic Materials II: Term and Physical Characteristic Terms** - Terms and cross-references forming distinctive categories of graphic material such as posters, landscapes, and family trees. Includes subject such as shape and size. Includes indexing guidelines and illustrative examples.
- **Graphic Materials, Notes for Describing Original Items and Historical Collections** — Guidelines for cataloging photographs, cartoons, popular and fine prints, architectural drawings, and other visual materials, includes many sample records and MARC encoding for individual items and archival groups.

**How to Tip Sheets**

The tip sheets are handouts or teaching aids that address topics frequently asked about by librarians and archivists working with pictorial materials. New tips will be added as needed.

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**Index View**

**Thesaurus for Graphic Materials I: Subject Terms (TGM I)**

Compiled by Prints and Photographs Division

Library of Congress

A thesaurus of over 6,000 terms for indexing visual materials, as well as numerous cross-references. New terms are added regularly. TGM I is a companion document to the Thesaurus for Library Materials in Prints and Photographs: Thesaurus (TGM II). This interface employs Java script, which may not be fully supported by older browsers.

Introduction to TGM I: Table of Contents

Last revised, 1995

Acknowledgments

Introduction
- 1. TGM I: Summary of Features
  - 1.A. Scope and Purpose
  - 1.B. Term Selection and Formulation
  - 1.C. Headers and Syntax
  - 1.C.1. Relationships
  - 1.C.2. Syntax
  - 1.C.3. Fleet Indicators
  - 1.C.4. Notes
  - 1.C.5. Filing取暖

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Cataloging for the 21st Century

Course 3: Controlled Vocabulary & Thesaurus Design
Index View

The Thesaurus for Graphic Materials II, Genre & Physical Characteristic Terms (TGM II)
Compiled by Prints and Photographs Division
Library of Congress

A thesaurus of more than 6200 terms for types of photographs, films, design drawings, and other printed materials. New items are added regularly. Developed by the Library of Congress Prints and Photographs Division with input from other archival image repositories, the Thesaurus for Graphic Materials II, Genre and Physical Characteristic Terms (TGM II) contains over 6200 entries. The thesaurus has been revised, and a new version, TGM 2.0, has been released.

Acknowledgments

Introduction
I. Background
II. Scope and Purpose
III. System and Structure

Index View

The Getty Thesaurus of Geographic Names Online

Search the TGN
Find Name:
Place Type:
Nation:

Related Sections
* Learn about the Getty Vocabularies
* Contribute to the Getty Vocabularies
* Frequently Asked Questions
* Getty Vocabularies Download Center
* Editorial Guidelines
* See Also
* AAT
* ULAN

Copyright Information

Search Tips
For the Find Name field, you may use AND or OR (e.g., 1 san carlos, 2 carlos OR charles, 3 car* OR char*, 4 san AND carlos, 5 carlos AND (san OR saint), 6 (carlos OR charles) AND (san OR saint))

Boolean operators must be in all caps (AND and OR).
Index View

Displays: Discussion

- What displays did you like?
- Which would be most helpful to your user?
- What thesauri have you used before and how was your experience?
- Print or web?
Controlled Vocabulary & Thesaurus Design
Planning & Maintenance

Controlled Vocabulary Review

- **What?**
  - What Controlled Vocabulary is right for you?
- **When?**
  - When should the CV be developed and implemented?
- **Why?**
  - Why is this CV a necessary development project?
- **How?**
  - How is the CV going to be developed?
Thesaurus Design Questions

- Is a controlled vocabulary really necessary?
- What is the lowest level of vocabulary that will get the job done?
- Will natural language searching be sufficient?
- Will an interface design improvement alleviate the need for a controlled vocabulary?
- Will there be more than one indexer?
- Is someone available with the time and the skills to develop a thesaurus?
- Will someone be available in the future?

Project Justification

- Cost of finding (time, frustration)
- Cost of not finding (bad decisions)
- Cost of training (staff turnover)
- Value of discovery (related information, browsing)
- Language is ambiguous - synonyms, abbreviations, acronyms, misspellings, homonyms, antonyms, etc.
Project Justification

- What are the specific objectives of the project?
- Are essential objects hidden in a lot of chaff?
- Are a few good objects sufficient? Or is it necessary to find the best, the one that makes a difference, or everything on a topic?
- Use easily understood terms like common *vocabularies* rather than technical terms like *taxonomies*.
- Stories tell it best.

“Users of ... intranets frequently express frustration with how much time it takes to find items—both when searching for known items and when browsing to see if items on a particular topic exist in the system. . . Browsing and search functions are much enhanced if the indexing and topic hierarchy, or taxonomy, make sense to the user and are customized to reflect the content of the source documents.” Jan Sykes, Information Management Services, February 2001
Project Justification

- “Power users find great value in using a known, granular indexing language that can surface the most relevant items and filter out items of peripheral or no interest.” Jan Sykes, Information Management Services, February 2001

- “Keyword search captures only 33% of relevant information.” Chris Wilkie, BBC Information and Archives, Sept. 2002

Project Justification

- “Most of the complaints we get are due to the way users search – they use the wrong keywords.” Must search stink?, Forrester, 2000

- “40% of search failures come from customers and information providers using different terms.” The Business Benefits of Taxonomy, Judi Vernau, SchemaLogic, Oct. 2005
Project Justification

- “Knowledge workers spend 35% of their productive time searching for information online, while 40% of the corporate users report that they cannot find the information they need to do their jobs.” Working Council of CIOs, Business Week, Feb. 27, 2001

Process of CV Design

- Understand user and organizational needs
- Define the subject scope
- Identify sources of ‘raw’ vocabulary
- Harvest terms (wordstock) that are likely to be search terms in the field
- Group the terms into broad categories, subcategories and sub-subcategories
- Establish relationships
- Collect feedback and revise until stable
Who are the users?

- How expert are they in the field?
- Do they understand the use of thesauri?
- Do they prefer natural or controlled vocabulary?

Defining Scope

- Core topics immediately pertinent to the main subject (most terms, more specific)
- Fringe topics supportive of the main area (fewer terms, less specific)
- Other
  - Include proper names?
  - Display?
  - Printed? Online?
Literary vs. User Warrant

- Identify sources for the raw vocabulary
- Sample literature read (etc.) by users
- Sample general literature (conference proceedings, core journals)
- Sample user questions
- Existing thesauri, dictionaries, encyclopedias
- Titles, abstracts of articles in the field

Refine the raw vocabulary

- Be sure terms are acceptable to users
- Distinguish among words with different meanings
- Give instruction, clarify how terms should be used, add scope notes
- Construct and identify facets
- Check and add relationships
## Involving Users

- More user involvement = better suited to use
- Take every opportunity to involve users
  - Start from user search logs to find commonly used terms
  - User experience focus groups
  - Prototyping
  - Solicit community feedback
  - Online discussion groups
  - Surveys
  - Observation
  - Term submissions

## Interoperability

- Searchers want to search multiple databases at once
- Indexers want to use a vocabulary they are familiar with to index objects in a different domain
- Content producers want to merge multiple databases indexed using different vocabularies
- User communities want a single thesaurus that spans multiple domains
- International organizations want a single vocabulary that supports searching in multiple languages
Thesauri can differ in:

- Specificity
- Treatment of synonyms
- Pre- vs. post-coordination
- Relationships
- Warrant
- Scope

Methods of Integration

- Mapping
- Switching language
- Integration
  - Unified Medical Language System's (UMLS) 3 main components:
    - Metathesaurus ↔ concepts
    - Semantic Network ↔ categories
    - SPECIALIST Lexicon ↔ indices
- Super-language
- Merging
Simple Knowledge Organization System

Term: Economic cooperation
UF: Economic co-operation
BT: Economic policy
NT: Economic integration
European economic cooperation
European industrial cooperation
Industrial cooperation
RT: Interdependence
SN: Includes cooperative measures in banking, trade, industry etc., between and among countries.

prefix skos: <http://www.w3.org/2004/02/skos/core#>
'Economic cooperation'

Includes cooperative measures in banking, trade, industry etc., between and among countries.

European economic cooperation

SKOS

<rdf:RDF
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:skos="http://www.w3.org/2004/02/skos/core#" xmlns:xsd="http://www.w3.org/2000/01/XMLSchema#">
  <skos:Concept rdf:about="http://www.ukat.org.uk/thesaurus/concept/1760">
    <skos:prefLabel>"Economic cooperation"</skos:prefLabel>
    <skos:altLabel>"Economic co-operation"</skos:altLabel>
    <skos:scopeNote>Includes cooperative measures in banking, trade, industry etc., between and among countries.</skos:scopeNote>
  </skos:Concept>
</rdf:RDF>
Testing & Evaluation: Methods

- **Heuristic Evaluation**
  - Evaluation by an expert or a panel of experts
- **Affinity Modeling**
  - Task a sample of users with organizing your terms
  - Compare to your own organization of the terms
- **Usability Testing**
  - Holistic evaluation of the information system, including the content, interface, etc.

Testing & Evaluation: Discussion

- Why test a controlled vocabulary?
- What are some useful criteria for evaluating a controlled vocabulary?
Upkeep & Maintenance

- Controlled vocabularies as living entities needing
  - New material added
  - Outdated material removed
  - Changes made
- Requires a long-term maintenance plan
  - Institution support and resources
  - Someone who is a maintainer
- Look to your users for input!
  - Term submissions
  - Search logs
- Anticipate change!

Front Matter Exercise

- Given the thesaurus you devised in the earlier sections, write the appropriate front matter:
  - Title
  - Introduction
  - Users/scope
  - How to use
  - Term submission/schedules
- Please use this sample front matter to start from
Front Matter Discussion

- How does this front matter address the planning aspects of the thesaurus development?
- How does this front matter address the maintenance aspect?
Controlled Vocabulary & Thesaurus Design

Resources & Future Directions

Thesaurus Design Software

- Comprehensive list of Thesaurus Software
  - http://www.willpower.demon.co.uk/thessoft.htm
- Comparison of Thesaurus Software
  - http://www.willpower.demon.co.uk/thestabl.htm
A Cautionary Note

- Thesaurus software
  - A tool for developing thesauri
  - Analogous to the functionality of a word processor for writing a book
  - Unfortunately will not do all of the work for you
- That said, it is always good to have the right tool for the job!

Example 1: TCS-10

TCS-10 provides you with an exhaustive range of tools to develop controlled vocabularies (thesauri, classification schema, topic maps, etc.) inexpensively and efficiently, and easily to transform any controlled vocabularies into browsable and linkable hierarchies. TCS-10 constitutes the first tier (Build and Transform) of WebChoir’s three-tier end-to-end solution.

ViewChoir for TCS-10

ViewChoir easily supports publication of your thesaurus and other controlled vocabularies (CVs) on the Internet/Intranet/Extranet or on a CD, to enable the your clientele to participate in collaborative building of controlled vocabularies with their candidate term submissions to enhance your CVs and to greatly enhance their online searching on the Internet/Intranet/Extranet through utilization of your browsable CVs.
Example 1: TCS-10

**LinkChoir for TCS-10**

LinkChoir enables you to integrate any browseable controlled vocabularies, either created or transformed by TCS-10, with a variety of information sources for classification and indexing by linking the terms in your CVs with fielded records in your data warehouses. ViewChoir and LinkChoir form the second tier (Enhance and Index) of WebChoir’s three-tier end-to-end solution.

**SeekChoir for TCS-10**

SeekChoir enables your clients to create simple to complex search strategies to retrieve precise information throughout the Internet/intranet/extranet and/or data warehouses using keywords and/or browseable XML-based controlled vocabularies that are either created or transformed by TermChoir. SeekChoir makes up the third tier (Search and Retrieve) of WebChoir’s three-tier end-to-end solution.
Example 1: TCS-10

Hierarchy Code: DL

Hierarchy Position:
  - Color properties

Class Notation: DL 00.00.07-02

Scope Note:
The hue of a pigment, used as a pile of dry powder or dispersed in a vehicle and spread out

Example 1: TCS-10

Hierarchial List of Artist Names

Name: Chabas, Maurice (1877-1952)

Status: Main Term

Chabas: Born 1877

BT Type: BT

BT: Union List of Artist Names

VAR: Chabas

Maurice Chabas

Source: *Biograph
  *Univ. of Cong. Name Auth. File, 9/80
  *Shaw's Biog

EGN: 081

DIA: F.R:

LIFESPAN: 1877-1952

UPNAME: 2130

UPROLE: artist

UNAM: 0832

Cataloging for the 21st Century
Course 3: Controlled Vocabulary & Thesaurus Design
Example 2: LinkFactory
Example 2: LinkFactory

Example 3: TemaTres

Hierarchical list
- Art
- arts
- Australia
- BASE DE DATOS
- BM
- Cálculo de probabilidad
- célula
- chêmage
Example 3: TemaTres

TemaTres

Menu
- Hierarchical list
- Alphabetic list
- About...

Alphabetic list

A · B · C · D · E · F · G · H · I · J · K · L · M · N · O · P · Q · R · S · T · U · V · W

Letter A: 68 terms.

- acepto
- Acidos y bases
- Actividades burgeriles
- Actividades economicas
- Actividades anuales
- Adjetivos
- Administracion de la educacion
- ADMINISTRACION
- ADMINISTRACION DE BIBLIOTECA
- ADMINISTRACION DE LA DEMANDA

Example 3: TemaTres

TemaTres

Menu
- Hierarchical list
- Alphabetic list
- About...

Options
- Edit Term
- Notes Editor
- Subordinate the Term

Add
- Subordinated Term
- Non preferred Term
- Related Term

[EDIT NOTE] Continent and country in the southern hemisphere, represents the world's largest island.

Australia

[EDIT LEVEL] Occurs under

[EDIT CODE]

Australia

[EDIT LEVEL] Pref

Queensland

[EDIT LEVEL] Date of creation: 11-Jun-2006
MultiTes Demo: New Project

MultiTes Demo: New Term 1
MultiTes Demo: New Term 2

MultiTes Demo: New Term 3
MultiTes Demo: New Terms 1

MultiTes Demo: New Terms 2
MultiTes Demo: Term Record 4

MultiTes Demo: Term Record 5
MultiTes Demo: Term Record 8

MultiTes Demo: Term Record 9
MultiTes Demo: Relationships 2

MultiTes Demo: Relationships 3
MultiTes Demo: Relationships 4

MultiTes Demo: Relationships 5
MultiTes Demo: Alphabetical 1

MultiTes Demo: Alphabetical 2
MultiTes Demo: Rotated 1

MultiTes Demo: Rotated 2
MultiTes Demo: Rotated 3

MultiTes Demo: Discussion

- Would this product make the conceptual organization of terms an easy task?
- Who is this software made for?
- What could make this a better tool?
- What do you need from your thesaurus software?
More Cautionary Notes

- The true work of controlled vocabulary design is the collection and intellectual organization of terms!
- Developing a controlled vocabulary is like taking a still photo, while reality is a movie!
- Indexer consistency studies
- Controlled vocabulary vs. free-text search studies
- Folk classification

The Future of Controlled Vocab

- Integrated ILS and thesauri
- The semantic web
  - Goals
    - Make semantic relationships machine-readable
    - Distributed database platform
  - Combined sets of semantic relationships = Semantic Web
  - Some XML based technologies
    - RDF - Resource Description Framework
    - OWL - Web Ontology Language
    - RSS - Really Simple Syndication
  - Ex. MARCXML
Continuum of Vocabulary Control

List | Synonym Ring | Hierarchy | Thesaurus

Less Complexity More

Ambiguity Control | Synonym Control | Ambiguity Control | Synonym Control
Hierarchical Relationships | Ambiguity Control | Synonym Control
Hierarchical Relationships | Ambiguity Control
Associative Relationships

A Terminology Challenge

Information Science Domain
Controlled Vocabulary

Business Domain
Taxonomy

Computer Science Domain
Ontology
Changing Definitions

- When the standard was published
  - Ontology = Taxonomy = Hierarchy
- Now...
  - Taxonomy = Controlled Vocabulary = Ontology
- Expect it to continue to change!

Taxonomies are Everywhere

- Especially in product websites
- Examples include
  - Yahoo!, Amazon, HomeDepot, etc.
- To see them you need to just look around
Ontologies

- Part of the Semantic Web suite of technologies
- Ontologies are:
  - Published in a Namespace (like a URL)
  - Consist of Objects, Associations, and Instances
- Completely analogous to Controlled Vocabularies
  - Terms, Relationships, Application of the term to some Thing

Topic Map Model

(Index)

Knowledge Layer

(Content)

Information Layer
The Knowledge Layer

- The upper layer consists of topics and associations
  - Topics represent the subjects that the information is about
  - Associations represent relationships between those subjects

---

The Information Layer

- The lower layer contains the content
  - Usually digital, but need not be
  - Can be in any format or notation
  - Can be text, graphics, video, audio, etc.
Relational Schema for Topic Maps

Ontology Crosswalks

EnvML

... 
Time
Latitude
Longitude
Altitude
...
Species
...
Environment

SensorML

Timestamp
...
X
Y
Z
Sensor
Precision
...
Mote
Resources Available

- List of thesauri
- Thesaurus construction guide
  - http://www.willpower.demon.co.uk/
- Course materials - for updated slidesets
  - http://www.moebiustrip.org/CV/
- More on the Semantic Web
  - Spinning the Semantic Web, by Fensel et al
    http://w5.cs.uni-sb.de/teaching/ss03/SemanticWebHTML/
    Vorlesung%20SemanticWebSS03/Introduction.pdf

Course Goals

- Understand and apply fundamental concepts of controlled vocabulary and thesaurus design, and why they are important
- Understand and apply diverse types of term relationships to structure descriptive terms
- Understand and apply both basic rules and best practices from existing thesauri to the construction and maintenance of thesauri and controlled vocabularies
- Develop a basis for exercising individual judgment for making thesaurus and controlled vocabulary decisions
Wrapping up

- Any last questions?
- Course evaluations
Exercise 1 Handout

A 1921 view of the Citrus Exchange Building (611-622 Franklin Street)/Maas Brothers department store (612-622 Franklin Street) at the corner of Franklin and Zack Streets in Tampa, Florida. Maas Brothers department store occupies the lower floors of what is primarily an office building in the downtown area. Cars are parked in varying configurations on the two streets and a bicycle and three pedestrians are in view. The top of a streetlight is in the foreground. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00006557

The 1921 home of Max C. Gill at 710 South Delaware Street in Tampa, Florida. The house is a brick bungalow in the craftsman style with a porch, tile roof, porte cochere, and detached garage. A lamppost stands at the driveway entrance. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00005715

The Stovall Office Building at 416 Tampa Street, Tampa, Florida, 1950. Retail business occupy the ground floor. Automobiles and pedestrians are in view. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00053051.

Pedestrians and motor traffic move through the intersection of Franklin and Zack Streets in downtown Tampa, Florida, 1929. A three story office and retail business building is featured and a traffic light is visible. Businesses in the view are Don Thompson Radio Fixtures and Appliances, Home City News Stand, Peeler’s Men Shop, and William’s Corner. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000242
The Economical Drug Store on the ground floor of the Stovall-Nelson Building at 817 Franklin Street in Tampa, Florida. The view shows the main entrance from a busy sidewalk busy with pedestrian traffic. One sign advertises Coca-Cola and another proclaims “This is not a chain store”. 1929. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00029362

The Home of Val Antuono. (4024 Bay to Bay Boulevard cor Clark Street) in Tampa. Note the Spanish-style architecture, paved street, and street lights. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00032392

Three women and a small dog look across Tampa Bay from the Venetian Apartments courtyard in Tampa, Florida. The courtyard is enclosed by an open work cement wall with a decorative wrought iron gate leading to a boat slip. Ornate lamp posts top the columns on either side of the gate. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00022457

St. Mary's Catholic School-Sinai Hebrew Synagogue, 209 North Henderson Street, Jefferson, Marion County, TX. Interior of synagogue looking toward balcony and main entrance. Call Number: HABS TEX,158-JEF,14-. Collection: Historic American Buildings Survey (Library of Congress). Reproduction Number: HABS TEX,158-JEF,14-
A House in Parkland Estates on Lisbon Avenue later known as MacDill Avenue. Photo taken August 7, 1941; house owned by Zola E. Hagadorn (804 MacDill Avenue). A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015728

Traffic rushes past the Hotel Hillsboro on Florida Avenue in Hillsboro, Fla. Businesses shown include Floridan Flower Shop (905 Florida Avenue), Hillsboro Hotel (512 Florida Avenue corner of Twiggs Street), Powell’s Flower Shop (505 Florida Avenue), and the Sunshine Laundry (503 Florida Avenue). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-

The Elks Club (425 Florida Avenue) and the Union Bus Station (703 Cumberland Street) ca. 1920s when both streets were paved with brick. The automobiles are parked in front of the bus station. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000361

The Hyde Park Presbyterian Church (later the Tampa Heights Presbyterian Church) (602 East Palm Avenue). A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-v-00000526 The Italian Club, or L’ Unione Italiana Club (1725 East 7th Avenue) in Ybor City, Fla. Also shown are the street railroad tracks and power lines, brick paving, and automobiles. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000365
The Italian Club, or L’ Unione Italiana Club (1725 East 7th Avenue) in Ybor City, Fla. Also shown are the street railroad tracks and power lines, brick paving, and automobiles. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-0000365

The Times Building on Franklin and Washington Streets in Tampa on January 30, 1923. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00008511

The Tribune Building on Tampa Street (602 Tampa Street cor Twiggs Street) on March 15, 1923. Note the delivery truck at the loading dock. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00008758

A house in Parkland Estates subdivision on Simms Boulevard on August 3, 1941. The house (2701 Simms Boulevard) is owned by Harry C. Quarles. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015733
The German-American Club (6011 North Rome Avenue) in Ybor City, Fla. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00004247


Luray Inn (Shenandoah Valley, Va.) color advertisement poster from early 1900s. Source Collection: Advertising Ephemera Collection. Reproduction number: A0596


The Sears Roebuck and Company of Tampa, Florida exhibit at the 1938 Ruskin, Florida Tomato Festival at night. Merchandise available from the company is shown: bicycles, refrigerators, kitchen stoves, tires, a washing machine, a lawn chair, furniture, and a radio. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00011727
Exercise 2 Handout

View of a trolley driving on the Milwaukee and Racine electric road between Lake Bluff and Libertyville, Illinois in 1908. This image shows the trolley driving through a rural landscape with many electrical wires overhead. This image was taken as part of a Chicago Railways Company Trolley Trip. Cite as: DN-0006821, Chicago Daily News negatives collection, Chicago Historical Society.

The intersection of Franklin and Twigg Streets in downtown Tampa, Florida during the 1940s. Trolley car tracks are shown in an intersection busy with foot and vehicular traffic. Includes views of these retailers:

Madison Drugs, Resnick’s Cafeteria, Alvin Magnon Jewelers, Tampa Theater, Maas Brothers, and Darling Department Store. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00002376

The Orange Pharmacy on Grand Central Avenue in Tampa, Florida viewed on August 14, 1921. In addition to prescription services, the pharmacy sells liquor and has a luncheonette. The building’s façade has a Spanish architectural details with tile accents. A black and white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00015791.
Women dressed for La Verbena Del Tabaco Festival outside a window at the El Pasaje Hotel and Restaurant (1318-18 1/2 9th Avenue) in Ybor City, Fla. on October 22, 1928. Automobiles and commercial buildings are in the background. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00027736

The Mecca Café at 1701 East 7th Avenue in the Ybor City district of Tampa, Florida, 1929. The café is a two story building with a covered porch wrapping around the second story. Several men stand on the sidewalk near the corner entryway to the café. Several automobiles are parked on the avenue as well as a delivery truck from La Joven Francesca Panderia. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00030195

The Interior of the Las Novedades Cafè (1416 North 7th Avenue) in Ybor City, Fla. on June 19, 1929. The stamped tin ceiling, lighting and ceiling fans can be seen over the diners and staff. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-0002961

The Hillsborough Pharmacy and Liquors store (5317-19 Nebraska Avenue) on August 28, 1941. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015839
The Dining room of the Davis Island Country Club (455 Bosporus Avenue) in Tampa, Fla. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00001234

The Dining room at the Hillsboro Hotel (512 Florida Avenue corner of Twiggs Street). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00035281

Rose Esperante dances for a couple in the patio room at the Columbia Restaurant in Tampa, Florida during the La Verbena del Tabaco Festival. The couple in evening clothes are seated at a table with cloth and full setting. The dancer wears a shawl and a Spanish style dress featuring large polka dots and ruffles. In the background a bartender makes cocktails behind a small bar decorated with ornate Spanish tiles. The room has a high ceiling and a small balcony is in view. n.d. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001771.

The Gasparilla King is honored in the banquet hall of the Tampa Terrace Hotel on October 20, 1953. Attendees where formal evening clothes. A black and white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-6757.
A Couple in a local bistro during the La Verbena del Tabaco Festival in 1937. Note the Spanish arched windows, the beautifully laid table, and the attentive waiter. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001765

The Shortstop Market on February 23, 1941. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015154

A Gasparilla Night Parade float sponsored by Sears and Roebuck is shown as it passes L. B. Chapman Grocery, IGA Supermarket in the Ybor City section of Tampa, Florida. The float has a nautical theme featuring sailboats with four women in swimsuits and a masked man. n.d. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-00007207


Image of a man standing on a trolley car clearing the trolley wire in Chicago, Illinois, during a Chicago City Railway strike (Chicago City Railway Company workers strike, Chicago, Ill., 1903). Residential buildings are visible in the background. Cite as: DN-0001406, Chicago Daily News negatives collection, Chicago Historical Society.

Image of an adult and a baby elephant standing on a dirt floor in the middle of an empty auditorium. Two men are standing with the elephants. Text on the image reads: Barnum Bailey Circus. Photo taken in 1926. Glass 4 x 5 in. negative. Cite as: DN-0080898, Chicago Daily News negatives collection, Chicago Historical Society.

Exercise 3 Handout

A Coca-Cola delivery truck with driver and passenger is parked on a street in Tampa, Florida, 1921. The truck is parked near a building having Spanish architectural detail. Two bicycles lean against the building. Vehicles parked on an intersecting street are in view. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00005298

A 1921 view of the Citrus Exchange Building (611-622 Franklin Street)/Maas Brothers department store (612-622 Franklin Street) at the corner of Franklin and Zack Streets in Tampa, Florida. Maas Brothers department store occupies the lower floors of what is primarily an office building in the downtown area. Cars are parked in varying configurations on the two streets and a bicycle and three pedestrians are in view. The top of a streetlight is in the foreground. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00006557

Boat on a street flooded during the 1921 hurricane. Three people navigate a small boat near a building on a flooded street in Tampa, Florida after the 1921 hurricane. Spectators view the scene from the porch of a three story hotel or residence. Utility poles and an industrial smokestack are predominant. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00006674.

The 1921 home of Max C. Gill at 710 South Delaware Street in Tampa, Florida. The house is a brick bungalow in the craftsman style with a porch, tile roof, porte cochere, and detached garage. A lamppost stands at the driveway entrance. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00005715.
The Columbia Restaurant float during the Gasparilla Festival Parade at the Florida Fair Grounds, 1932. The float is a representation of an open oyster shell. Three women wearing mermaid costumes sit in the shell. Signage on the float says “Columbia Restaurant, Gem of Spanish Restaurants”. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-f-00003366.

The Sears Roebuck and Company of Tampa, Florida exhibit at the 1938 Ruskin, Florida Tomato Festival at night. Merchandise available from the company is shown: bicycles, refrigerators, kitchen stoves, tires, a washing machine, a lawn chair, furniture, and a radio. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00011727

Five women in swimming costumes are posed standing in a large cigar box to promote La Verbena del Tabaco Festival, 1937. The central figure, Rose Esperante, holds a cigar above her head. The box decoration depicts a woman in Spanish dress, with mantilla, holding a fan. The box is labeled La Verbena del Tabaco Queens. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001763.

Rose Esperante dances for a couple at the Columbia Restaurant in Tampa, Florida during the La Verbena del Tabaco Festival. The couple in evening clothes are seated at a table with cloth and full setting. The dancer wears a shawl and a Spanish style dress featuring large polka dots and ruffles. In the background a bartender makes cocktails behind a small bar decorated with ornate Spanish tiles. The room has a high ceiling and a small balcony is in view. n.d. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001771.
Miss Latin American XII with her court, Latin American Festival, 1948. Seated under an arch, the festival queen is surrounded by eleven female attendants wearing Spanish style dress including headdress. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-0003214

A Gasparilla Parade float sponsored by Walgreen’s Drugs ca. 1932. The float is adorned with representations of fountain drinks, cigars, oranges and a castle. Three women on the float wear pirate themed costumes. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00005024

A Gasparilla Night Parade float sponsored by Sears and Roebuck is shown as it passes L. B. Chapman Grocery, IGA Supermarket in the Ybor City section of Tampa, Florida. The float has a nautical theme featuring sailboats with four women in swimsuits and a masked man. n.d. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-00007207

A Gasparilla Parade float sponsored by Maas Brothers department store is shown traveling Bayshore Boulevard on a rainy festival day. The float decorated with representations of seahorses and palm trees and features men and women in different costumes. Davis Island is seen in the background. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-00003047

A Gasparilla Parade float sponsored by Sears and Roebuck is shown as it passes L. B. Chapman Grocery, IGA Supermarket in the Ybor City section of Tampa, Florida. The float has a nautical theme featuring sailboats with four women in swimsuits and a masked man. n.d. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-00007207

Pedestrians and motor traffic move through the intersection of Franklin and Zack Streets in downtown Tampa, Florida, 1929. A three story office and retail business building is featured and a traffic light is visible. Businesses in the view are Don Thompson Radio Fixtures and Appliances, Home City News Stand, Peeler’s Men Shop, West Coast Fertilizer Company, and William’s Corner. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000242

The Stovall Office Building at 416 Tampa Street, Tampa, Florida, 1950. Retail business occupy the ground floor. Automobiles and pedestrians are in view. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00053051.

Traffic moves through the intersection of Bayshore Boulevard and Platt Street in Tampa, Florida. The view includes Tampa General Hospital on Davis Island and the approach to the Platt Street Bridge. 1939. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00002068-p
The Economical Drug Store on the ground floor of the Stovall-Nelson Building at 817 Franklin Street in Tampa, Florida. The view shows the main entrance from a busy sidewalk busy with pedestrian traffic. One sign advertises Coca-Cola and another proclaims “This is not a chain store”. 1929. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00029362

The Mecca Café at 1701 East 7th Avenue in the Ybor City district of Tampa, Florida, 1929. The café is a two story building with a covered porch wrapping around the second story. Several men stand on the sidewalk near the corner entryway to the café. Several automobiles are parked on the avenue as well as a delivery truck from La Joven Francesca Panderia. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00030195

The intersection of Franklin and Twigg Streets in downtown Tampa, Florida during the 1940s. Trolley car tracks are shown in an intersection busy with foot and vehicular traffic. Includes views of these retailers: Madison Drugs, Resnick’s Cafeteria, Alvin Magnon Jewelers, Tampa Theater. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00002376

Three women and a small dog look across Tampa Bay from the Venetian Apartments courtyard in Tampa, Florida. The courtyard is enclosed by an open work cement wall with a decorative wrought iron gate leading to a boat slip. Ornate lamp posts top the columns on either side of the gate. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00022457
A “tin can tourist” camp at DeSoto Park near the shoreline of Tampa Bay in the 1920s. Tents are pitched near cars under palm and oak trees. Several men, women, and children are in view. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier B29-00004868

Tin can tourists camp at Six Mile Creek in October 1925. A woman prepares a meal as a man washes his face. A table is set and children play nearby. Tents are pitched and cars are parked under trees draped with Spanish moss. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier B29-00015531.

Tin can campers are shown at Palmetto Beach on the edge of Tampa Bay in the 1920s. Campers have pitched their tents and parked their cars under the palms near water’s edge. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier B29-v-00000220

Players and spectators at a Temple Terrace Golf and Country Club (119 North Glen Arven Avenue) golf tournament with views of the club grounds and buildings in this undated photograph. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00003327
A large crowd watches a February 4, 1926 promotional boxing match featuring Jack Dempsey at the Forest Hills Country Club in Tampa, Florida. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00017448

Many spectators attend a swimming meet at the Temple Terrace swimming pool. Lamp posts topped with spherical lights border the pool. Buildings in Spanish architectural style with tile roofs surround the pool. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00013290

The Temple Terrace Estates neighborhood near the Temple Terrace Country Club in Temple Terrace, Florida photographed on September 23, 1926. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00021114

King Gasparilla XV and his court ride his float in the Gasparilla Festival Parade at the Florida State Fair Grounds on February 4, 1924. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-s-00000095
King Gasparilla XV (Marian Harvey) poses next to a piano in his chambers, 1924. The king is dressed in full costume including cape and crown. Two dolls in similar costumes sit on the piano and several cut out figures stand on the floor. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00009341-b

The Gasparilla King is honored with a banquet at the Tampa Terrace Hotel on October 20, 1953. Attendees wear formal evening clothes. A black and white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00024369

A man and a woman in a canoe on the Hillsborough River near Tampa, Florida ca. 1922. The canoe is near the riverbank under trees draped with Spanish moss. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00008462

The Orange Pharmacy on Grand Central Avenue in Tampa, Florida viewed on August 14, 1921. In addition to prescription services, the pharmacy sells liquor and has a luncheonette. The building’s façade has a Spanish architectural details with tile accents. A black and white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00015791.
In the shade of some pine trees adults and children share a meal in a picnic area near the waters of Tampa Bay in 1948. The picnic spot is on the Courtney Campbell Causeway. A black and white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-unk-0000020

People gather under a stand of palm trees to enjoy a barbeque near Tampa, Florida, April 18, 1925. A black and white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00014184

Palm trees line the beach at Palmetto Shore near Rocky Point on Tampa Bay. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-v-00000672

The disastrous effect of the 1921 hurricane on citrus crops is seen in this photograph. A tree is has been split and toppled and citrus is scattered on the ground. A black and white photograph in jpeg format in the Burger Brothers Photograph Collection. Unique Identifier: B29-00006715
A View down Davis Boulevard in Tampa, Florida with the Davis Island Country Club on the left and automobiles down the street. Also in view are the Palace of Florence (43 Davis Boulevard) and Sea-Born School (30 East Davis Boulevard). A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00002233

An Automobile as it passes the Davis Island Country Club on palm-lined Davis Boulevard in Tampa, Florida. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001961

A Trolley car on Lafayette Street passing Hyde Park Avenue in Tampa, Florida in 1918. Plant Park (West Lafayette Street opp Hyde Park Avenue) can also be seen. A black-and-white photograph in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000185

A View of Grand Central Avenue during the war the Second World War. Billboards advertising 7 up and Buy War Bonds, the Grand Central 5 and 10 Cent Store (704 Grand Central Avenue, Hyde Park, Rosemary Hotel (706 1/2 Grand Central Avenue), Shea and Prange Pharmacy (702 Grand Central Avenue), and Snow Park Service Station (602-604 Grand Central Avenue) can also be seen. A black-and-white photograph in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00016715
An Aerial view of a dirt street (later Hyde Park Avenue) passing through a residential area of Hillsborough Bay, Fla. Houses have already begun appearing in this area at this time of the picture. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000217

The Intersection of Brevard Avenue, Grand Central Avenue, and Lafayette Street in the Hyde Park section of Tampa, FL. Note the gas street lights, sidewalks, homes, and trees lining these early Florida avenues. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000135

A Fred Herman's Sausage tractor trailer delivery truck in front of the Fred Herman's Meats (101 Governor) in Tampa, Fla. on April 11, 1942. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00016337

A Horse and delivery wagon carrying Turner and Wilson Coffee. The photo was taken ca. 1912 on Franklin Street in Tampa. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00000033
The Sulphur Springs Hotel and Apartments (8122 Nebraska Avenue) in Sulphur Springs, Fla. Also visible are automobiles, on-street parking, Kilgore Hardware Company (8440 Nebraska Avenue), Maves 5-10-25 Cent Stores (8138 Nebraska Avenue), Sulphur Springs Drug Store (8120 Nebraska Avenue), and Sulphur Springs Home Supply Store (8132-8134 Nebraska Avenue). A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00015829

The Home of Val Antuono. (4024 Bay to Bay Boulevard cor Clark Street) in Tampa. Note the Spanish-style architecture, paved street, and street lights. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00032392;

The Living room of the Casimiro Hernandez home (3108 Avon Avenue) in August 1942 showing the chandelier, furniture, fireplace, carpet and lamps. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00016589

White's Home Supply Store on Broadway Avenue (4928 East 7th Avenue) in Tampa in 1938. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00011676
The Reed Funeral Home (500 Twigg Street) on April 1, 1928. Note the brick-paved street, street-railroad tracks and utility poles. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000211;

A House on Marion and Jackson Streets in 1922 with the Tampa City Hall (315 Lafayette Street) in the distance and automobiles in the foreground. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-rel-00000189;

A 1930’s party at the spanish-themed Davis Island Country Club (455 Bosporus Avenue) during the La Verbena Del Tabaco Festival. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00027732;

Dancer Rose Esperante dressed in Spanish attire for the 1937 La Verbena del Tabaco Festival in Tampa. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001767;
Spanish Dancers in 1940 in Tampa. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-00058645

A Couple in a Spanish restaurant during the La Verbena del Tabaco Festival in 1937. Note the Spanish arched windows, the beautifully laid table, and the attentive waiter. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001765

A man serenading a seniorita (Rose Esperante) at the Davis Island Country Club (455 Bosporus Avenue) during the 1937 La Verbena del Tabaco Festival. The audience really appreciated the entertainers. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-v-00001752

A Spanish guitarist and Louise Esperante in Spanish attire during the La Verbena del Tabaco Festival on September 11, 1938 at the Davis Islands Country Club (455 Bosporus Avenue). The dinner was delicious and the entertainment lively. Unique Identifier: B29-v-00001952
A "Jack and the Bean Stalk" float passing in front of Haber's Department Store (613 Franklin Street) during the 1956 Children's Gasparilla Parade in Tampa. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00030188

A marching band and some women in uniform round the bend from Franklin Street to Lafayette Street near Postal Telegraph Company (406 Franklin Street) during a parade. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-z-00002570

A Banbury Cross float passing Exchange National Bank (601 Franklin Street cor Twiggs Street) at the Children's Gasparilla Parade in 1956. A black-and-white photo in jpeg format in the Robertson and Fresh Photograph Collection. Unique Identifier: R05-00030231

Crowds watch the Jose Gaspar sail up the river, through an open bridge, and into downtown Tampa during the 1938 Gasparilla Pirate Invasion. A black-and-white photo in jpeg format in the Burgert Brothers Photograph Collection. Unique Identifier: B29-f-00003138
Tampa’s Bay Shore Boulevard in 1922 when it was a brick road. A blank and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000426

A House in Parkland Estates on Lisbon Avenue later known as MacDill Avenue. Photo taken August 7, 1941; house owned by Zola E. Hagadorn (804 MacDill Avenue). A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015728

A School bus transversing a flooded road during a Tampa flood. Date unknown. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-z-00003011

Poinsettia Dairy Products (3319 Florida Avenue), Incorporated on Florida Avenue, showing their delivery trucks and their affiliation with Borden’s Ice Cream Dairy. Photo taken February 2, 1947. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00020562
Elkes Pontiac Company (1101 Florida Avenue corner of Harrison) on October 2, 1953. A delivery truck is shown in front of the service station. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00024299

The Elks Club (425 Florida Avenue) and the on Union Bus Station (703 Cumberland Street) ca. 1920s when both streets were paved with brick. The automobiles are parked in front of the bus station. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000361

Traffic rushes past the Hotel Hillsboro on Florida Avenue in Hillsboro, Fla. Businesses shown include Floridan Flower Shop (905 Florida Avenue), Hillsboro Hotel (512 Florida Avenue corner of Twiggs Street), Powell’s Flower Shop (505 Florida Avenue), and the Sunshine Laundry (503 Florida Avenue). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00043518

Night time on 7th Avenue in Ybor City, Fla. ca. 1927. Shown are automobiles in front of Henry Clay Shoe (1602 East 7th Avenue) and Smith and Smith Chiropractic. Also included are the street railroad tracks in the 1920s brick paving. A black and white photograph in jpeg format contributed by: Burgert Brothers. System number B29-unk-0000021
The Broadway Service Station (901 East 7th Avenue) on East Broadway Avenue in Ybor City, Fla. ca. 1926 soon after the paving of East Broadway with brick. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00022326

A View down 7th Avenue from 15th Street in the Ybor City section of Tampa, Fla. in 1920. A Tampa Trolley car can be seen near Katz’s Adams and Company (1430 East 7th Avenue). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa--Ybor City System number B29-rel-00000319

1903 Road construction on Florida Avenue in front of the Tampa Furniture Company (707-709 Florida Avenue) in Hillsborough, Fla. Seen are a crew of construction works in a water main ditch, mixed brick and stone paving, and the street railroad tracks. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00042357

The Ybor City Presbyterian Mission Church Assembly Hall (953 11th Avenue) on April 5, 1942. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00016317
The Hyde Park Presbyterian Church (later the Tampa Heights Presbyterian Church) (602 East Palm Avenue). A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-v-00000526

The Steamship Pokenoket sails past the Tampa Bay Hotel (West Lafayette and Hyde Park Avenue) on the Hillsborough River (Polk County--Hillsborough County, Fla.) in 1925. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00015079

Image of many children assembled next to and in a cable car during a Chicago Daily News Fresh-Air Fund outing in Chicago, Illinois ca. 1902. Some of the children are standing on the cable car's running boards and several are leaning out of the car's windows. Cite as: DN-0000090, Chicago Daily News negatives collection, Chicago Historical Society.

Near view of a bridge and locks on the drainage canal at Lockport, Illinois. This image was taken as part of a Chicago Railways Company Trolley Trip in 1908. Cite as: DN-0006895, Chicago Daily News negatives collection, Chicago Historical Society.
Exercise 4 Handout

Women dressed for La Verbena Del Tabaco Festival outside a window at the El Pasaje Hotel and Restaurant (1318-18 1/2 9th Avenue) in Ybor City, Fla. on October 22, 1928. Automobiles and commercial buildings are in the background.
A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00027736

The Interior of the Las Novedades Cafè (1416 North 7th Avenue) in Ybor City, Fla. on June 19, 1929. The stamped tin ceiling, lighting and ceiling fans can be seen over the diners and staff. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-0002961

Sailing ships docked at Lee Terminal (Lee Terminal and Warehouse Corp. (Ella Mae Avenue cor 13th Street)) at the Port of Tampa, located on the Hillsborough River (Polk County-Hillsborough County, Fla.). Photo taken October 13, 1919. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-rel-00000143

The Italian Club, or L’ Unione Italiana Club (1725 East 7th Avenue) in Ybor City, Fla. Also shown are the street railroad tracks and power lines, brick paving, and automobiles. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000365
Roy Rogers, the famous motion picture actor, and his horse Trigger at the Florida State Fair in 1959. They are in front of Trigger’s personal trailer. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00076640

La Verbena Del Tabaco Festival at the Centro Asturiano (1913 Nebraska Avenue) in Ybor City, Fla. ca. 1931. Dancers, diners and spectators can all be seen under the electric lights, fans and tin ceiling. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00027740

Women dressed for the La Verbena Del Tabaco Festival in front of the Centro Asturiano (1913 Nebraska Avenue) in Ybor City. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00027734

The Cargo ship Neches at the Tampa Union Terminal (1004 Finley Street) in the Sparkman Channel of the Tampa Harbor. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00028444
Boats on the Hillsborough River near Plant Park (West Lafayette Street opp Hyde Park Avenue) on the Hillsborough River (Polk County-Hillsborough County, Fla.). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00000732

An Aerial view of Tampa above Lafayette Street in 1914. Structures in photo include Hillsborough County Court House (401 Franklin Street bet Madison and Lafayette Streets) and Bay View Hotel (208 Jackson Street). Also shown are trolley cars, street-railroads and automobiles. Tampa System number B29-00001186

Brick paved Memorial Highway built on sand through a forest grove. Photo taken ca. 1920s. A black and white photograph in jpeg format contributed by: Burgert Brothers.

View of the Imperial Cafe (1501 6th Avenue) on the left. Cross street is 4th Avenue. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00000410
The German-American Club (6011 North Rome Avenue) in Ybor City, Fla. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00004247

The Times Building on Franklin and Washington Streets in Tampa on January 30, 1923. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00008511

The Ferry boat the Favorite on dry land after the Hurricane of 1921. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00006733

The Tribune Building on Tampa Street (602 Tampa Street cor Twiggs Street) on March 15, 1923. Note the delivery truck at the loading dock. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00008758
A Glass truck crossing the Gandy Bridge on Tampa Bay. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00012520

The lobby and check-in desk of the Floridan Hotel (905 North Florida Avenue ne cor Cass Street) in 1926. Note hotel employees in front of check-in desk. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00022486

The Dining room of the Davis Island Country Club (455 Bosporus Avenue) in Tampa, Fla. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00013950

Cars passing the Las Novedades Cafe (1427 East 7th Avenue) and Broadway Cafe (1427 East 7th Avenue) in Ybor City ca. 1920s. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00033628
Women boxing cigars at Cuesta Rey and Company (2015 North Howard Avenue) in 1947. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00034993

The Dining room at the Hillsboro Hotel (512 Florida Avenue corner of Twiggs Street). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00035281

The rides and concession stands at the 1924 Florida State Fair in Tampa. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-f-00000330

An Atlantic Coast Line Railroad steam locomotive on display at the Atlantic Coast Line Railroad Company (101 Lafayette corner of Ashley Street) in 1929. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-f-00000946
An National Airlines, Inc. airplane on the tarmac of Peter O. Knight Airport (700 West Davis Boulevard) on Davis Island in Tampa, Fla. on December 20, 1940. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00002219

Men working on a banana shipment at Port Tampa. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00002426

A house in Parkland Estates on Simms Boulevard on August 3, 1941. The house (2701 Simms Boulevard) is owned by Harry C. Quarles. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015733

The bar of the Colombia Spanish Restaurant (2117 East 7th Avenue) on April 19, 1942. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00008076
The Eastern Air Lines Ticket Office (415 Florida Avenue) on October 16, 1941. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015951

The Hillsborough Pharmacy and Liquors store (5317-19 Nebraska Avenue) on August 28, 1941. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015839

The Shortstop Market on February 23, 1941. A black and white photograph in jpeg format contributed by: Robertson and Fresh (Firm). Tampa System number R05-00015154

The Tampa International Airport (700 West Davis Boulevard) on November 20, 1952. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00002953
The Pool and garden of the Davis Islands Country Club (455 Bosporus Avenue). A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00032399

Image of a man helping a girl climb down from a delivery wagon carrying passengers during the June 1916 street car strike in Chicago, Illinois. Other passengers wait their turn to climb down. Men carrying umbrellas are visible walking across the street in the background, and street car tracks are visible on the street. Glass 4 x 5 in. negative. Cite as: DN-0064592, Chicago Daily News negatives collection, Chicago Historical Society. Reproduction number: DN-0064592

The Interior of the Las Novedades Café (1416 North 7th Avenue) in Ybor City on June 19, 1929. Note the display case, diners and staff under the stamped tin ceiling, lighting, and ceiling fans. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-00029611

Looking down 7th Avenue at a trolley car as it passes the Las Novedades Café (1416 North 7th Avenue), Ritz Theater (1503 East 7th Avenue) and Ybor City Chamber of Commerce (1710 East 7th Avenue) in 1937. A black and white photograph in jpeg format contributed by: Burgert Brothers. Tampa System number B29-v-00001864

Cataloging for the 21st Century
Course 3: Controlled Vocabulary & Thesaurus Design
Interior view of the Schultz Drug Co. on 16th (Sixteenth) Street in Denver, Colorado ca. 1890s?. Men and a woman stand behind the display cases and African American men, who include Clarence F. Holmes, Sr., stand behind the lunch counter. Photoprint (4 x 6 in.) on mat board. Source: Clarence F. Holmes MSS Collection. Reproduction number: X-22356

Image of a lunch room on the river dock in Chicago, Illinois in 1906. Two men are standing in the doorway of the lunch room, and a sign painted on the exterior wall reads, lunches put up at quick notice. Glass 5 x 7 in. negative. Cite as: DN-0003793, Chicago Daily News negatives collection, Chicago Historical Society. Reproduction number: DN-0003793

Stereoscopic views of the Metropolitan Sanitary Fair and other exhibitions, New York City ca. 1864-1875?. Cite as: Robert Dennis Collection of Stereoscopic Views.
**Sample Thesaurus Front Matter**

**The Thesaurus for Nonprofit Information**

1. **Scope, Purpose and Users**

   The Thesaurus for Nonprofit Management (TNM) provides a set of terms that may be used in the cataloging and organization of materials specific to management of nonprofit organizations. TNM may also be used in creating web page FAQs and manual indexing systems such as vertical files. The main concepts in this thesaurus cover nonprofit management, finance and human resources. Peripheral concepts include service fields, regulations, and organizational change. The thesaurus does not include terms to describe the different service fields of nonprofit organizations or types of grants available for nonprofit organizations, as a thesaurus covering these terms is available through the Foundation Center and the National Taxonomy of Exempt Entities. (See Appendix A for links to these sources.)

   TNM contains a controlled vocabulary of terms used to describe activities in the operation of nonprofit organizations and those performing these activities. *Guidelines for the Construction, Format, and Management of Monolingual Thesauri* (ANSI/NISO Z39.19 - 2003) and *Thesaurus construction and use: a practical manual* by Aitchison et al were used in the construction of this thesaurus. Every attempt has been made to adhere to the standards and guidelines noted in these sources.

   As a general rule TNM does not include proper nouns, but there are exceptions. These terms are indicated through the use of capitalization.

   TNM is intended for librarians or others developing resource material for use by nonprofit organizations. Management support organizations (MSO) are also target users as they provide direct technical assistance to nonprofit organizations.

2. **Source Information and Software**

   In addition to existing thesauri, experts in the field of nonprofit management and other classification systems were consulted. (See Appendix B for a list of resources consulted.) Other sources of “word stock” came from back-of-the-book indexes of selected nonprofit management books and an accumulation of FAQs. TNM was created using TCS-8 WebChoir software.

   A general overview of our treatment of source material is outlined here. For specific information on the entry policy used in TNM see Section 4. Using electronic resources of classification systems in the domain, we concatenated the files and did a word frequency count to create a basis for our word stock list. We also analyzed each of the major divisions used in the C-MAP classification systems and found similarity in the major categories and organization. These terms were used to help create our preliminary set of descriptors. After analyzing the major divisions, we entered the UNESCO terms into TCS-8 and used these descriptors as a guide during construction. Once our word stock list was entered, we identified several “main” concepts including management operations, persons involved in nonprofit management and
services provided by nonprofit organizations. We divided these main concepts into main facets similar to the fundamental facets mentioned in Aitchison. We determined that creating facets that mirrored the life cycle of a nonprofit organization would be the most logical organization of the terms. As such, we start with startup of a nonprofit organization and follow it through to the dissolution. The remainder of our work involved creating relationships between our descriptors and adding scope notes where necessary. The number of word stock terms and resources for this area were overwhelming. However, once we completed the facet analysis and started arranging the descriptors according to the main facets, the work became manageable and we had a systematic way to effectively populate the thesaurus.

3. Layout and Relationships

TNM currently contains 199 preferred terms and 65 non-preferred or cross-reference terms. The relationships included in TNM are equivalence relationships, hierarchical relationships and associative relationships. The reference structure for each authorized term includes:

- **broader terms (BT)** - a preferred term which indicates the more general class to which the term belongs
  - Accounting
  - BT Financial administration

- **narrower terms (NT)** - a preferred term which indicates the narrower scope and is a member of a broader class
  - Board committees
  - NT Audit committees

- **related terms (RT)** - a preferred term that indicates a concept that is closely related to another preferred term
  - Bylaws
  - RT Board of directors

- **use for terms (UF)** - a non-preferred term that is provided to help identify meaning or scope of term; (the reciprocal is USE)
  - Consultants
  - UF Contractor

- **use for alternate (UF+)** - an alternate language term that is provided to assist users from a broader scope; (the reciprocal is SEE)
  - Labor market
  - UF+ Labour market

- **use terms (USE)** - a cross reference term that is used to direct catalogers to a preferred term; (the reciprocal is UF)
  - Chief executive officers
  - USE Executive directors
4. Term Selection and Syntax

The ANSI standards were followed as close as possible in determining word usage. Natural language and standard American English were used. It is important to note that the UNESCO terms often contained British English. In these cases, American English was preferred.

4.1. Single Word Terms
Headings for concrete concepts were entered in the plural (e.g. Managers). Headings for abstract concepts were entered in the singular form (e.g. Management). Headings for activities (operations, procedures) were entered in the gerund form (e.g. Planning) whenever possible.

4.2 Compound Word Terms
When a concept could not be expressed using a single term, a compound term consisting of two or more words was used. Words in compound entries were made using natural word order and not inverted.

4.3 Parenthetical Qualifiers
Parenthetical qualifiers were added to terms in order to clarify meaning, as in the case of homographs or when a different sense of the same word was used.

- Liabilities (economic)

4.4 Capitalization
The first word in each term is capitalized, unless the term is a proper name, in which case all of the appropriate words are capitalized within the term.

- Financial statements
- Internal Revenue Service

4.5 Scope Notes
Scope notes were used for terms in order to clarify meaning, or to clarify usage and scope of a term.

5. Using TNM in Searching and Indexing

TNM was designed primarily to be used as an indexing tool. How the thesaurus will be used will depend on the implementation of TNM and the intended outcomes. For example, web pages of FAQs would tend to use the higher levels of TNM hierarchy in order to organize and provide access to their materials. For cataloging of materials general cataloging principles should be used to determine what the materials are “about” and apply the appropriate terms. These terms should also be applied using the rule of specificity, where the most “specific” term possible to be applied to the material over the more “generic”.

6. TNM Updating Procedures

As with other thesauri, TNM will be updated to:

- correct an existing term
- change the status of a term
- remove a term
- add a term, and
- make changes to the hierarchy.

Some cases in which TNM will have to be edited include changes to existing laws or legislation that affects nonprofit organizations or new reporting procedures or requirements. In addition to
legal changes, the introduction of new office technologies may also need to be reflected in TNM. We have envisioned using TNM for cataloging, creating vertical files and organizing FAQs. There may be other applications yet unknown which could affect TNM and require changes. Literary precedent for new terms will also justify changes to TNM. Users are encouraged to provide feedback as often as possible to TNM Management Staff.

As TNM will be used by different catalogers, a worksheet (See Appendix D) will be used to note and / or request changes. The process is generally as follows: report filed with TNM Management Staff; report reviewed and decision made; TNM updated by TNM Management Staff. Request changes should be forwarded to Monique Leahey-Sugimoto and Jillian Wallis.

**Appendix A: External Thesaurus Referenced Within TNM**

http://fdncenter.org/research/grants_class/thesaurus.html

**Appendix B: Word stock Sources**

C-MAP, Humboldt: The Humboldt Area Foundation - Humboldt (Subject Files)
C-MAP, Los Angeles: Center for Nonprofit Management (Vertical File Listing, Print Collection Labels)
C-MAP, Orange County: Nonprofit Resource Center (Vertical File Listing)
C-MAP, Sacramento: Nonprofit Resource Center - Sacramento (Print Collection labels, Vertical File Listing,)
C-MAP, San Diego: Nonprofit Management Solutions (Vertical File Listing)
C-MAP, San Francisco: CompassPoint Nonprofit Services (Webpage directory)
C-MAP, Santa Barbara: Nonprofit Support Center of Santa Barbara (Vertical File Listing)
C-MAP, Sonoma: Center for Volunteer and Nonprofit Leadership of Marin (Vertical File Listing)
C-MAP, Sonoma: Resource Center for Nonprofits - Sonoma County (Vertical File Listing)
Foundation Center Library Classification Scheme
Thesaurus of ERIC Descriptors (Various areas)
Thesaurus of Sociological Indexing Terms 14th Edition (Mangement)
Topical list from the Free Management Library (www.managementhelp.org)
UNESCO Thesaurus (6.7-6.85) www.ulcc.ac.uk/unesco (Finance & Trade, Organization & Management, Personnel, Labour)

**APPENDIX C: Reference Sources**

# Appendix D: TNM Term Review Request Form

(Modified from ANSI/NISO Z39.19-2003)

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<thead>
<tr>
<th>TNM Term Review Request Form</th>
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<td>Term: ______________________</td>
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<td><strong>ACTION REQUESTED:</strong></td>
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<td>USED FOR (UF):</td>
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<td>BROADER TERM (BT):</td>
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<td>NARROWER TERM (NT):</td>
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<td>RELATED TERMS (RT):</td>
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<td><strong>COMMENTS:</strong></td>
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<td><strong>REVIEW AUTHORITY</strong></td>
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<td><strong>ACTION:</strong></td>
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<td>DATE: _____________________</td>
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<td>___________________________</td>
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Resources

Meta Sites

American Society of Indexers.
http://www.asindexing.org/site/index.html

Cover Pages. Resource Description and Classification.
http://www.oasis-open.org/cover/classification.html

Queensland University of Technology : Controlled Vocabularies
http://sky.fit.qut.edu.au/~middletm/cont_voc.html

University of British Columbia, School of Library, Archival and Information Studies. Indexing Resources on the WWW.
http://www.slais.ubc.ca/resources/indexing/database1.htm

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http://sky.fit.qut.edu.au/%7Emiddletm/cont_voc.html#Bibliography

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http://www.slais.ubc.ca/resources/indexing/database1.htm

Willpower Information. Publications on thesaurus construction and use.
http://www.willpower.demon.co.uk/thesbibl.htm

Controlled Vocabulary – Construction

American Society of Indexers : How do I build a thesaurus?
http://www.asindexing.org/site/thesbuild.shtml

Craven, T. Introductory Tutorial on Thesaurus Construction. London, Ontario, Canada: University of Western Ontario, Graduate School of Library and Information Science.
http://instruct.uwo.ca/gplis/677/thesaur/main00.htm

HILT : High-Level Thesaurus.
http://hilt.cdlr.strath.ac.uk/Sources/index.html


International Organization for Standardization. (fee)
ISO 2788:1986 Documentation -- Guidelines for the establishment and development of monolingual thesauri. (charge)
ISO 5964:1985 Documentation -- Guidelines for the establishment and development of multilingual thesauri
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http://www.ddj.com/dept/architect/184412772

State Records NSW. Guideline 15 Developing and implementing a keyword thesaurus.
and

University of British Columbia, School of Library, Archival and Information Studies. Indexing Resources on the WWW.
http://www.slais.ubc.ca/resources/indexing/database1.htm

Will, L. Thesaurus principles and practice.
http://www.willpower.demon.co.uk/thesprin.htm

Software Lists/Reviews

American Society of Indexers. Thesaurus Management Software.
http://www.asindexing.org/site/thessoft.shtml

Betz, Anne. Thesaurus Management Software.
http://www.fbi.fh-koeln.de/institut/labor/Bir/thesauri_new/thsoften.htm
Thesaurus Construction Software
http://www.webindexing.biz/articles/ThesaurusConstruction.htm

University of British Columbia, School of Library, Archival and Information Studies. Indexing Software.
http://www.slais.ubc.ca/resources/indexing/software.htm

Willpower Information. Software for building and editing thesauri.
http://www.willpowerinfo.co.uk/thessoft.htm

Lists of Controlled Vocabularies

American Society of Indexers. Thesauri Online.
http://www.asindexing.org/site/thesonet.shtml

Betz, Anne. Classification schemes and thesauri on-line.
http://www.fbi.fh-koeln.de/institut/labor/Bir/thesauri_new/indexen.htm

BUBL LINK Catalogue of Internet Resources. Thesauri.
http://bubl.ac.uk/link/types/thesauri.htm

Controlled Vocabulary. Example Controlled Vocabularies and Thesauri available online.
http://www.controlledvocabulary.com/examples.html

HILT : High-Level Thesaurus. A-Z of Thesauri.
http://hilt.cdlr.strath.ac.uk/Sources/thesauri.html

Lutes, Barbara. Web Thesaurus Compendium.
http://www.ipsi.fraunhofer.de/%7Elutes/thesoecd.html

Queensland University of Technology : Controlled Vocabularies
http://sky.fit.qut.edu.au/~middletm/cont_voc.html

Taxonomy Warehouse.
http://www.taxonomywarehouse.com/

Thesaurus Construction Software
http://www.webindexing.biz/articles/ThesaurusConstruction.htm

University of British Columbia, School of Library, Archival and Information Studies. Indexing Resources on the WWW : Links to Online Thesauri, Term Lists & Classification Schemes.
http://www.slais.ubc.ca/resources/indexing/database1.htm

University of Toronto, Faculty of Information Studies. Subject Analysis Systems (SAS) (Repository).
http://www.fis.utoronto.ca/content/view/386/134/
Controlled Vocabulary and Thesaurus Design
Course bibliography

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Willpower Information. Thesaurus principles and practice. http://www.willpower.demon.co.uk/thesprin.htm

**Online thesauri**

Thesaurus for Graphic Materials-Subject Terms (TGM-I)
http://www.loc.gov/rr/print/tgm1/

Medical Subject Headings (MeSH)

Getty Art & Architecture Thesaurus
http://www.getty.edu/research/tools/vocabulary/aat/

Unified Medical Language System (UMLS).
http://www.nlm.nih.gov/research/umls/


**Thesaurus construction standards**


Evaluation Form
Principles of Controlled Vocabulary and Thesaurus Design

Your evaluation of this workshop is very important to the future development of this course and other similar courses. Your honest, candid answers to the following questions will assist us in providing quality programs.

Please rate the following aspects of today’s workshop by checking the box that best reflects your evaluation:

1. The overall content of the workshop:
   a. was extremely valuable
   b. provided enough detail
   c. was current & relevant
   d. was cohesive & logical
   e. was appropriate to my needs
   f. met its stated objectives

2. Presenter:
   a. was knowledgeable
   b. had good presentation skills
   c. encouraged participation
   d. addressed my level of understanding
   e. answered questions directly
   f. was prepared
   g. understood the audience dynamics

3. Presenter:
   a. was knowledgeable
   b. had good presentation skills
   c. encouraged participation
   d. addressed my level of understanding
   e. answered questions directly
   f. was prepared
   g. understood the audience dynamics

4. The handouts:
   a. are excellent
   b. followed course content
   c. are valuable for future reference

   5 4 3 2 1
   _______ _______ _______ _______ _______
5. The PowerPoint slides:

a. were clear and easy to read 5 4 3 2 1
b. were well organized

c. illustrated concepts clearly

d. covered an appropriate amount of information

e. were visually effective

f. were enhanced by and supported the presenter’s remarks

were hard to read
were poorly organized
were confusing
contained too much or not enough information
were not effective
were poorly related to the presenter’s remarks

Please give the following information about yourself:

6. Your level of knowledge in the subject of this workshop before today:  expert 5 4 3 2 1
   novice

7. Your level of experience in the subject of this workshop before today:  very experienced 5 4 3 2 1
   beginner

8. Other comments:

Comments on specific sessions:

THANK YOU!