Taxonomies for Search & Retrieval

Heather Hedden
Hedden Information Management

January 5, 2009
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Definitions

Controlled vocabulary

- An authoritative, restricted list of terms (words or phrases) mainly used for indexing/tagging content to support retrieval
- Controlled in who and when new terms can be added
- Mainly used for indexing/tagging content to support retrieval
- Usually makes use of equivalent non-preferred terms (synonyms, etc.) to point to the correct, preferred terms
- May or may not have structured relationships between terms (broader/narrower, related)
- “Controlled vocabulary” is the most general, widely used, broadest concept for all applications (CV for short)
Definitions

Synonym ring
A type of controlled vocabulary with:
- Synonyms or near-synonyms for each concept
- No designated “preferred” term: All terms are equal and point to each other, as in a ring.
Definitions

Taxonomy

1. A controlled vocabulary with broader/narrower (parent/child) term relationships that include all terms to create a hierarchical structure
   - For categorizing and organization things
   - May or may not have equivalent non-preferred terms (synonyms, etc.) to point to the correct, preferred terms
2. A controlled vocabulary used in corporate/enterprise applications
   - Sometimes used synonymously for any controlled vocabulary
   - To support information organization and/or information retrieval
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Why a Taxonomy

1. **Controlled vocabulary (CV):**
   Brings together different wordings (synonyms) for the same concept
   - Helps people search for information by different names

2. **Hierarchical classification:**
   Organizes information into a logical structure
   - Helps people browse or navigate for information
Why a Taxonomy

- A controlled vocabulary gathers synonyms, acronyms, variant spellings, etc.
  - Documents not missed due to use of different words (e.g. *Automobiles*, instead of *Cars*)
  - User does not need to guess the spelling of unusual or foreign names (e.g. *Condoleezza Rice*)

- A search restricted on the controlled vocabulary retrieves concepts not just words.
  - Documents excluded for mere text-string matches (e.g. *monitors* for computers, not the verb “observes”)

Why a Taxonomy

CV contains all synonyms:
- Oil industry
- Oil & gas industry
- Oil and gas industry
- Oil & gas industries
- Oil and gas industries
- Petroleum industry
- Oil companies
- Big oil
- Oil producers
- Petroleum companies

Users may enter:
- Oil industry
- Oil & gas industry
- Oil & gas industries
- Petroleum industry

Text may contain:
- Oil and gas industry
- Oil companies
- Big oil
- Oil producers
Why a Taxonomy

A hierarchical taxonomy provides guided search.

- Users can browse and locate narrower (more specific) subjects of interest.
- Users find out what is included and what is not.
- Users may find related subjects of interest.

Taxonomies reflect natural categories.
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Taxonomy User Interface

Deciding on the Taxonomy User Interface:
- Alphabetical browse
- Hierarchical tree
- Facets
- Search box
- Combination of one or more
Taxonomy User Interface

Alphabetical browse

- Simple list
- Back-of-the-book style index with indented subentries (site A-Z index)

- O
  - off-campus work, 78
  - office hours responsibility, 80
  - Office of Research Administration (ORA), 96
  - office space
    - faculty, 109
    - librarian, 93
    - MSP/Lowell, 10
  - Official Designee of the Chancellor, 3
  - Official Personnel File, 65–66
  - orientation work of faculty, 81

- P
  - paid leaves of absence. *see* leaves of absence, paid
  - parental/adoptive leave, 134
  - parking lots and spaces, 108–109
  - part-time faculty, 59
    - collective bargaining representative, 5
    - consecutive contracts, 60
    - full-time faculty retrenchment impact, 63
    - hiring process, 62
    - temporarily less than full-time, 122
    - temporary part-time (visiting), 60–61
    - union membership exclusion, 61–62
  - patent policy, 95–96
  - payroll deduction
    - agency service fee, 148
Taxonomy User Interface

Alphabetical (A-Z) browse is suitable for:

- Names (proper nouns), separated out or as a significant component
- Content not easily categorized
  - Content within a book and book-like narrative texts, including instructional texts
  - Unlimited-scope subject area content
- Content vast in volume and depth necessitating a large controlled vocabulary
- When there are resources for either index updating, or for frequent updates/additions of content
Taxonomy User Interface

Hierarchical tree

1. Expandable, on same page

Online example: Human body
Hierarchical tree

2. Separate page for each level of the hierarchy

Taxonomy User Interface

Find business listings for Arts & Entertainment.

- **Arcades & Amusements**
  - Amusement Equipment & Supplies, Video Arcades & Internet Gaming Centers, ...

- **Bars**

- **Carnivals, Fairs, & Festivals**
  - Fairgrounds, Music Festivals, ...

- **Children's & Family Entertainment**
  - Miniature Golf Courses, Theme Parks, Zoos, ...

- **Concert Tickets**

- **Cultural Attractions, Events, & Facilities**
  - Historical Places & Services, Libraries, Museums, ...

- **DVD Rentals**

- **Entertainment Clubs & Nightlife**
  - Comedy Clubs, ...

- **Entertainment Industry**
  - Entertainment Agencies & Bureaus, Motion Picture Producers & Studios, Music & Recording Industry, ...

- **Event Planning**
  - Convention & Meeting Planning Services, Party Planners, ...

- **Movie Theaters**

- **Movies, Videos, & DVDs**
  - Video Production Services, ...

- **Music**
  - Music Instruction, Music Stores, Musical Instruments Retail, ...

- **Night Clubs**

- **Performing Arts**
  - Entertainers, Live Theater, Orchestras, Symphonies, & Bands, ...

- **Sports Tickets**
  - Concert Tickets, ...

- **Tours & Charters**
  - Boat & Yacht Charters, Rental, & Leasing, Fishing Guides & Charters, ...

- **Video Game Rentals**

- **Visual Arts**
  - Art Supplies & Art Supply Stores, Artists & Art Studios, Professional Photographers, ...
Taxonomy User Interface

Hierarchical tree

Separate page for each level of the hierarchy

Online examples:

- ebay
  [http://www.ebay.com](http://www.ebay.com)
- Amazon.com book subject categories
- Open Directory Project
  [http://www.dmoz.org](http://www.dmoz.org)
Taxonomy User Interface

Hierarchical categories are suitable for:

- Content that is naturally categorizable: products, industries, government agencies, academic disciplines, scientific things, technologies
- Taxonomies of any size, but especially smaller taxonomies
- Large volume and/pr changing content (e.g. news feeds), resulting in multiple records per term (category) and the frequent need for new subcategories
- Automatic indexing/ auto-categorization, which puts documents into approximate categories
Taxonomy User Interface

Hierarchical categories are also used in site organization

- Simpler and smaller taxonomies
- No use of synonyms (non-preferred terms)

Examples of web site organizational taxonomies:

- Digital Web Magazine topics
- Information Architecture Institute
- MyFlorida.com State of Florida site map
  [http://www.myflorida.com/taxonomy](http://www.myflorida.com/taxonomy)
Taxonomy User Interface

Facets

- For serving faceted classification, which allows the assignment of multiple classifications to an object
- A “dimension” of a query; a type of concept; domain of content
- Intended for searching with multiple terms in combination (post-coordination), one from each facet
- Can be for topics or for named entities, but generally not both
Taxonomy User Interface

Facets for Web sites

Rosenfeld and Morville, *Information Architecture for the World Wide Web*

- Topic
- Product
- Document type
- Audience
- Geography
- Price
Taxonomy User Interface

Facets are suitable for:
- Structured data with discernable metadata fields or database records
- Homogeneous data with similar types of characteristics (e.g. products in an e-commerce site)

Example types of facets:
- Products (name, series number, category, size, color, price, etc.)
- People (name, job title, gender, birth year, location, department)
- Reports (title, author, subject, audience, document type)

Online examples of faceted taxonomies:
- Microbial Life Educational Resources
  http://serc.carleton.edu/microbelife/resources/index.html
- Shoebuy.com - advanced search
  http://www.shoebuy.com/s.jsp/r_as
Taxonomy User Interface

Search box

Ideally should:
- Support Boolean, truncation, wildcards, phrase search, and other “advanced” searching
- Search on the taxonomy, not merely on the full-text
- Be in addition, not instead of a taxonomy browse
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Taxonomy Scope, Breadth and Depth

Deciding the Taxonomy Scope
- Content scope
- Subject area scope
- Term types to include
- Usage
- Breadth and depth
Taxonomy Scope, Breadth and Depth

Content Scope
Content to be covered by the taxonomy can be limited to some or all of:

Content types:
- Employee handbooks
- Manuals
- Policies
- Standards
- Product data
- Transaction records
- Reports & white papers
- Marketing literature
- External publications

Document/file formats:
- Word documents
- PDF documents
- Presentations
- Spreadsheets
- Web pages
- Image files
- Videos
- Database records
- Other published formats
Taxonomy Scope, Breadth and Depth

Subject Area Scope
Example: Area to be covered by an enterprise taxonomy can be limited to some or all of:

- Products and services (names, descriptions, features, user issues)
- Technology and technical terminology (science, research & development oriented)
- People and their areas of expertise
- Human resources
- All information in an enterprise
Scope of Term Types
(could also be considered as metadata or “facets”)
Term types to be included can be limited to some or all of:

- Subjects/Topics
- Person names
- Organization/company names
- Product names
- Locations
- Activities/Actions
- Job titles
- Price ranges
- etc.
Usage Scope
– to be used by:

Employees, Partners and the Public

Employees & Vendors/Partners

All Employees

Certain Employees Only

• Public Web Site
• Extranet
• Intranet
• Intranet restricted sections
**Taxonomy Scope, Breadth and Depth**

**Breadth and depth**
- How many terms (approximate)
- How many (if any) hierarchical levels deep
- How specific the terms get

A specific term vs. combining two less specific terms

<table>
<thead>
<tr>
<th>Drug trials</th>
<th><strong>Product testing and Drugs</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Software</td>
<td><strong>Customer Relations Management and Software</strong></td>
</tr>
</tbody>
</table>
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Taxonomy Sources

Choosing the taxonomy source

1. Buy
2. Build
3. Automate
Taxonomy Sources

1. Purchasing a Taxonomy
   - List of those available:
     Taxonomy Warehouse [www.taxonomywarehouse.com](http://www.taxonomywarehouse.com)
   - Vary to the extent of what’s included:
     term relationships (broader/narrower, related), “used from” synonyms, scope note definitions, additional term attributes
   - May or may not include implementation services
   - Suitable for generic areas:
     - Industries, product types, geographic places, science & medicine, academic disciplines
   - Not for unique organization needs
   - Not for small web navigation taxonomies
2. Building a Taxonomy

- Decide who does it:
  - Contracted consultancy (large project)
  - Taxonomist temp/freelancer (small project)
  - Existing information architect or staff librarian (ongoing or recurring small tasks)
  - Taxonomist new hire (ongoing or recurring large tasks)

Taxonomists – usually have education in library & information science and experience in information architecture
3. Automated Taxonomy Creation

Can serve in:
- Term extraction
- Synonym (“used for”) term association
- Related term suggestion

Useful for large search taxonomies, not for hierarchy design

Technologies:
- Entity extraction
- Text mining
- Text analytics

“Auto-categorization” or “auto-classification” is not the same as automated taxonomy creation. They make use of an existing controlled vocabulary with extracted terms.
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
1. Choosing the preferred term
   - Doctors vs. Physicians
   - Movies vs. Motion pictures
   - Cars vs. Automobiles

2. Creating synonyms (for search, not for navigation)
   - Cars
     - UF Automobiles
     - UF Autos

3. Structuring the hierarchy or relationships (broader/narrower or related)
   - Motor vehicles  See also Drivers
     - Cars
     - - Sports cars
Taxonomy Terms and Relationships

1. Choosing the Preferred Term

Sources for taxonomy terms include:

- **People**
  - Stakeholders, users, subject matter experts
  - Via interviews, card-sort exercises, surveys, search logs

- **Content**
  - Web pages
  - Documents (Word, PDF, Excel, PPT, in print)
  - Images, video

- **External reference sources**
  - Glossaries
  - Industry standards
  - Regulatory agencies
  - Other taxonomies
Taxonomy Terms and Relationships

2. Creating Synonyms (Non-preferred, variants, used-from terms, cross-references, See references, keywords)

Types include:

- synonyms: Automobiles USE Cars
- near-synonyms: Weather USE Climate
- variant spellings: Defense USE Defence
- lexical variants: Hair loss USE Baldness
- foreign language terms: Luftwaffe USE German Air Force
- acronyms/spelled out forms: CD USE Compact discs
- scientific/technical names: Neoplasms USE Cancer
- antonyms (for characteristics): Softness USE Hardness
- narrower terms and instances that are not preferred terms: Hydroelectric power plants USE Power plants
3. **Structuring the hierarchy**

Reciprocal (bi-directional) relationships, but asymmetrical

Broader term (BT)  \[ \text{ALL \text{SOME}} \]

Narrower term (NT)  \[ \text{SOME \text{ALL}} \]

- **Fruits**  \[ \text{ALL \text{SOME}} \]
- **Oranges**  \[ \text{SOME \text{ALL}} \]

Three types:
1. **Generic - Specific** (Fruits – Oranges) “NT is a type of BT”
2. **Common noun - Proper noun** (Cities - Cairo) “NT is an instance of BT”
3. **Whole – Part** (Schools – Classrooms) “NT is a part of BT” or “NT is within BT”
3. Structuring the other relationships

Associative relationships (Related terms, “See Also” relationships)
Reciprocal (bi-directional) relationships that are symmetrical
- Suggestions to the user of possible related terms of interest
- Not used in simple hierarchical taxonomies
- Between terms in the same hierarchy with overlapping meaning
  - Boats – Ships
  - Taxonomists – Information architects
  - Middle East – North Africa
  - Telecommunications industry – Media industry
- Between terms in different hierarchies
  - Food – Cooking
  - Infections – Antibiotics
  - Environmental protection – Pollution
  - Auto repair – Automobiles
  - Engineers – Engineering
  - Literature – Books
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Taxonomy Governance & Maintenance

For large taxonomies

Taxonomy “governance” encompasses:

- Maintenance
- Policy/rules creation and enforcement
- Metadata specification

Concerns the taxonomy and associated materials:

- Editorial style guide
- Taxonomy training materials
- Metadata standard
- Team rules and procedures (subject to executive review)
Taxonomy Governance & Maintenance

Need to Determine:

- Kinds of changes and their costs
- Kinds of info needed to determine the changes
- What group should maintain the taxonomy
- What kinds of rules should be followed.
- What the group does beyond maintaining the taxonomy
- The processes for changes
  - Comment-handling, appeals, issue logs, announcements, update schedules, etc
Taxonomy Governance & Maintenance

Maintenance deals with changes:

- Terminology changes over time.
- New content (documents, texts, images) brings up new concepts.
- Some content might get dropped.
- New requirements, users, needs, trends, markets, etc. arise.
- User feedback suggests improvements.
Taxonomy Governance & Maintenance

Maintenance requires review of:

- Newly added content sources or latest issues of periodicals
- Sections of the CV covering high-change topics (politics, technology, current events)
- End-user search logs, click-trail reports
- Indexing (human or auto) to find:
  - high-use terms needing further differentiation
  - low/no-use terms that should be merged
  - identifiable indexing errors

- Maintenance may require scheduled updates, if the taxonomy creation/maintenance tool and the indexing system are not integrated.
Outline

1. Taxonomy definitions
2. Why have a taxonomy
3. Deciding on the taxonomy user interface
4. Deciding on the taxonomy scope
5. Choosing the taxonomy source
6. Taxonomy terms and relationships
7. Taxonomy governance and maintenance
8. Resources
Resources

- Software
- Books
- Organizations
- Discussion groups
- Workshops and seminars
- Web Sites
Resources

Software
Can export terms, synonyms, term relationships, and other information as XML or CSV (comma delimited) files

Single-user Windows desktop software (may also have multi-user versions):

- MultiTes Pro www.multites.com
- WebChoir TCS-10 Personal www.webchoir.com
- Term Tree 2000 www.termtree.com.au
- TheW32 (freeware) http://publish.uwo.ca/~craven/freeware.htm
Resources

Software

Large-scale multi-user client-server systems (Windows or via the Web):

- Data Harmony (Access Innovations) www.dataharmony.com
- Synaptica (Dow Jones) www.synaptica.com
- Wordmap (Wordmap Inc.) www.wordmap.com
- ConceptChoir (WebChoir Inc.) www.webchoir.com
- STAR/Thesaurus (Cuadra Associates) www.cuadra.com
- a.k.a. (Synercon Management Consultants) www.a-k-a.com.au
<table>
<thead>
<tr>
<th>Term</th>
<th>Status</th>
<th>Flag</th>
<th>Relationships</th>
<th>Notes</th>
<th>Categories</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gikuyu</td>
<td>A</td>
<td></td>
<td>ASSOC(2), BT(1)</td>
<td></td>
<td>Thing</td>
<td>ENG</td>
</tr>
<tr>
<td>Giza</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td>Place</td>
<td>ENG</td>
</tr>
<tr>
<td>Globalization</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td>Thing</td>
<td>ENG</td>
</tr>
<tr>
<td>Goans</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td>Person</td>
<td>ENG</td>
</tr>
<tr>
<td>Golan Heights</td>
<td>A</td>
<td></td>
<td>BT(2)</td>
<td></td>
<td>Place</td>
<td>ENG</td>
</tr>
<tr>
<td>Gonds</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td>Person</td>
<td>ENG</td>
</tr>
<tr>
<td>Government agencies</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Government agency directors</td>
<td>A</td>
<td></td>
<td>ASSOC(1), BT(1)</td>
<td></td>
<td>Person</td>
<td>ENG</td>
</tr>
<tr>
<td>Government agency staff</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td>Person</td>
<td>ENG</td>
</tr>
<tr>
<td>Government bodies &amp; agencies</td>
<td>A</td>
<td></td>
<td>ASSOC(2), BT(2), IN(1), NT(6), UF(3)</td>
<td></td>
<td>Organization</td>
<td>TIE</td>
</tr>
<tr>
<td>Governmental agencies</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Governmental bodies</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Governors (state)</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greece</td>
<td>A</td>
<td>ASSOC(3)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greek</td>
<td>A</td>
<td>ASSOC(2)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greek Catholics</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greek Orthodox</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greeks</td>
<td>A</td>
<td>ASSOC(2)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Greenland</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Grenada</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Grenade attacks</td>
<td>A</td>
<td></td>
<td>BT(2)</td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Grenadians</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Ground force offenses</td>
<td>A</td>
<td></td>
<td>BT(1)</td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guangxi Zhuang</td>
<td>A</td>
<td>ASSOC(2)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guarani</td>
<td>A</td>
<td>ASSOC(3)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guatemala</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guatemalans</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guest workers</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guinea</td>
<td>A</td>
<td>ASSOC(3)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guinea-Bissau</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guinea-Bissauans</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guineans</td>
<td>A</td>
<td>ASSOC(2)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Gujarati</td>
<td>A</td>
<td>ASSOC(2)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Gujuratis</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Gutierrez, Carlos</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guyana</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Guyanese</td>
<td>A</td>
<td>ASSOC(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
<tr>
<td>Gypsies</td>
<td>A</td>
<td>USE(1)</td>
<td></td>
<td></td>
<td></td>
<td>ENG</td>
</tr>
</tbody>
</table>
An oily substance obtained from cream by churning.

Reference
www.fred.com/aaa/co...
www.termtree.com.au

Class
Dairy Industry

Code
Export
Import

Date Created
6/9/1995

Date Modified
10/26/2003
Resources

Books


Resources

Organizations

- Information Architecture Institute
  http://iainstitute.org

- Special Libraries Association (SLA)
  http://www.sla.org

- American Society of Information Science & Technology
  http://www.asis.org

- American Society for Indexing - Taxonomies and Controlled Vocabularies Special Interest Group
  http://www.taxonomies-sig.org
Resources

Discussion Groups

- Taxonomy Community of Practice
  http://finance.groups.yahoo.com/group/TaxoCoP

- Taxonomies & Controlled Vocabularies SIG, ASI
  http://finance.groups.yahoo.com/group/taxonomies

- Metadatalibrarians
  http://metadatalibrarians.monarchos.com
Resources

Workshops and Seminars

- Taxonomy Community of Practice Webinar phone calls
  - $50 each. Occasionally free vendor-sponsored calls.
  - Usually first Wednesday of the month, 1:00-2:00 pm EST
  - www.earley.com/TaxoCoP.asp

- "Taxonomies and Controlled Vocabularies"
  Simmons College Graduate School of Library and Information Science Continuing Education Program
  - Online: 5 weeks, $250, next session February 2009
  - Onsite: Boston, full day, $220, next session March 28, 2009
  - www.simmons.edu/gslis/continuinged/workshops

- Taxonomy Boot Camp conference
  - Information Today Inc.
  - Next: November 19-20, 2009, San Jose, CA
  - www.taxonomybootcamp.com/2009
Resources

Web Sites

- Taxonomy Community of Practice Wikispace, http://taxocop.wikispaces.com
- Taxonomy Guide, Faculty of Information Studies, University of Toronto, http://plc.fis.utoronto.ca/tgdemo/default.asp
- Thesaurus Construction tutorial by Tim Craven, http://publish.uwo.ca/~craven/677/thesaur/main00.htm
- Willpower Information: Publications on thesaurus construction and use, http://www.willpowerinfo.co.uk/thesbibl.htm
- Earley & Associates http://www.earley.com
- Taxonomy Strategies http://www.taxonomystrategies.com
Questions

Heather Hedden
Hedden Information Management
98 East Riding Drive
Carlisle, MA 01741
USA
www.hedden-information.com
heather@hedden.net
1-978-371-0822
1-978-467-5195 (mobile)