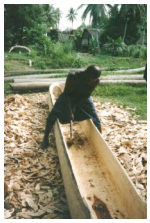
Adding metadata—and using it



Course material prepared by

Greenstone Digital Library Project
University of Waikato, New Zealand

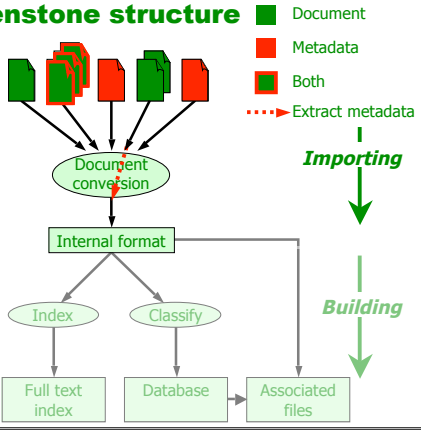
Agenda

- Overview of collection building
- Metadata sets
- Adding metadata in GLI (+demo)
- GLI tricks
- Review: Searching and browsing
- General Options
- Plugins
- Searching – indexes
- Browsing – classifiers
- Simple formatting
- Form search
- Partitioning indexes
- PHIND phrase index
- CDS/ISIS
- GEMS: metadata set editing

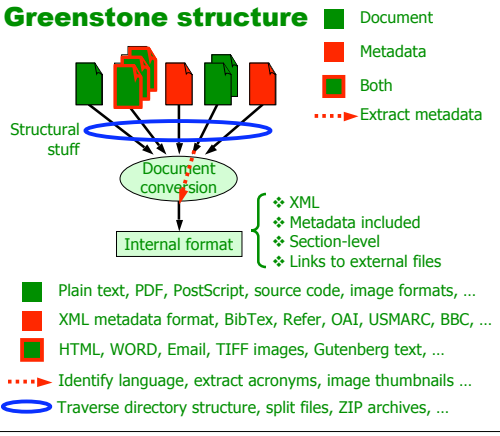
Collection building process

- Input: Set of documents + metadata
  - Various formats, e.g. Word, PDF, HTML, images …
- Import: Conversion to common internal (XML) format
  - Uses third party tools
- Build: Create indexes, browsing structures, metadata database
- Output: Greenstone collection

Greenstone structure



Greenstone structure



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Metadata Sets

- Standard metadata sets
  - Librarian added
  - Good quality, but high cost
  - Many types
    - Dublin Core (dc)
    - Development Library Subset (dls)
    - New Zealand Government Locator Service (nzgls)
- Greenstone extracted metadata (ex)
  - Automatically extracted
  - Non-editable
  - May be poor quality, but cheap

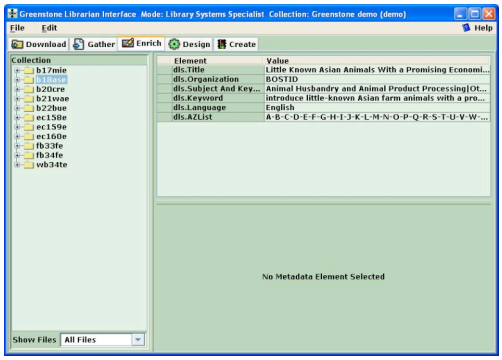
Dublin Core metadata

Metadata	Tag	Definition
Title	dc.Title	Name given to the resource
Creator	dc.Creator	Entity primarily responsible for making the content of the resource
Subject and keywords	dc.Subject	Topic of the content of the resource
Description	dc.Description	Account of the content of the resource
Publisher	dc.Publisher	Entity responsible for making the resource available
Contributor	dc.Contributor	Entity responsible for making contributions to the content of the resource
Date	dc.Date	Date associated with an event in the life cycle of the resource
Resource type	dc.Type	Nature or genre of the content of the resource
Format	dc.Format	Physical or digital manifestation of the resource
Resource identifier	dc.Identifier	Unambiguous reference to the resource within a given context: this is the object identifier or OID
Source	dc.Source	Reference to a resource from which the present resource is derived
Language	dc.Language	Language of the intellectual content of the resource
Relation	dc.Relation	Reference to a related resource
Coverage	dc.Coverage	Extent or scope of the content of the resource
Rights management	dc.Rights	Information about rights held in and over the resource

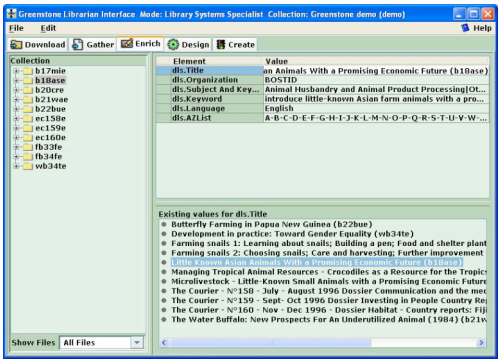
DLS metadata

Metadata	Definition
dls.Title	Title
dls.Keyword	Keyword (originally "How To")
dls.Organization	Organization that produced the document
dls.Language	Language of the document
dls.Subject and Keywords	Hierarchical subject metadata
dls.AZList	A-Z range into which this document's title falls

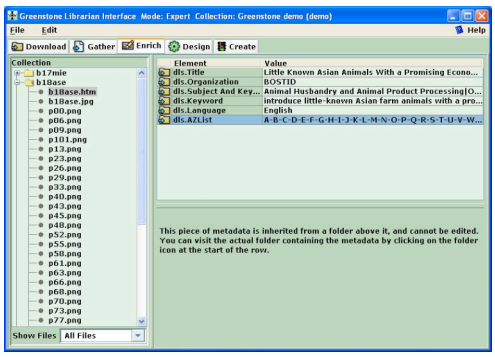
Example of DLS metadata



Example of DLS metadata



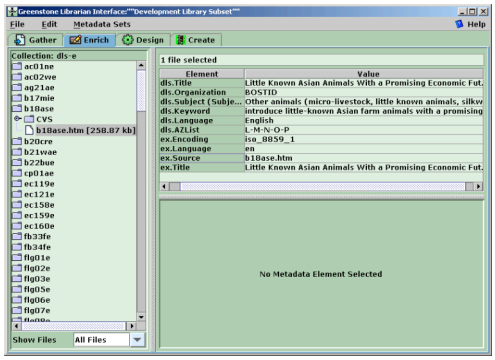
Example of DLS metadata



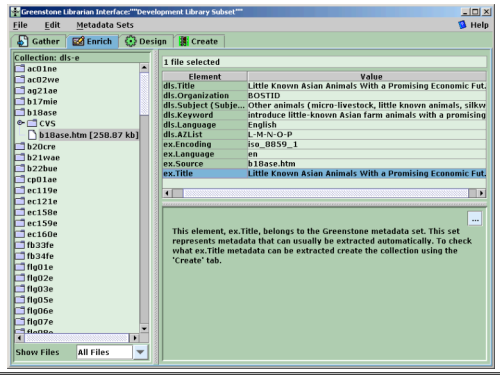
Extracted metadata

Metadata	Definition
ex.Title	Title extracted from HTML, Word, PDF
ex.Source	Name of source file, e.g. Apache.html
ex.Language	Language of document, e.g. en, sp, fr
ex.Encoding	Encoding of document, e.g. iso_8859_1
…	…
ex.Acronym	Acronyms that appear in the document
…	…

Example of extracted metadata



Example of extracted metadata



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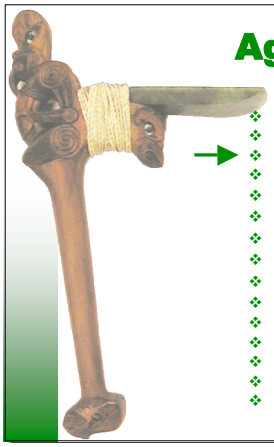

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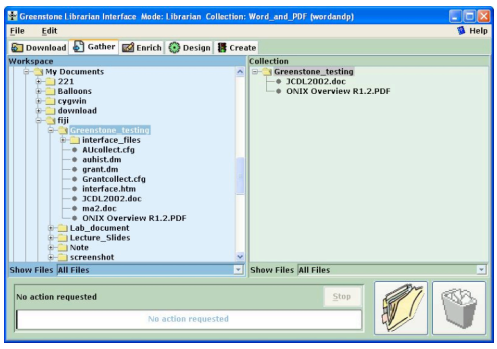
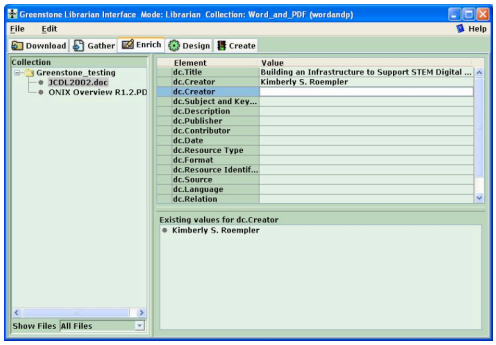
GLI: Adding metadata

- Enrich pane
- Folder level or document level
- Specified metadata set
- Can view extracted metadata but not edit

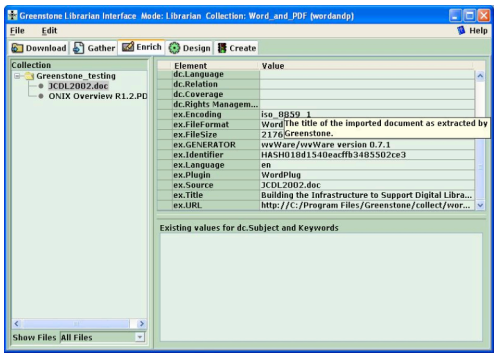
GLI: adding metadata



GLI: adding metadata



Extracted Metadata



Greenstone Librarian Interface demo: adding metadata

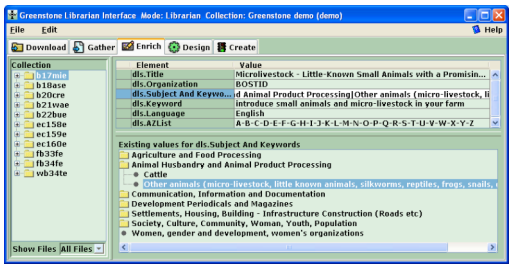
Hierarchical Metadata

- Metadata is often hierarchical:

- How is this done in Greenstone?

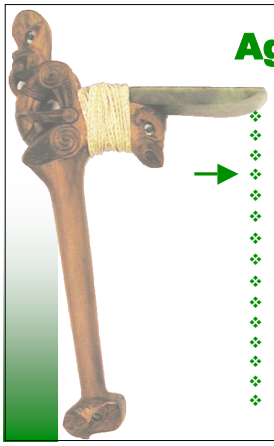
Hierarchical Metadata

- In the GLI's Enrich pane, use the pipe character (|) to separate the levels



- Preview the hierarchy in the value tree

Agenda



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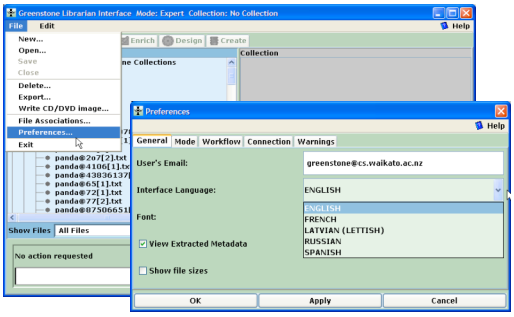
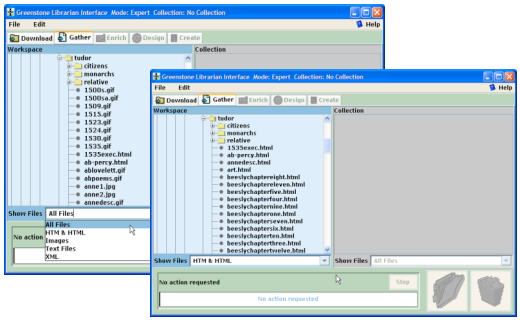
GLI Tricks

- General Preferences



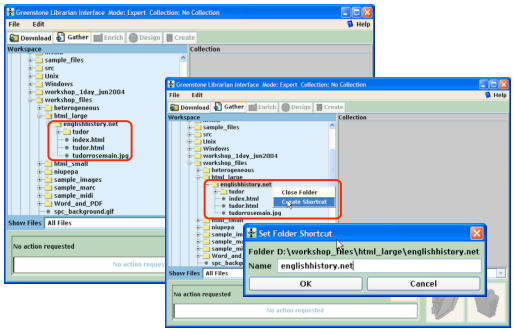
GLI Tricks

- File Filtering

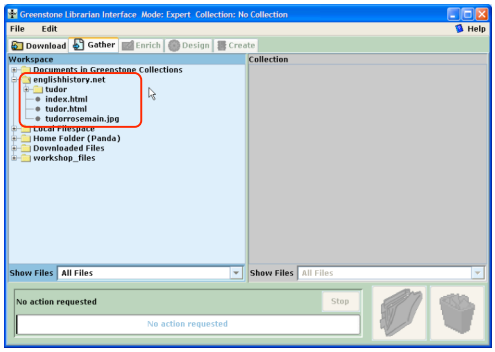


GLI Tricks

- Create file folder shortcut

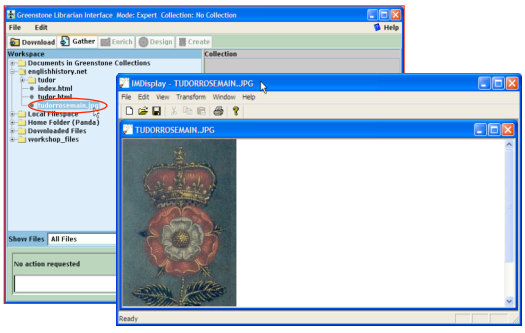


GLI Tricks



GLI Tricks

- Viewing files: Double-clicking



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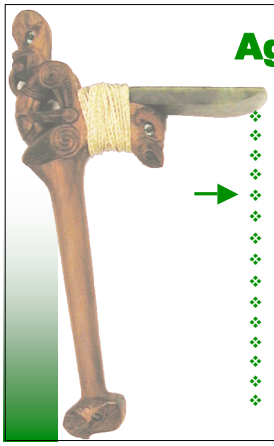

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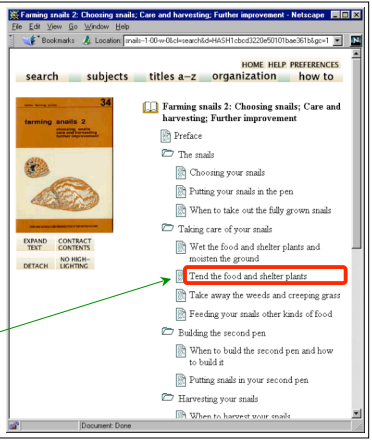
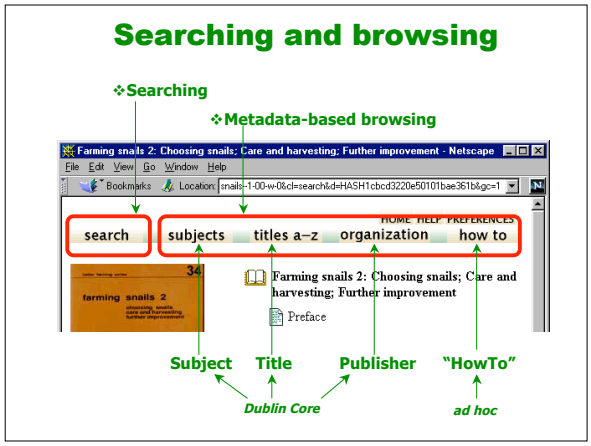
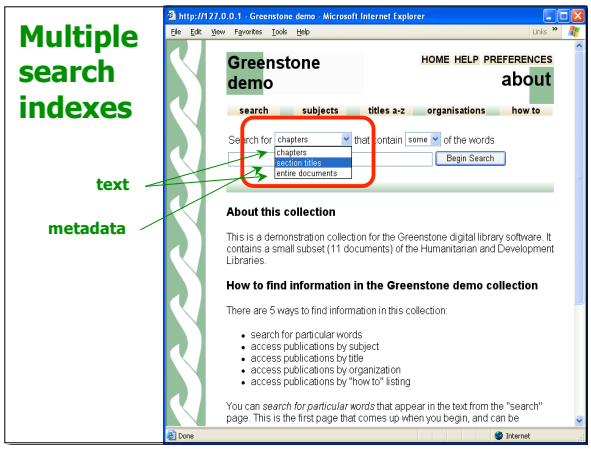
Hierarchical document model



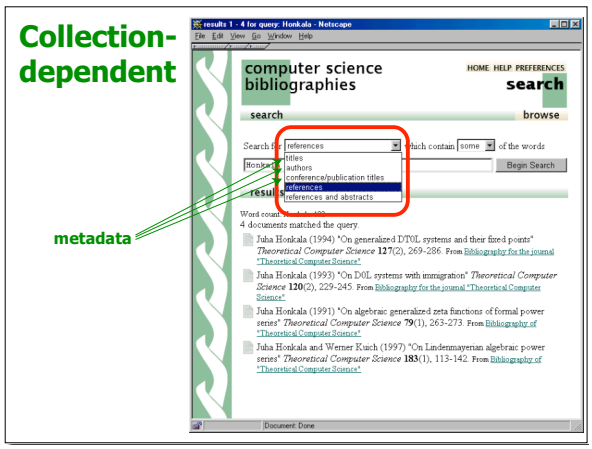
Searching and browsing



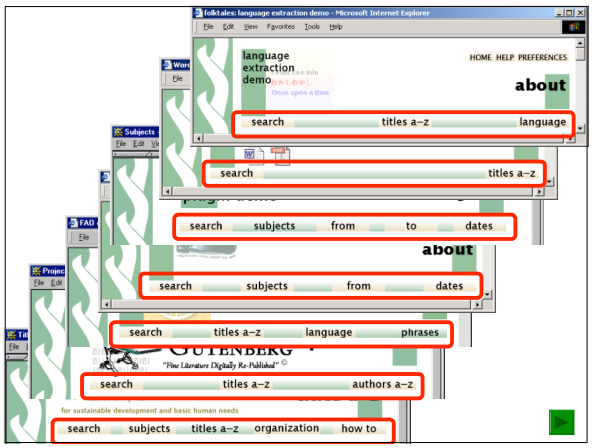
Multiple search indexes



Collection-dependent

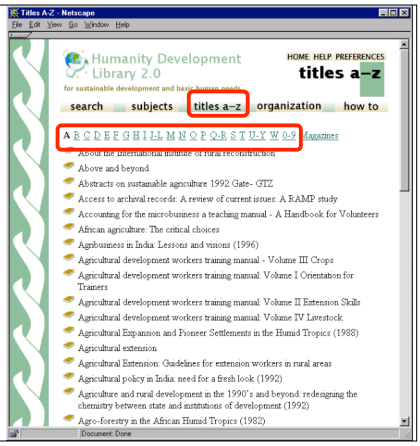


Multilingual searching

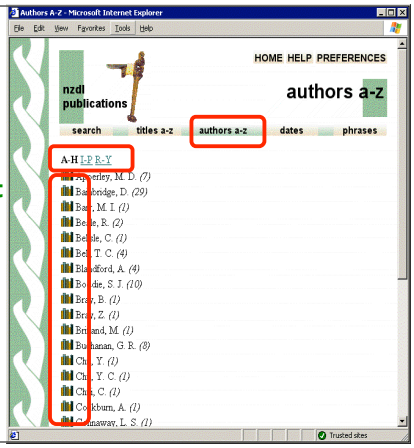


Browsing using *classifiers*

AZList classifier (*Title* metadata)



AZCompactList classifier (*Creator* metadata)



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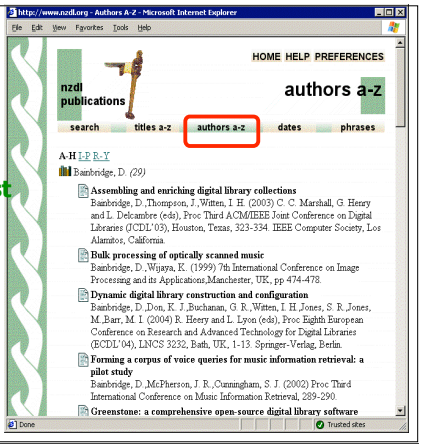
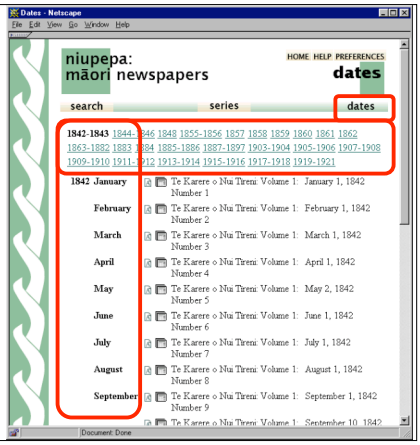
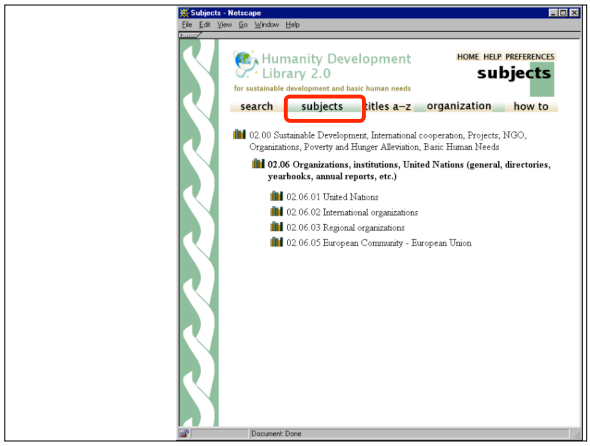


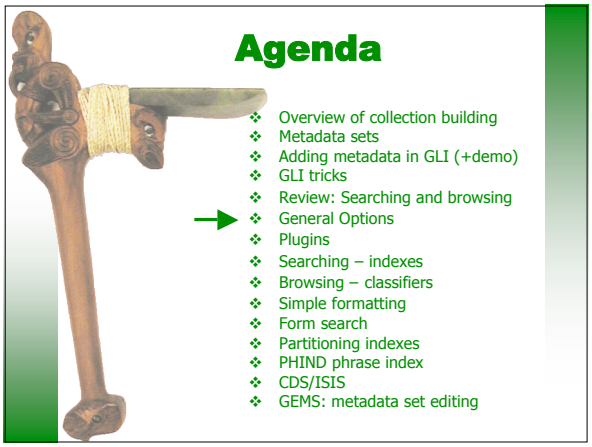
GenericList classifier (*Title* metadata)

DateList classifier (*Date* metadata)



Hierarchy classifier (*Subject* metadata)


Humanity Development Library 2.0
for sustainable development and basic human needs
HOME HELP PREFERENCES
subjects
search
subjects
titles a–z
organization
how to
02.00 Sustainable Development, International cooperation, Projects, NGO, Organizations, Poverty and Hunger Alleviation, Basic Human Needs
02.06 Organizations, institutions, United Nations (general, directories, yearbooks, annual reports, etc.)
02.06.01 United Nations
02.06.02 International organizations
02.06.03 Regional organizations
02.06.05 European Community - European Union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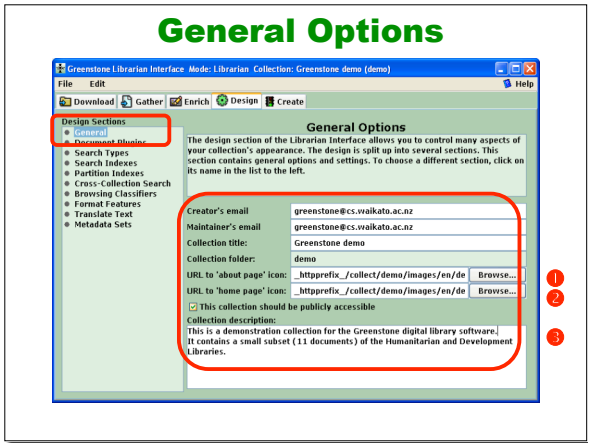
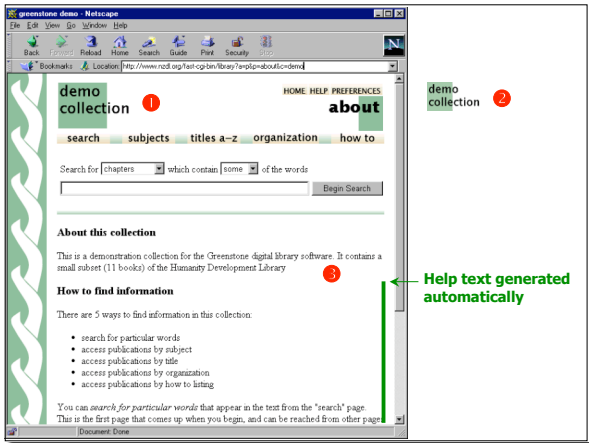
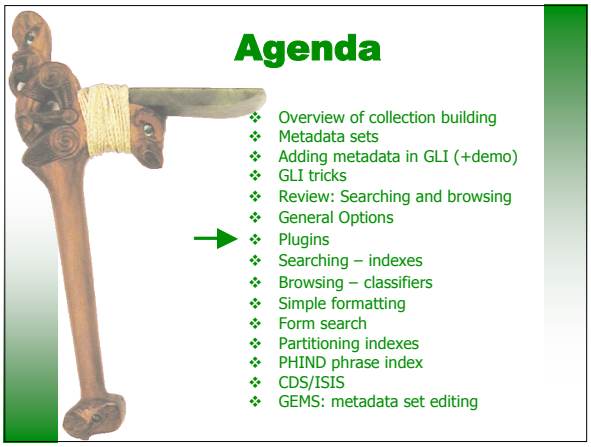

General Options
Greenstone Librarian Interface Mode: Librarian Collection: Greenstone demo (demo)
Download
Gather
Enrich
Design
Create
Design Sections
General
Search Types
Search Indexes
Partition Indexes
Cross-Collection Search
Browsing Classifiers
Format Features
Translate Text
Metadata Sets
General Options
Creator's email
greenstone@cs.waikato.ac.nz
Maintainer's email
greenstone@cs.waikato.ac.nz
Collection title:
Greenstone demo
Collection folder:
demo
This collection should be publicly accessible
Collection description:
1
2
3


demo collection
1
HOME HELP PREFERENCES
about
search
subjects
titles a–z
organization
how to
About this collection
How to find information
demo collection
2
Help text generated automatically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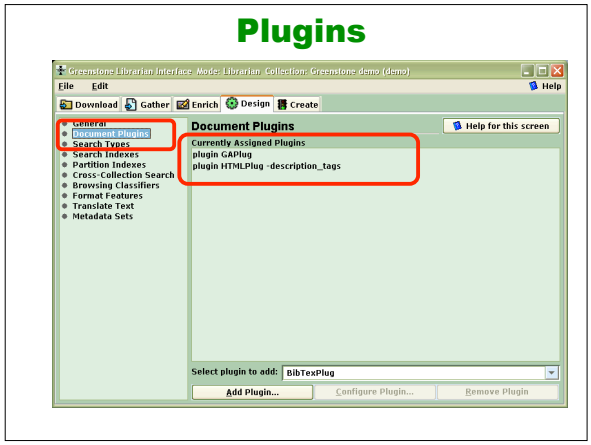
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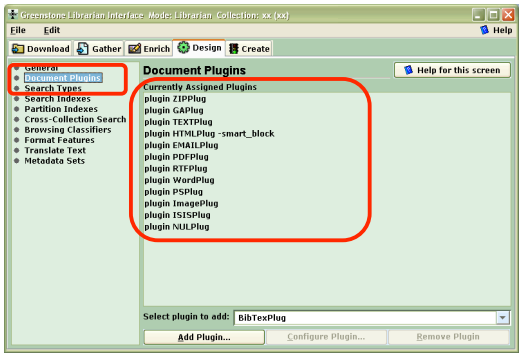
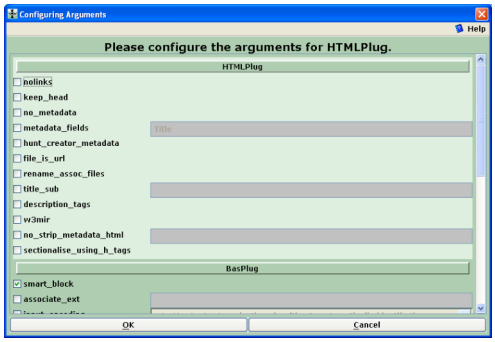
Format Features
Translate Text
Metadata Sets
Document Plugins
Help for this screen
Currently Assigned Plugins
plugin GAPlug
plugin HTMLPlug -description_tags
Select plugin to add:
BibTexPlug
Add Plugin...
Configure Plugin...
Remove Plugin

Plugins



Plugin Options



Plugins

Used by collection-building software to accomplish format-specific parsing of source documents

Plugin pipeline: files are passed to each plugin in turn until one is found that can process it

TEXTPlug
HTMLPlug
EMAILPlug
WORDPlug
RTFPlug
PDFPlug
PSPlug
ImagePlug
PPTPlug
ISISPlug
TCCPlug ...

- GAPlug — processes doc.xml files generated during *import*
- ArcPlug — processes filelist in *archives.inf*
- RecPlug — recurses through a directory structure

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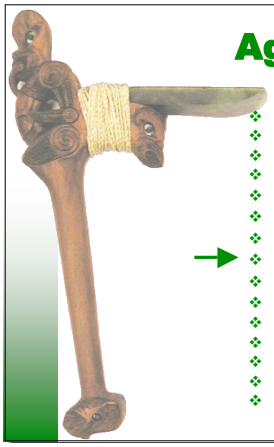

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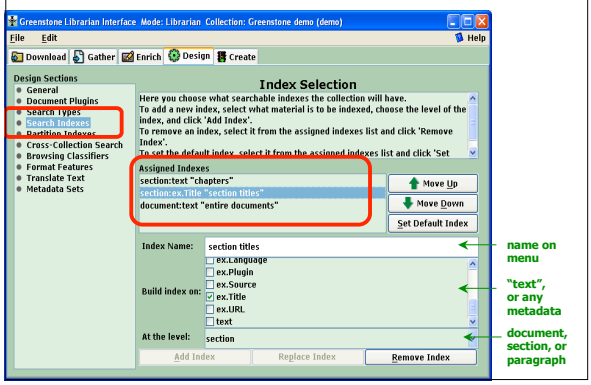
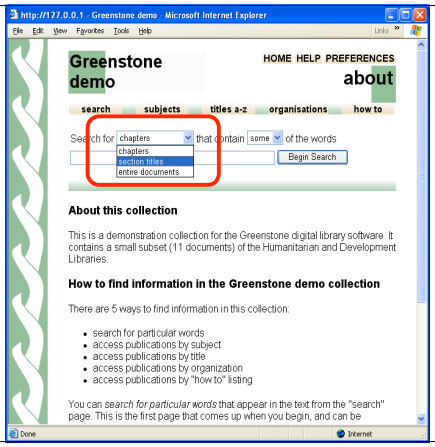
Search Indexes



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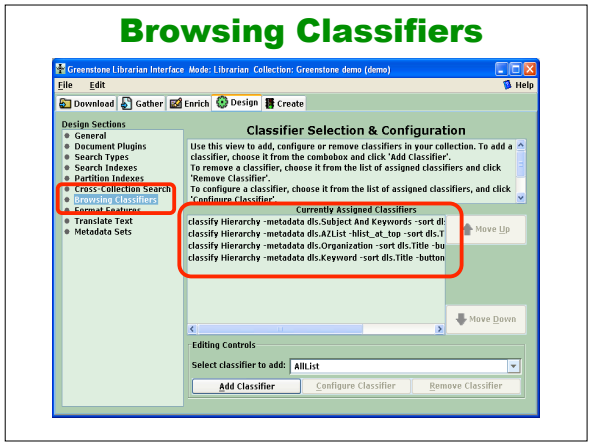
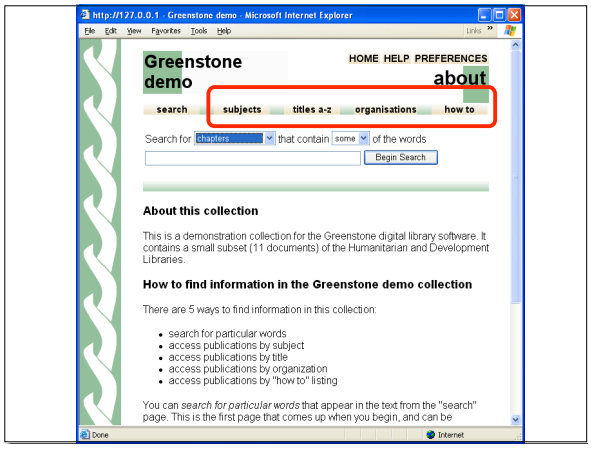
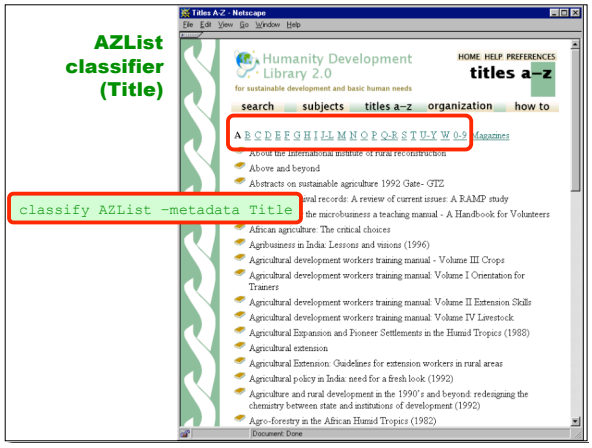
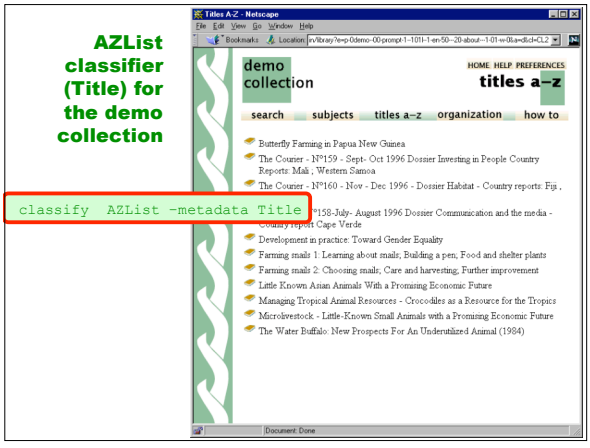
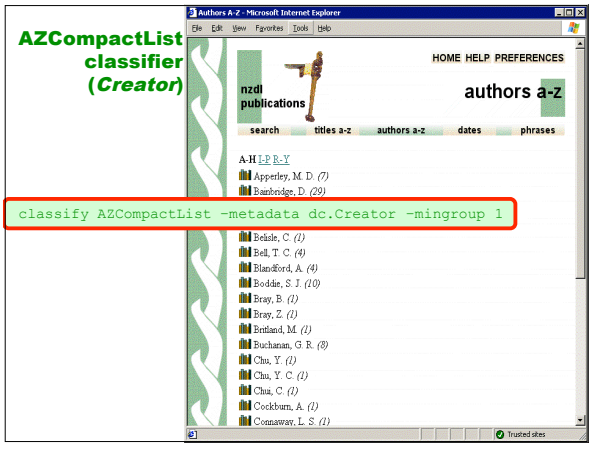

Browsing Classifiers
Classifier Selection & Configuration
Browsing Classifiers
Currently Assigned Classifiers
Editing Controls
Add Classifier

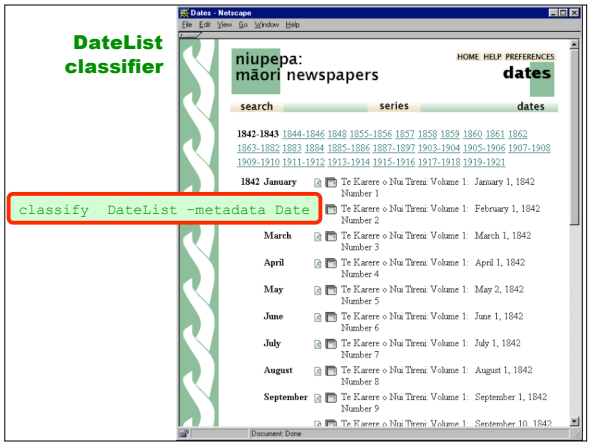

Greenstone demo
HOME HELP PREFERENCES
about
search subjects titles a-z organisations how to
About this collection
How to find information in the Greenstone demo collection


AZList classifier (Title)
classify AZList -metadata Title
titles a–z
search subjects titles a–z organization how to


AZList classifier (Title) for the demo collection
classify AZList -metadata Title
demo collection
titles a–z


AZCompactList classifier (Creator)
classify AZCompactList -metadata dc.Creator -mingroup 1
nzdl publications
authors a-z

DateList classifier



search subjects titles a–z organization how to

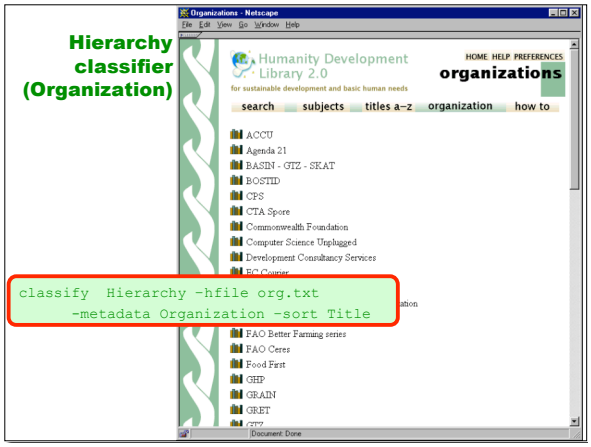
```
classify Hierarchy -hfile org.txt
    -metadata Organization -sort Title
```

etc/org.txt

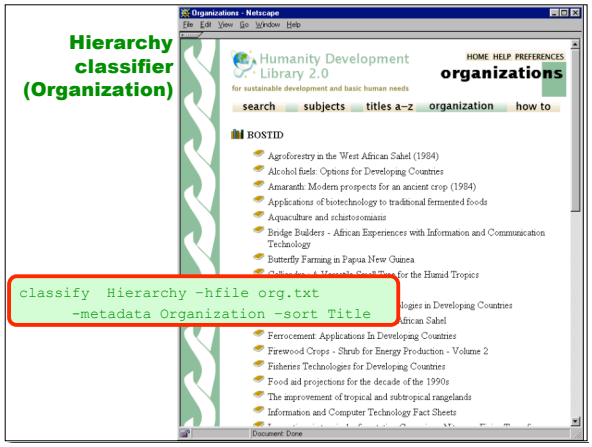
identifier (matches *Organization* metadata value)
position in the hierarchy that the browser implements
title to be displayed in hierarchy browser

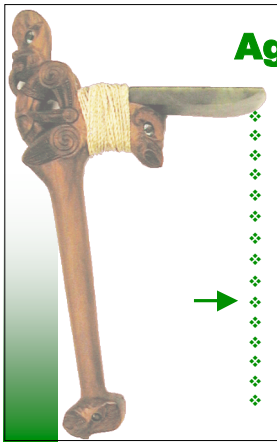
```
accu        1       ACCU
ag21        2       "Agenda 21"
bgz         3       "BASIN - GTZ - SKAT"
bostid      4       BOSTID
cps         5       CPS
cpas        6       "CTA Spore"
cf          7       "Commonwealth Foundation"
csu         8       "Computer Science Unplugged"
dcs         9       "Development Consultancy Services"
ecc         11      "EC Courier"
ecdg8       12      "EC DG8"
echo        13      "Educational Concerns for Hunger Organization"
fao         14      FAO
faobfs      15      "FAO Better Farming series"
ceres       16      "FAO Ceres"
ff          17      "Food First"
```

Hierarchy classifier (Organization)



Hierarchy classifier (Organization)





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- Review: Searching and browsing
- General Options
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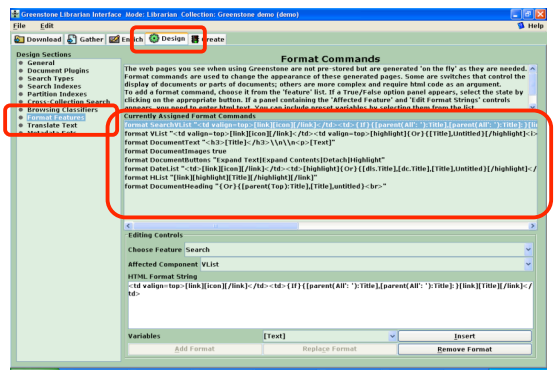
- Browsing – classifiers
- Simple formatting
- Form search
- Partitioning indexes
- PHIND phrase index
- CDS/ISIS
- GEMS: metadata set editing

Format Features



Format Statements

- **VList** – vertical lists: search, classifiers, document table of contents
- **HList** – horizontal lists: classifiers
- **SearchVList**, **CL1VList** – individual vertical lists
- **DocumentImages**/**DocumentHeading**/ **DocumentContents** – document header display
- **DocumentText** – document display

Search VList

CL1 VList

CL2 HList

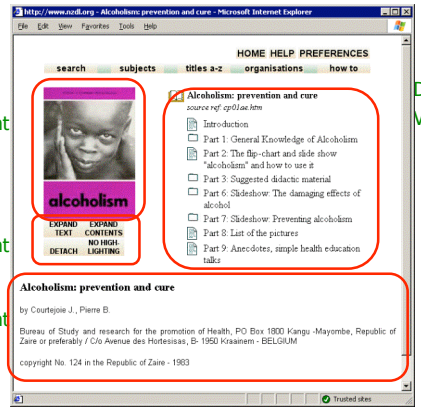
CL2 VList

Document Images

Document Buttons

Document Text

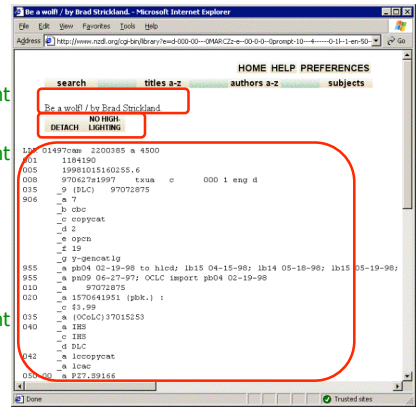
Document VList

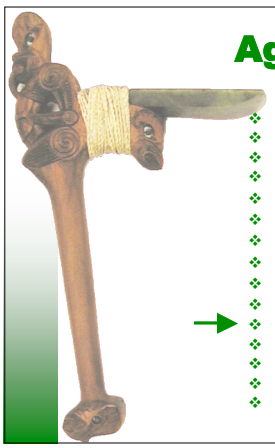


Document Heading

Document Buttons

Document Text





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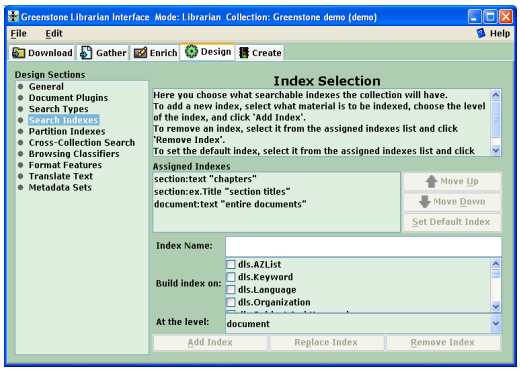
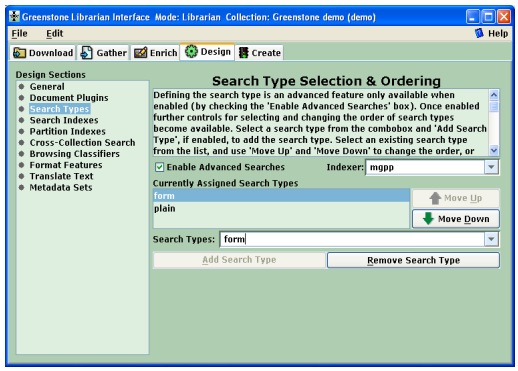
Search Types

- "Enable search types" – allows fielded searching
- MGPP/Lucene
- Form/plain – can switch on preferences
- Different index specification

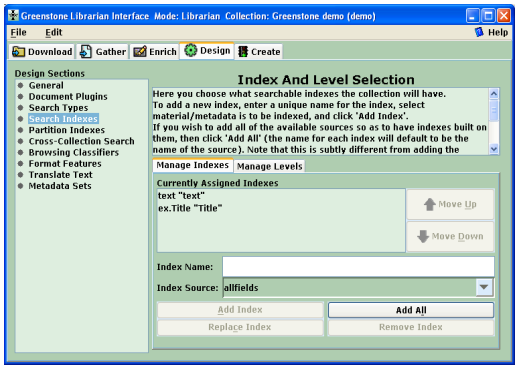
Default Search Indexes



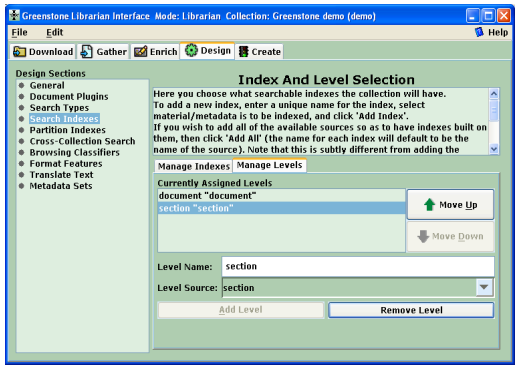
Search Types



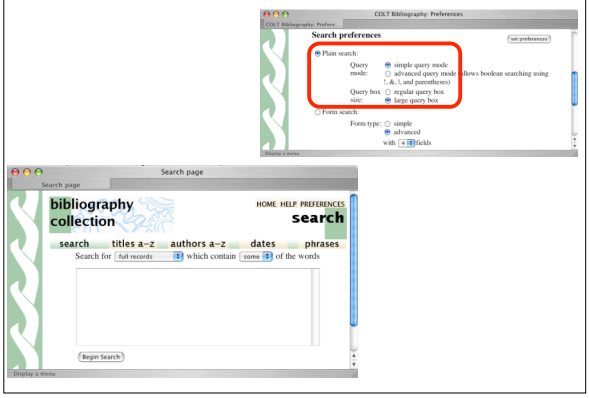
Form Search Indexes: Indexes



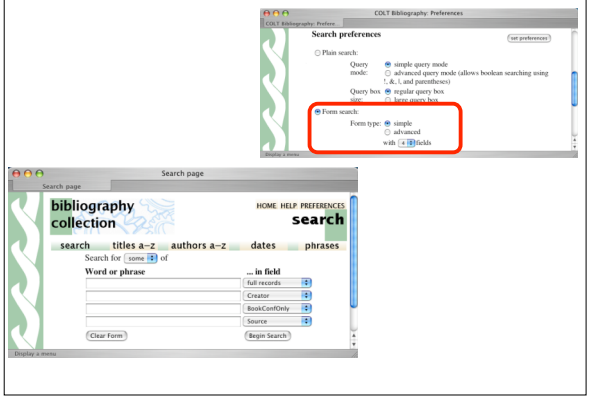
Form Search Indexes: Levels



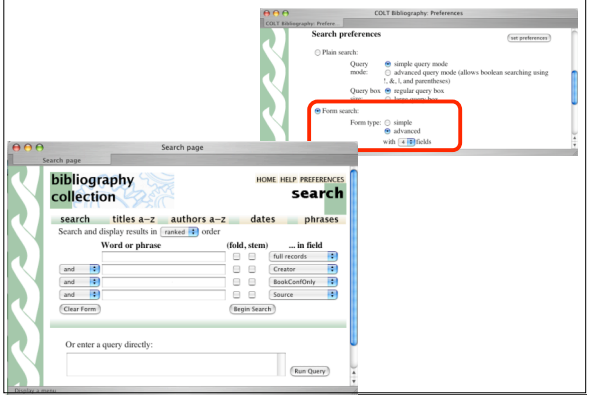
Plain search



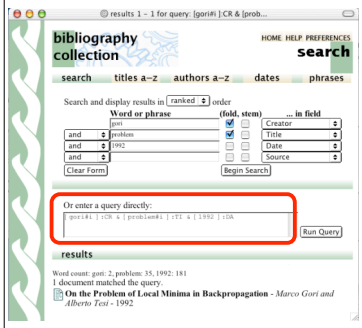
Simple form search



Advanced form search

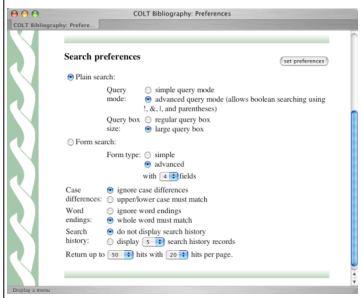


Advanced form search



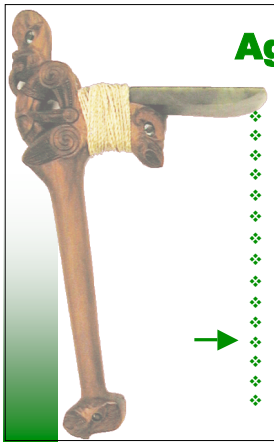
- *Fielded searching*
  [terms]:Field
  Specifies searching within a particular field
- *Term modifiers*
  #icus /x
  Stemming, casefolding and weighting
- *Fields*
  - TI title
  - CR creator
  - SU subject
  - TX text
  - ...

Advanced plain search



- *Regular vs large query box*
- *Boolean operators*
  - & AND
  - | OR
  - ! NOT
- *Phrase searching ("...")*
- *Case folding*
- *Stemming (word endings*
- *Search history*
- *Number of returned results*

Agenda



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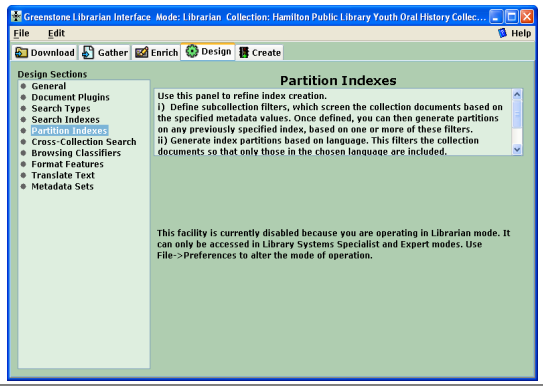
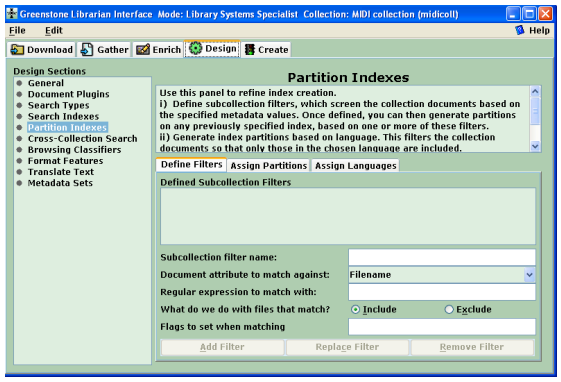
Partition Indexes

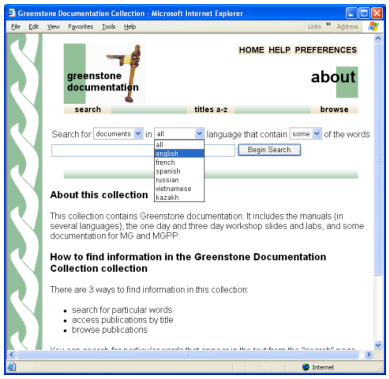
- Searching within a single collection
- The indexes are split based on subcollection definitions
  - E.g. language, file types, metadata
- Browsing classifiers contain all the documents
- Library Systems Specialist mode

Partition Indexes

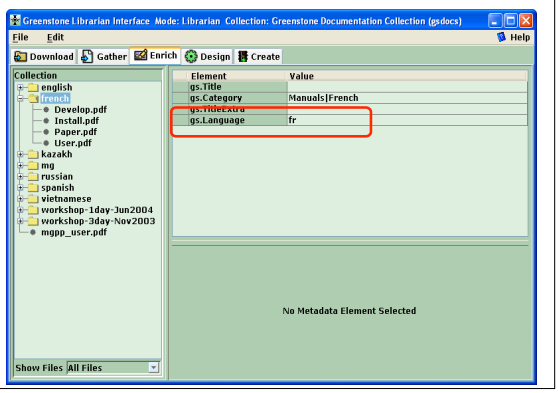




Language partitions



Language metadata



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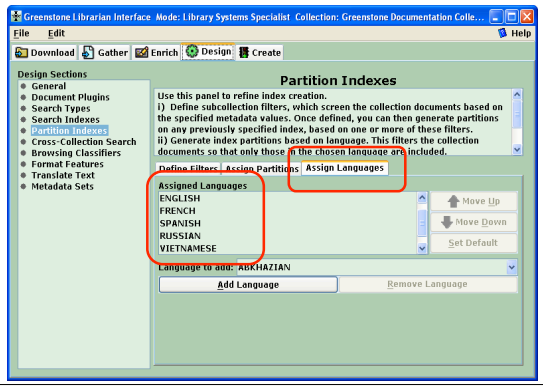
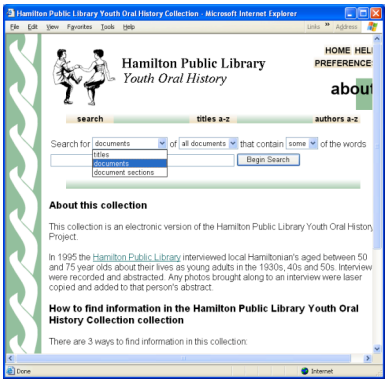
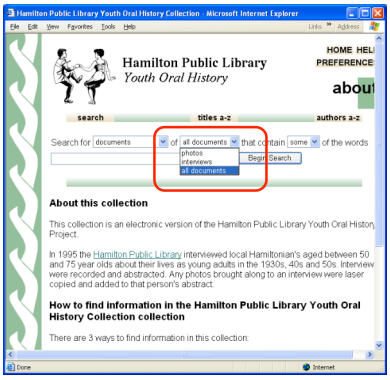


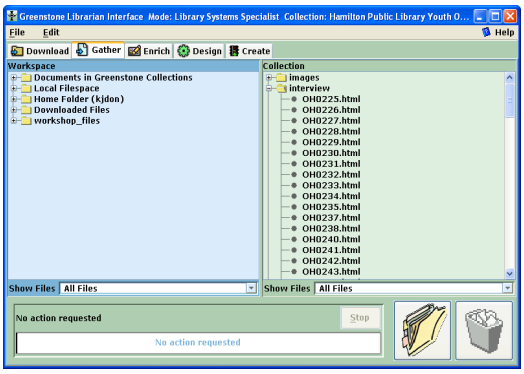
Document type partitions



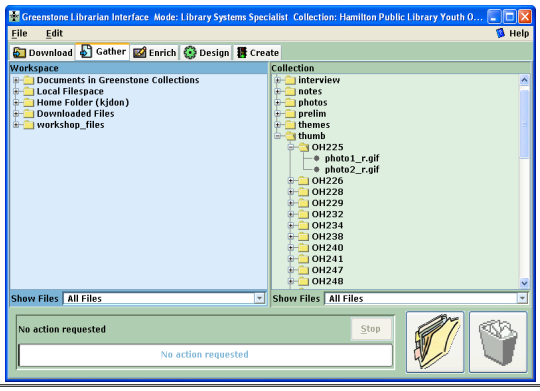
Document type partitions



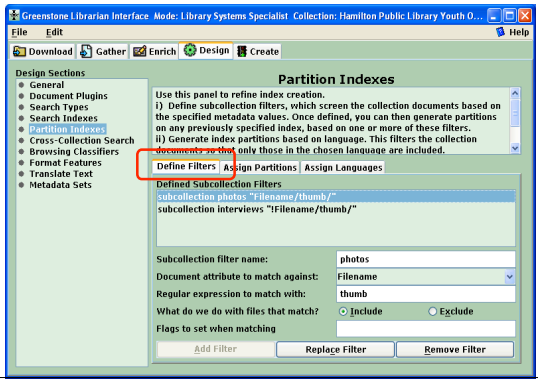
Collection documents



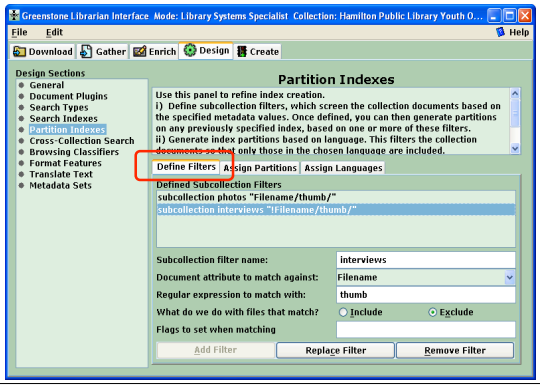
Collection documents



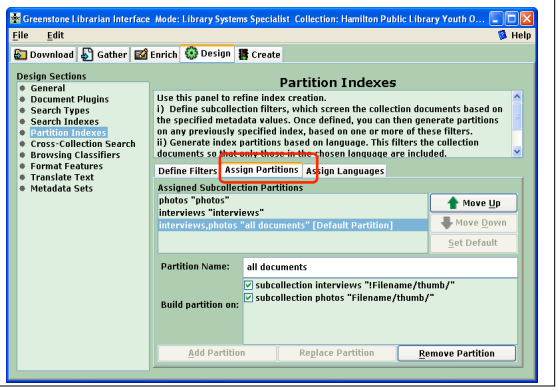
Subcollection filters



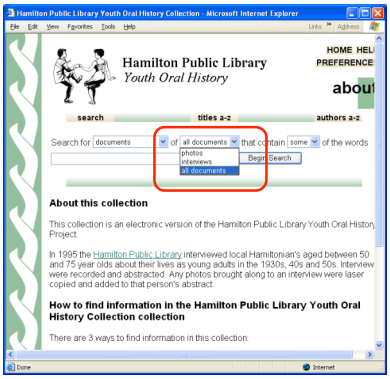
Subcollection filters



Assign partitions



Document type partitions



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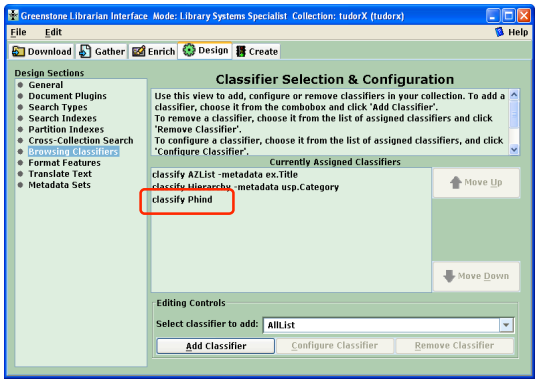
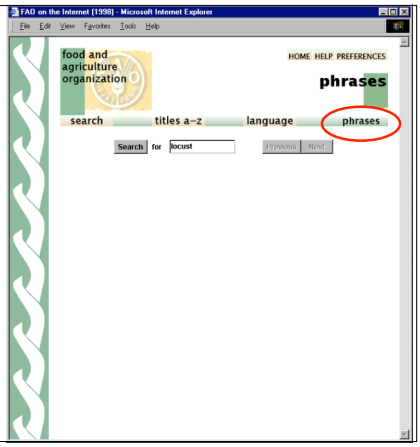
Phind Phrase Index

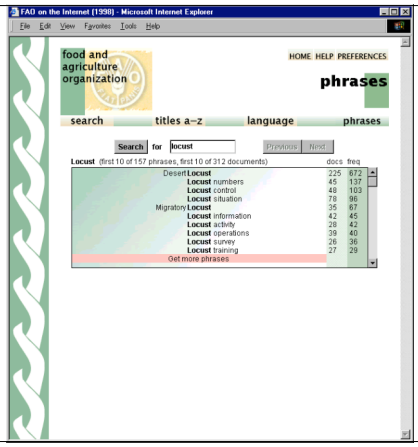


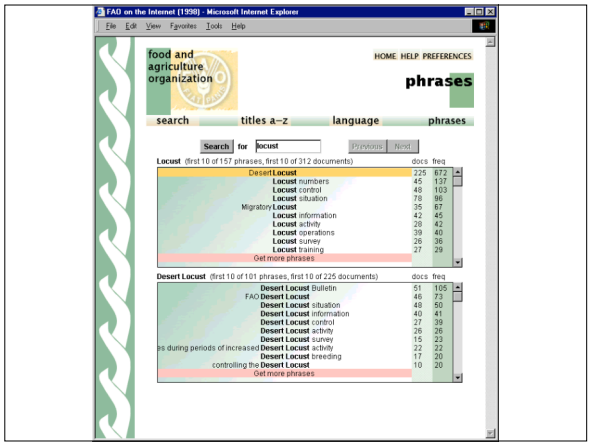
PHIND

Hierarchical index of phrases

- *What's in this collection?*
- *Is it any good?*
- *What coverage for topic X?*
- *My query returned too much/little, what now?*



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Locust information 42 45
Locust activity 28 42
Locust operations 39 40
Locust survey 26 36
Locust training 27 29
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FAO Desert Locust 46 73
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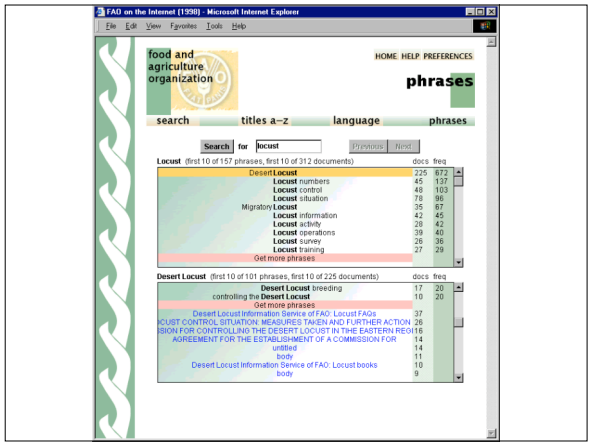
Desert Locust information 40 41
Desert Locust control 27 39
Desert Locust activity 26 26
Desert Locust survey 15 23
Desert Locust activity 22 22
Desert Locust breeding 17 20
controlling the Desert Locust 10 20
Get more phrases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Migratory Locust 35 67
Locust information 42 45
Locust activity 28 42
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AGREEMENT FOR THE ESTABLISHMENT OF A COMMISSION FOR 14
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body 11
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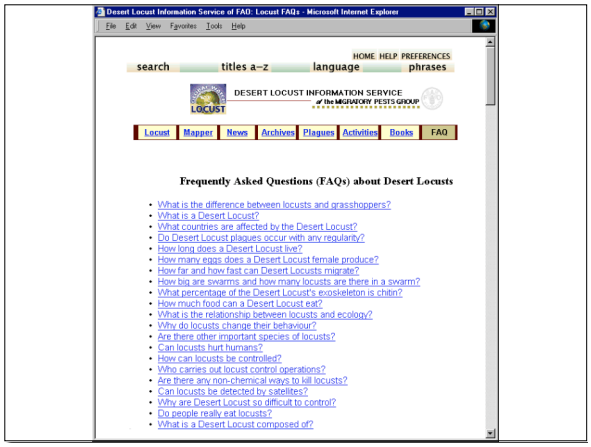
body 9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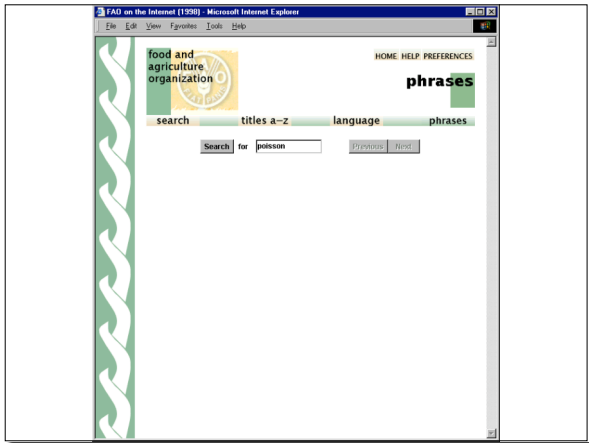
DESERT LOCUST INFORMATION SERVICE
of the MIGRATORY PESTS GROUP
LOCUST
Locust Mapper News Archives Plagues Activities Books FAQ
Frequently Asked Questions (FAQs) about Desert Locusts
What is the difference between locusts and grasshoppers?
What is a Desert Locust?
What countries are affected by the Desert Locust?
Do Desert Locust plagues occur with any regularity?
How long does a Desert Locust live?
How many eggs does a Desert Locust female produce?
How far and how fast can Desert Locusts migrate?
How big are swarms and how many locusts are there in a swarm?
What percentage of the Desert Locust's exoskeleton is chitin?
How much food can a Desert Locust eat?
What is the relationship between locusts and ecology?
Why do locusts change their behaviour?
Are there other important species of locusts?
Can locusts hurt humans?
How can locusts be controlled?
Who carries out locust control operations?
Are there any non-chemical ways to kill locusts?
Can locusts be detected by satellites?
Why are Desert Locust so difficult to control?
Do people really eat locusts?
What is a Desert Locust composed of?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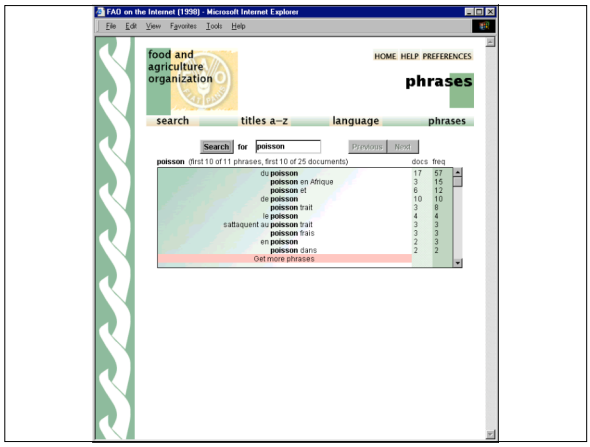
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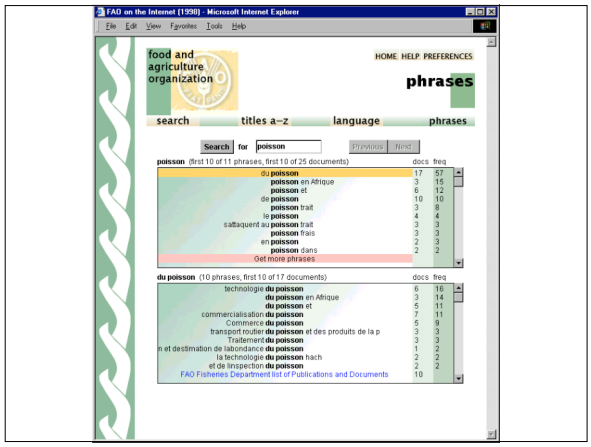
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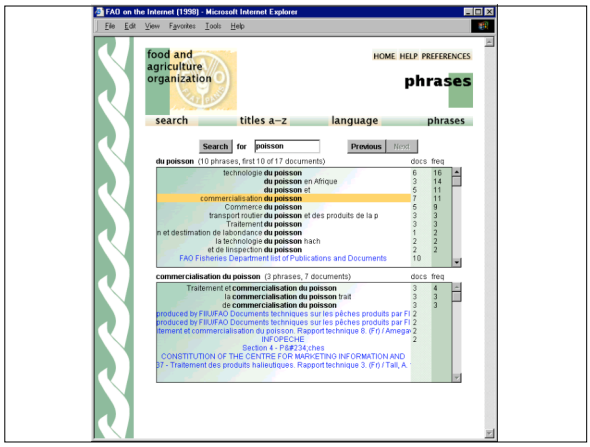
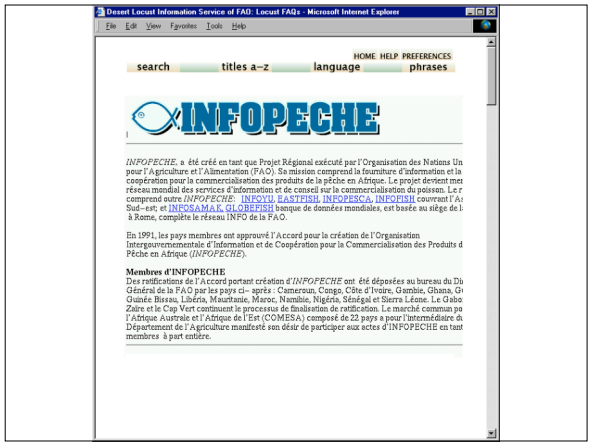




Agenda

- Overview of collection building
- Metadata sets
- Adding metadata in GLI (+demo)
- GLI tricks
- Review: Searching and browsing
- General Options
- Plugins
- Searching – indexes
- Browsing – classifiers
- Simple formatting
- Form search
- Partitioning indexes
- PHIND phrase index
- CDS/ISIS
- GEMS: metadata set editing

CDS/ISIS

- Bibliography collections are typically fairly complex:
  - Form searching
  - Customised query result and browse lists
  - Customised document display
- Let's work through creating a simple collection using a small CDS/ISIS database describing a set of film slides
  (More information in the "Bibliography collection" and "CDS/ISIS" documented example collections)

CDS/ISIS

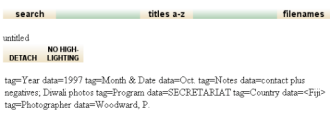
- Add the CDS/ISIS files to a new collection
- After building, let's view the collection:
  - No metadata searching is available:

  - The titles classifier is completely empty!

CDS/ISIS

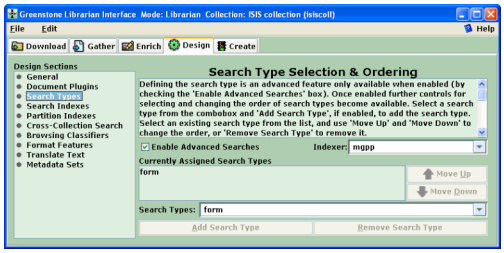
- More problems:
  - The filenames classifier is useless!

  - The document display isn't very pretty:



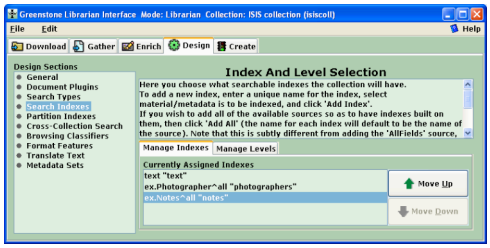
CDS/ISIS: Metadata searching

- To enable form searching, go to the "Search Types" area in the GLI's Design pane
  - Tick "Enable Advanced Searches" on
  - Add the "form" search type, and remove "plain"



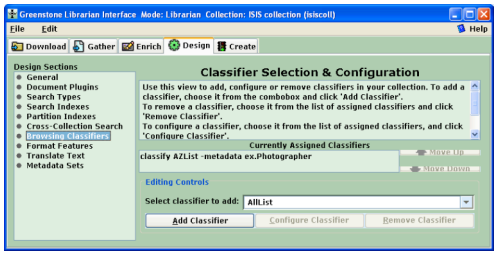
CDS/ISIS: Metadata Searching

- Add metadata indexes in the "Search Indexes" part of the GLI's Design pane
  - Add indexes for Photographer and Notes metadata
  - Remove the useless Source and Title indexes



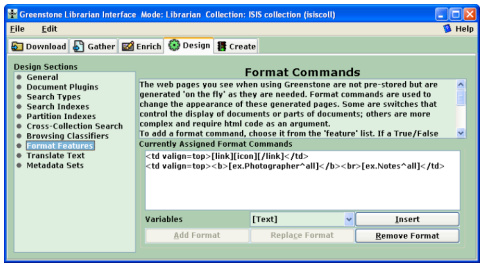
CDS/ISIS: Better browsing

- Remove the existing (useless) classifiers for Title and Source metadata, and add a new one for Photographer



CDS/ISIS: Better browsing

- Change the VList format statement to display the Photographer and Notes metadata:



CDS/ISIS: Document display

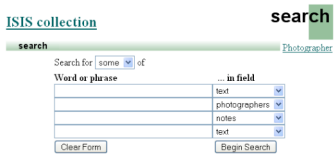
- Next, let's change the DocumentText format statement to show the Photographer and Notes metadata:

```
<center><table width=_pagewidth_><tr><td>Photographer:
</td><td>[ex.Photographer^all]</td></tr><tr><td>Notes:
</td><td>[ex.Notes^all]</td></tr></table></center>
```

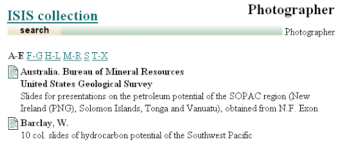
- Then, let's remove those annoying "Detach" and "Highlight" buttons by setting DocumentButtons to empty
- Lastly, clear DocumentHeading to remove the "untitled" at the top of the document

CDS/ISIS: Finished!

- Metadata searching now available:



- Better browsing facilities:



CDS/ISIS: Finished!

- Document display improved:

search Photographer

Photographer: Australia. Bureau of Mineral Resources
United States Geological Survey

Notes: Slides for presentations on the petroleum potential of the SOPAC region (New Ireland (PNG), Solomon Islands, Tonga and Vanuatu), obtained from N.F. Exon

- What could still be improved?
  - More metadata indexes, classifiers
  - Display all fields in the document display
  - Nice images for classifiers
  - …?

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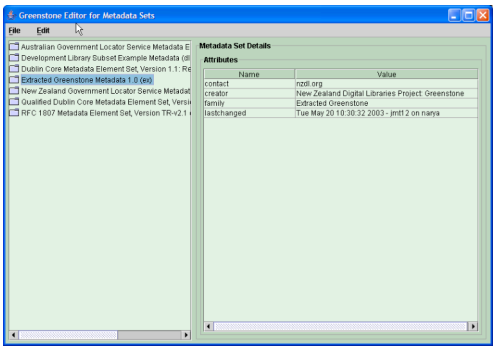
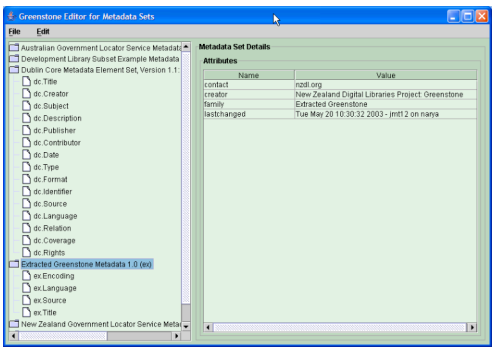
Greenstone Editor for Metadata Sets - GEMS

- What can GEMS do?
  - Create a new metadata set
  - Add metadata elements to an existing set
  - Define and edit metadata attributes
  - Inherit from an existing metadata set
  - Import an existing metadata set
  - Sets can be used in GLI

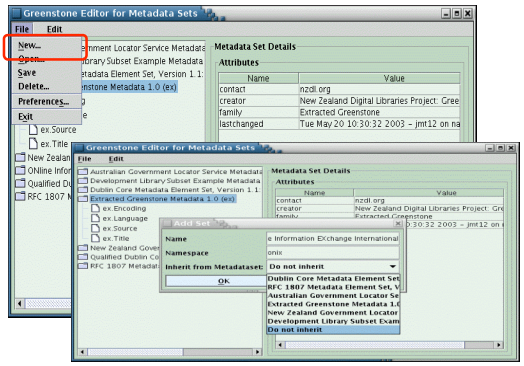
GEMS Interface



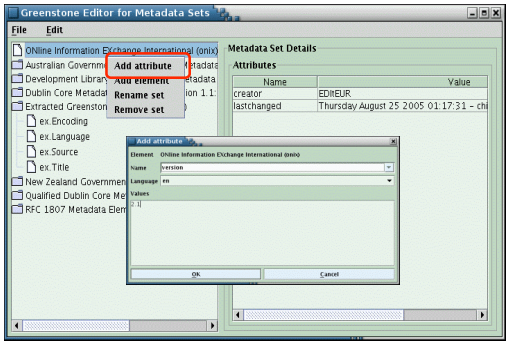
GEMS Interface



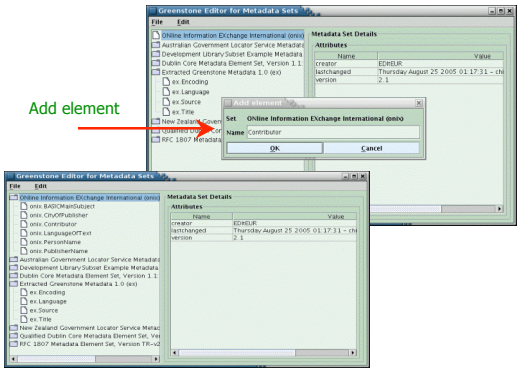
Adding a New Metadata Set



Adding Metadata Attribute



Adding Metadata Element



Using an existing metadata set

- Using a pre-defined metadata set
  - Must comply with Greenstone metadata XML file format
    - Write a script to convert?
  - Copy to /gsdl/gli/metadata directory