

**MDP on Digital Libraries**  
**Indian Institute of Management Kozhikode (IIMK)**  
**(July 14-16, 2005)**  
**Training Programme on**  
**Greenstone Digital Library Software (GSDL)**

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**Practice Session**

**DAY - 1**

**Section I**

**1. Installation of GSDL Version 2.60 on Windows**

Insert the programme CD to the Drive and select “**resources**” button in the popping up page, and click on the “**Install Greenstone**” link. You will now get a new folder opened up.

Do the following steps now:

- A. Click on “gsdl-2.60-win32 1.exe”. The Install Shield Wizard will begin the installation of GSDL software [Note : A graphical tool for collection building called the Greenstone Librarian Interface (GLI) which requires version 1.4.2 of the Java Runtime Environment (JRE 1.4.2) is already included in the software]  
Click <next>
- B. Accept all the term of license agreement by clicking on <Yes> button.
- C. Click on <next> to install GSDL in the default folder, which is  
**C:\program files\greenstone**
- D. Choose the type **Local Library**. By default, **Local Library** is highlighted.  
Click <next>
- E. Set the Admin Password as “**admin**” (you can later change it).  
Click <next>  
{Installation wizard starts copying the required files from the CD}
- F. Click on **Finish** button to finish GSDL installation.

To check whether your installation is proper , Click on

**Start → Programs → Greenstone Digital Library → Greenstone Digital Library**

Click on **Enter Library** in the 'Dialog Box' and Your Browser should display The GSDL Homepage

**Participants are encouraged to read the following GSDL Guides from the Resources Section of the Programme CD :**

- **Greenstone Digital Library Installer's Guide**
- **Greenstone Digital Library User's Guide**
- **Greenstone Digital Library Developer's Guide**
- **Greenstone Digital Library: From paper to collection**
- **MGPP: A search engine for XML documents User Guide**
- **Teaching Material**

## **2. Installation of Imagemagick (Version - 6.2.3-Q16) Software on Windows**

1. Locate The file **ImageMagick-6.2.3-2-Q16-windows-dll** on the CD
2. Start installation by double clicking on this **“Next” icon** in the Install Wizard
3. Click on **<Yes>** to accept license agreement
4. Imagemagick gets installed to default directory, **c:\program files\ ImageMagick-6.2.3-Q16**
5. You have now installed ImageMagick. To test the installation select Command Prompt from the Windows Start menu. Within the window type:

```
convert logo: logo.miff
imdisplay logo.miff
```

and the ImageMagick logo should be displayed in a window.

If you selected to create a desktop icon, an icon labeled **ImageMagick Display** will appear on your desktop. Double clicking brings up ImageMagick's image display program.

For your convenience, the full content of the ImageMagick web site has been installed on your computer. This is available from the Windows start menu via "ImageMagick 6.2.0" -> "ImageMagick Web Pages".

### 3. Installation of Java Run-time Environment Version 1.4.2-08

1. Locate The file **j2re-1\_4\_2\_08-windows-i586-p.exe** on the CD
2. Start installation by double clicking on this “**setup**” icon
3. Click on **<Yes>** to accept license agreement
4. Click on **<next>** to select default setup type, which is ‘**Typical**’
5. JRE gets installed to default directory, **c:\program files\java**
6. Test The installation by executing the following command in MS\_DOS prompt  
**C:\Java -version**

The above command generates three lines of output indicating JRE and its version.

## Section II

### 1. Collection Building Using GSDL

There were three methods to develop a collection using GSDL

1. Collector - The Web Interface Mode (GUI mode)
2. Command Line Mode (the DOS mode)
3. GLI (Greenstone Librarian Interface) tool

With the release of Version 2.60, Greenstone has disabled the Collector button. However, the Collector codes are still included in the software, which can be enabled. Henceforth Greenstone will be promoting GLI only as its major collection building mode.

#### 1.1. Building Collection using the GLI tool

The Greenstone Librarian Interface (GLI) is an easy-to-use front-end to Greenstone's collection-building functionality. It provides a graphical, point-and-click interface that allows you to gather files for your digital library collection, assign metadata to them, and then design, customize and build your collection. The Librarian Interface comes as standard in all. It is installed in a subdirectory of your Greenstone installation called "\gli", and requires a recent version of Java (JRE – Java Run-Time Environment) to run.

## 1.2. Accessing the Greenstone Librarian Interface (GLI)

Start→ Programs→GreenstoneDigital Library→Greenstone Librarian Interface

1. Wait for a while – it takes a few seconds to get the module ready.
2. From **GLI**, select **File→New**  
A window will pop up. Give appropriate values  
*Collection title*  
*Description of Content*  
Leave the settings for **Base this collection on:** at its default **New collection**  
And click **<OK>**
3. Another window will pop up, from which you select metadata set to use.  
Select **Dublin Core** And click **<OK>**.
4. You need to now **gather file/s** that will constitute the **collection**. The test files are available at C:\.
5. **Drag and Drop the required file/s OR folder/s** from the **Workspace** to the **Collection Area**.
6. You can see the file contents by double clicking on the file in the **Collection Area**.
7. Now go to Create Panel by clicking the **Create Tab**.
8. To start building the collection, simply click **<Build Collection>** at the bottom of the panel.
9. Once the collection has built successfully, a window pops up. To confirm this,  
Click **<OK>**
10. Click on **Preview Collection** button to look at the end result.

## 1.3. Features of the GLI (The ‘Gather’, ‘Enrich’, ‘Design’ and ‘Create’ Panels)

The **‘Gather’** Panel facilitates putting the relevant files from the ‘workspace’ to the ‘collection building’ area. The **‘Enrich’** Panel explains how metadata is created, edited, assigned and retrieved, and how to use external metadata sources. Help for this is provided in the GLI Interface. The **‘Design’** Panel facilitates customising your interface, once your files are marked up with metadata. Using the Gather Panel, you can specify the fields that are searchable, allow browsing through the document, facilitate the languages that are supported, and provide the buttons that are to appear on the page. Help for this is provided in the GLI Interface. The **‘Create’** Panel facilitates creation of your collection.

### 1.3.1. Submitting an Object

1. To build a typical collection, say 'MyTest' collection, first go to 'File' section, select 'New' and then give the collection name as 'MyTest'. Select OK from the panel and then you will get another panel popped up where you will select the appropriate Metadata Set. You may also give the description about the collection here. By default, the system will prompt Dublin Core metadata set. Click on OK button and you will get the collection create panel made ready for accepting the file(s).

The '**Gather**' Panel is activated now. From the 'Workspace' provided, identify the document to be put in the collection by locating it in the local folder. Drag and drop the file to the Collection Area using the mouse. The necessary 'plugin' for the creation of the collection is to be tick marked and enabled in the 'Design' panel, which is the next step in the collection building process. If the collection has objects for which 'plugins' are not provided in the default set, a new dialog box for adding the required plugin will appear and it has to be added to the default set.

2. Go to the '**Enrich**' panel and give necessary values for the Dublin Core element sets. This section explains how metadata is created, edited, assigned and retrieved, and how to use external metadata sources. Help for this is provided in the GLI Interface.

3. The next step is to give necessary values and arguments for the '**Design**' panel.

This feature facilitates customising your interface, once your files are marked up with metadata. What kind of information is searchable? What ways are provided to browse through the document? What languages are supported? Where do the buttons appear on the page? These things can be customised with the section. Help for this is provided in the GLI Interface.

#### The Design panel has several features :

i. **General Options** - In this section, give the e-mail address of the 'collection creator', 'collection maintainer', 'collection title' (will be supplied by the system), collection folder (will be supplied by the system), Image file location for the Collection icon and the Image file location for the Document icon. Click on the Tick mark for making this collection publicly available.

ii. **Document Plugins** - This section facilitates adding, configuring or removing plugins from your collection. To add one, choose it from the combobox and click 'Add Plugin'. To configure or remove one, select it from the list of assigned plugins and then: i) Change its position in the plugin order by clicking on the arrow buttons. (Note: The position of RecPlug and ArcPlug are fixed). ii) Configure it by clicking 'Configure Plugin', iii) Remove it by clicking 'Remove Plugin'. Plugins are configured using a pop-up design area with a scrollable list of arguments. Enable arguments and enter or select values as necessary.

**iii. Search Types** - Defining the search type is an advanced feature, only available when enabled (by checking the 'Enable Advanced Searches' box). Once enabled, further controls for selecting and changing the order of search types become available. See the 'Search Type Selection and Ordering' section of the 'Design' Panel for more information on this.

**iv. Search Indexes** - The required number of searchable indexes the collection must have, is to be selected here. To add a new index, enter a unique name for the index, select material/metadata is to be indexed, and click 'Add Index'. If you wish to add all of the available sources so as to have indexes built on them, then click 'Add All'.

**v. Partition Indexes** - This feature help to refine index creation. This facility is disabled in the GLI mode.

**vi. Cross-Collection Search** - This feature facilitates cross-collection searching, where a single search is performed over several collections, as if all the collections were one. Specify (Tick Mark) the collections to include in a search by clicking on the appropriate collection's name in the list below. The current collection will automatically be included. [Note : If the individual collections do not have the same indexes (including sub collection partitions and language partitions) as each other, cross-collection searching will not work properly. The user will only be able to search using indexes common to all collections].

**vii. Browsing Classifiers** - This feature allows the AtoZ browsing of the collection and by default it takes the 'Dublin Core . Title'. You can more data elements in the AtoZ classify list as deem fit for the collection using this feature.

**viii. Format Features** - The web pages you see when using Greenstone are not pre-stored, but are generated 'on the fly' as they are needed. Format commands are used to change the appearance of these generated pages. Some are switches that control the display of documents or parts of documents; others are more complex and require html code as an argument. To add a format command, choose it from the 'feature' list. If a True/False option panel appears, select the state by clicking on the appropriate button.

For example, to get the Cover Image displayed in the document while building the collection, go to the 'Choose Features' dropdown box and enable the 'DocumentImages', i.e., make its value to True.

**ix. Translate Text** - Use this feature to review and assign translations of text fragments in your collection. The translated text will appear in a different box in the browser.

**x . Metadata Sets** - This feature allows you to add, configure and remove the Metadata Sets in your collection and what Elements they contain.

4. Now go to the 'Create' panel and click on the '**Build Collection**'. Greenstone will start creating the collection. You can see the built collection by clicking on the 'Preview Collection'.

N.B.: Please remember you have to save your collection development process from time to time. It is not mandatory that you need to comply with the entire set of formalities for a building a collection in a single stretch. You can do it in different sessions too. What is important is saving the sessions from time to time.

**Exercise:-**

1. Build a collection titled '**sample**' with the file **library.html** (file available as C:\library.html). '**about page**' and '**home page**' icon is '**collection icon1.gif**'. Give an appropriate collection description also.
2. Similarly, build another collection titled '**my sample**' with the file '**digital.pdf**' (file available as C:\digital.pdg). '**about page**' and '**home page**' icon is '**collection icon2.gif**'.
3. Give appropriate collection descriptions for the collections.
4. After building the collection, View it and Evaluate the same.

Day - 2**2. GSDL Collection Configuration**

The construction and presentation of all collections is controlled by specification in a special collection configuration file. Advanced users may use this page to edit alter the configuration settings. This config.cfg will be available in “*etc*” directory of GSDL home. Below given is the configuration file of a typical collection.

```

creator          user@iimk.ac.in
maintainer       user@iimk.ac.in
public           true
indexes          document:text document:Title document:Source
defaultindex     document:text
plugin           ZIPPlug
plugin           GAPlug
plugin           TEXTPlug
plugin           HTMLPlug
plugin           EMAILPlug
plugin           PDFPlug
plugin           RTFPlug
plugin           WordPlug
plugin           PSPlug
plugin           ArcPlug
plugin           RecPlug
classify         AZList -metadata Title
classify         AZList -metadata Source
collectionmeta   collectionname "FIRST"
collectionmeta   iconcollection ""
collectionmeta   collectionextra "This is a sample
collection\n_collectorextra_"
collectionmeta   .document:text "text"
collectionmeta   .document:Title "titles"
collectionmeta   .document:Source "filenames"

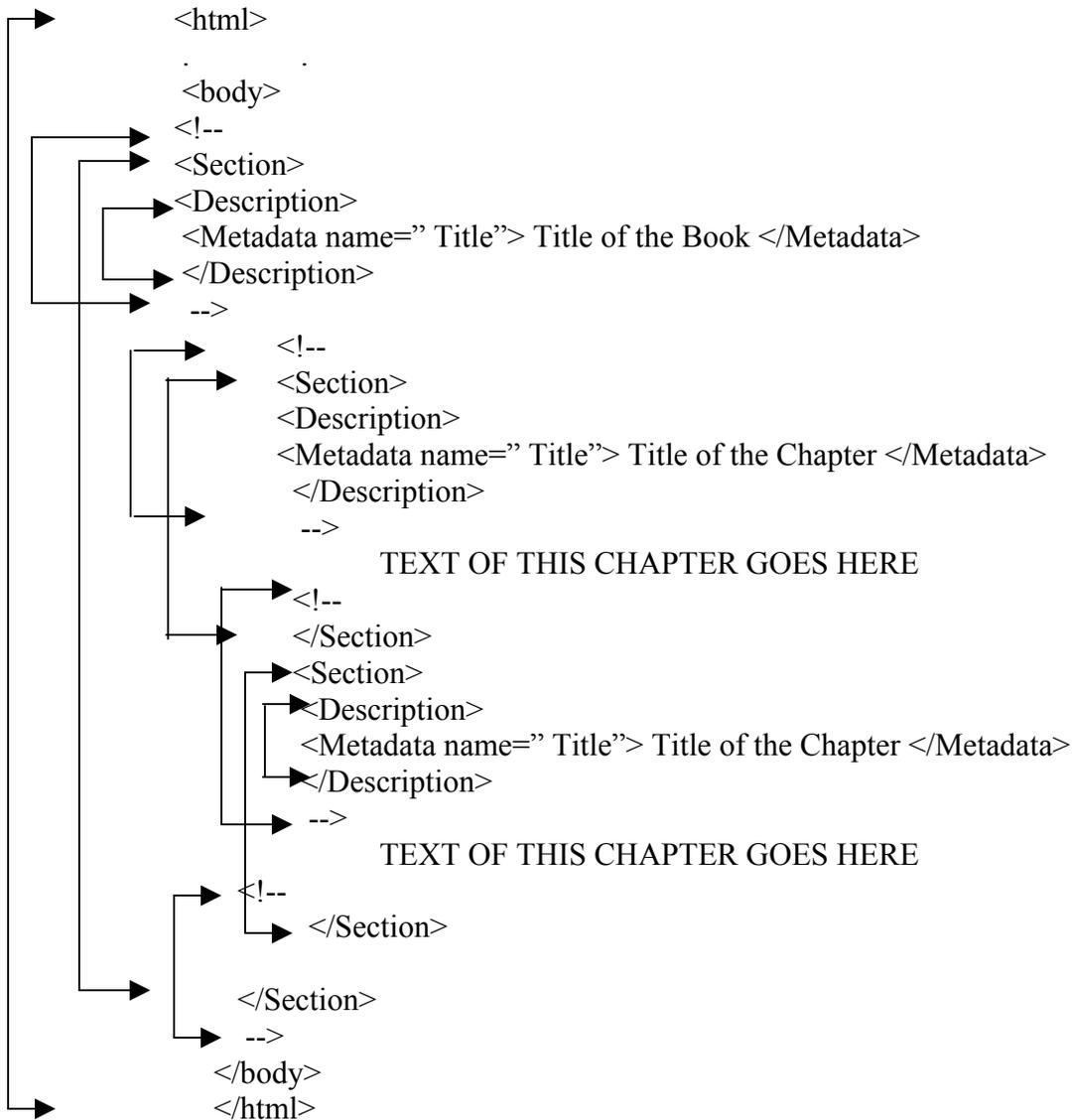
```

### 3. Getting the Hierarchy Structure for your Documents

#### Tagging the Documents

##### Section and Subsection:-

To create indexes for section and sub-section, the pre-requisite is that the document should be in HTML format. Therefore your collection files in other formats like PDF, Word, etc. are first to be converted into HTML format. Also in the Collection Configuration file, the HTML Plugin has to be modified to “plugin HTMLPlug –description\_tags”. Corresponding changes have to be made in the “indexes” and the “collectionmeta” lines. Obviously now the Source File has to be edited as a HTML file structure. For the section and sub sections, you need to edit the source file.



**Note :**

1. The “<!--” and the “-->” markers are used because they indicate comments in HTML and hence these Section tags will not affect document formatting.
  2. Edit source the file carefully, because **section tags are case sensitive** and the “Section” heading should start with the Upper Case “S”.
  3. A sample Tagged Document (**Tagged.html**) is placed at C:\ for reference.
- After editing the Source Document the Collection is to be built as per procedure.
  - Edit the “config.cfg” for Section Indexing (usually this is presented to you while building the collection. You can also take this file from

**C:\Program Files\Greenstone\collect\<collection name>\etc.**

(in the event of editing this file, please ensure that you are rebuilding the collection)

**Exercise:-**

1. Build a collection with the name **FourthTest** (file available as C:\Tagged.html).
2. After building the collection, View it and Evaluate the same.
3. Work on the sample file **FifthTest.html** (available at C:\) and provide appropriate Section Tags and prepare a meaningful document for the collection **FifthTest**.
4. Build a collection with the name **SixthTest** (file available as C:\Tagging.html)

**Day - 3****4. Customization of User Interface (MyLibrary)**

In order to change the look and feel of the Greenstone user interface, you need to work on the Collection Configuration (Collect.cfg) files. Customising the User Interface requires a certain degree of knowledge on HTML and some level of Web Designing skills are pre-requisites for this.

**i. Collect.cfg** - This is the collection configuration file. You can find this file in the “Program Files\Greenstone\collect\etc” directory. Details on how to create this file can be found in the Developer’s Guide, “1.5 Collection configuration file” and “2.3 Formatting Greenstone output”.

**ii. Macro files** - Macro files have an extension ‘.dm’. All macro files are stored in the “macros” directory. Details on how to create macros and macro files can be found in the Developer’s Guide “2.4 controlling the Greenstone user interface”.

**iii. Image files** - All images files can be found in the ‘Program Files\Greenstone\images’ directory.

**iv. Main.cfg** - This file contains a list of all macro files used for the User Interface. If you created a new ‘.dm’ file, you need to add it to this file. The main.cfg file is stored in the "Program Files\Greenstone\etc" directory.

**v. Getting the Cover Image** - For you to get the Cover Image of your input document, you need to put the image file and the source file (document) into a single folder. They both should bear the same File name also. While building the collection, Greenstone will take both the files to “Program Files\Greenstone\collect\\archives\Hash”. The collection thus built will display the Cover Image along with the document.

In the **Design Panel**, in the Document Plugin section, while configuring the Arguments for the HTML Plugin, give the custom argument as ‘cover\_image’.

Also, go to the ‘Format Features’ Section, click on the ‘Choose Feature’ Combo Box, and ‘Enable’ the ‘DocumentImages’.

**vi. Hierarchy Structure** – For obtaining hierarchy structure, in the **Design Panel**, in the Document Plugin section, while configuring the Arguments for the HTML Plugin, give the custom argument as ‘description\_tags’.

**vii. Getting the Collection Icon** - Click on Design panel ->General Option -> URL to home page icon (Browse for the image and locate it) and call (refer to) the Image file.

**viii. Getting Header Image for the Digital Library** - To get the header image which says MyLibrary banner in the DL head, create the graphic file (preferably a GIF file), name it as ‘gsdlhead.xxx’ and then replace it with the file available in ‘Program Files\Greenstone\images.’

- Take a sample icon available at C:\ for your digital Library.
- Put your image in the folder **Program Files\Greenstone\images**
- Image name should be **gsdlhed** ( Eg:gsdlhead.gif )

## **Exercise**

1. Design Header Image for your Digital Library
2. Build a couple of collections with cover image and collection icon.

## **NOTE**

**It is strongly recommended to get familiarised with the GSDL manuals / guides / tutorials for mastering the software.**

**References:**

- 1. <http://www.greenstone.org>**
- 2. <http://www.nzdl.org>**
- 3. <http://sourceforge.net/projects/greenstone>**

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