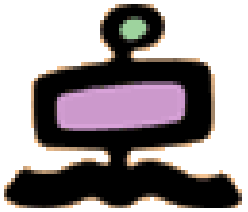
Corso di Biblioteche Digitali



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  - Office: 050 621 3115
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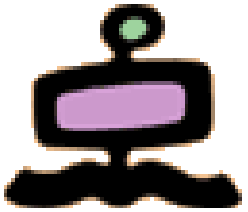
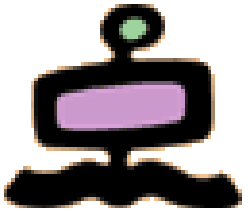
  - Skype: vittore1201
- “Ricevimento” at the end of the lessons or by appointment
- Final assessment
  - 70% oral examination
  - 30% project (development of a small digital library))
- Reference material:
  - Ian Witten, David Bainbridge, David Nichols, How to build a Digital Library, Morgan Kaufmann, 2010, ISBN 978-0-12-374857-7 (Second edition)
  - Material provided by the teacher
- **http://cloudone.isti.cnr.it/casarosa/BDG/**

Modules



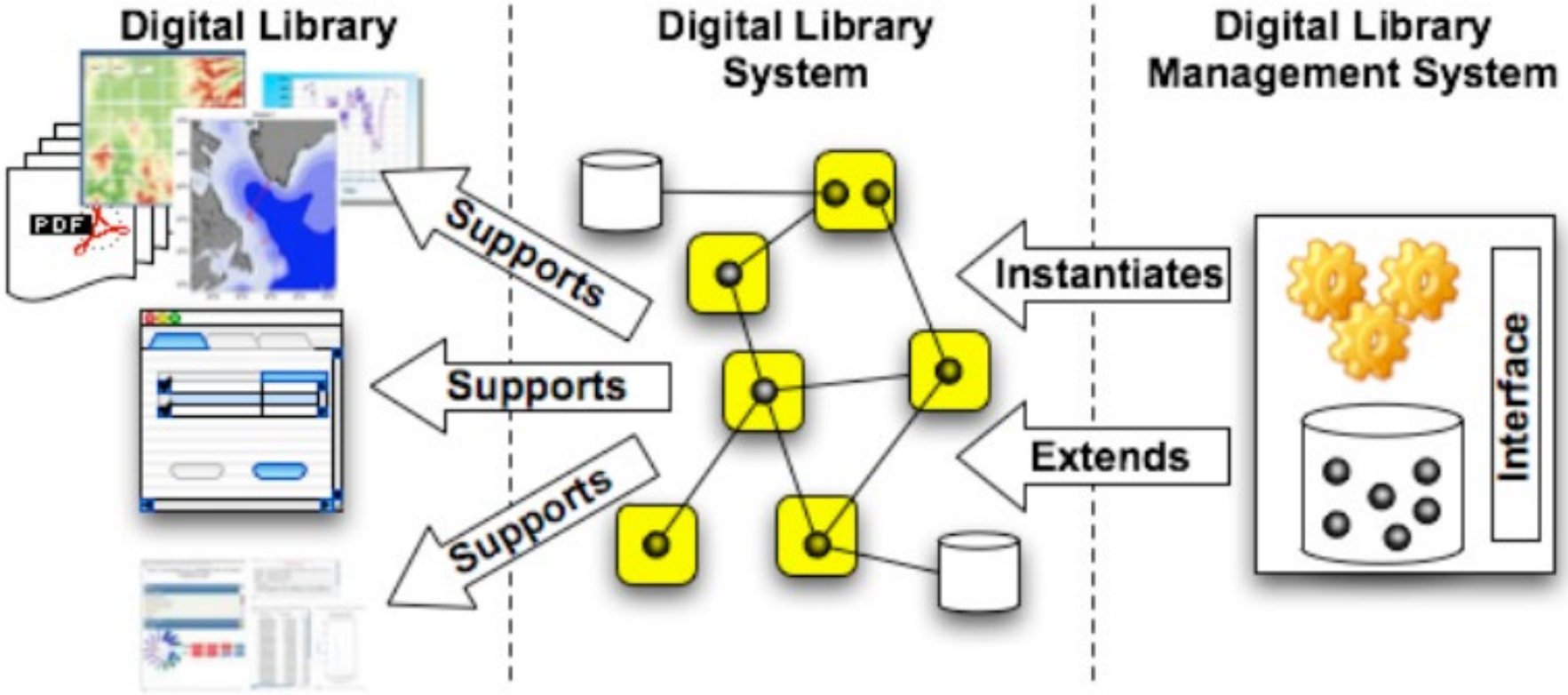
- Computer Fundamentals and Networking
- A conceptual model for Digital Libraries
- Bibliographic records and metadata
- Information Retrieval and Search Engines
- Knowledge representation
- Digital Libraries and the Web
- Hands-on laboratory: the Greenstone system

Greenstone

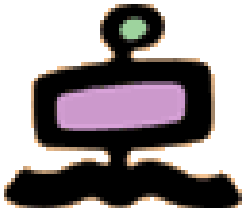


- Hands-on laboratory: the Greenstone system
  - What is Greenstone
  - Greenstone installation
  - The Greenstone Librarian Interface
  - Development of a small digital library

A Three-Entity Framework



Different types of DLMS



- **Extensible Digital Library System**
  - A complete Digital Library System that is fully operational with respect to basic/ foundational functionality required. It is based on an open software architecture, so that further software components can be incorporated on top of the ones already there with ease (Greenstone, DelosDLMS)
- **Digital Library System Warehouse**
  - A collection of software components that encapsulate the core suite of DL functionality and a set of tools that can be used to combine these components in a variety of ways (in Lego-like fashion) to create Digital Library Systems offering a tailored integration of functionalities. New software components can easily be incorporated into the Warehouse for subsequent combination with those already there (BRICKS, DILIGENT)
- **Digital Library System Generator**
  - A highly parameterized software system that encapsulates templates covering a broad range of functionalities, including a defined core suite of DL functionality as well as any advanced functionality that has been deemed appropriate to meet the needs of the specific application domain Through an initialization session, the appropriate parameters are set and configured; at the end of that session, an application is automatically generated, and this constitutes the Digital Library System ready for installation and deployment (MARIAN)

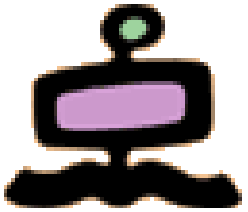
Introducing the Greenstone Digital Library Software

Ian H. Witten

Computer Science Department
Waikato University
New Zealand

http://greenstone.org
http://nzdl.org

Greenstone



Access

- Accessible via any Web browser
- Server runs on anything (all Windows + Unix + Mac)
- Collections can be published on CD-ROM/DVD
- Trivial to install
- GUI interface for building and publishing collections

Searching/ browsing

- Collection-specific
- Full-text and fielded search
- Flexible browsing facilities
- Metadata-based (Dublin Core recommended)
- Creates all access structures automatically

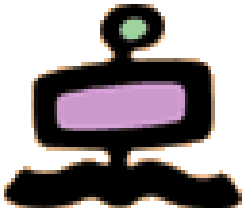
Extensible

- Plugins — new document, metadata formats
- Classifiers — new metadata browsers

Multi-*

- Multilingual: Documents *and* interfaces
- Multimedia: image, video, audio collections exist
- Multiformat: Documents *and* metadata

Standards



Metadata

- Can use any metadata set, Dublin Core supplied
- Plugins for

XML	**Refer**
MARC	**OAI**
CDS/ISIS	**METS**
ProCite	**DSpace**
BibTex	

Serving

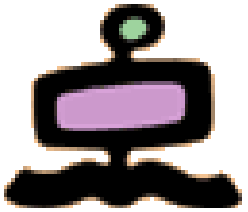
- Web
- Can publish Greenstone collections on CD-ROM
- Can publish Greenstone collections on OAI
- Export collections to METS
- Export collections to DSpace (***ready for DSpace's batch import program***)

Documents

- Plugins for

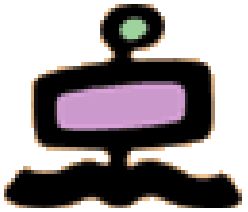
PDF	**ZIP**	**Images (GIF, JPEG, TIFF …)**
PostScript	**Excel**	**MP3**
Word, RTF	**PPT**	**Ogg Vorbis**
HTML	**Email**	**MediaWiki**
Plain text	**Source code**	**UnknownPlug**
Latex	**RealMedia**	**(e.g. for audio, MPEG, Midi)**

The Greenstone system



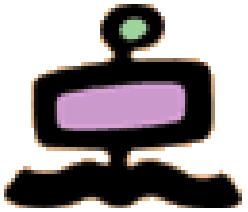
- Greenstone is “free software” that can be downloaded from the Web
  - http://www.greenstone.org/download
- The Greenstone download installs two “programs”
  - The Greenstone server (the Apache web server) supporting access to and navigation through “collections” (digital libraries) via any browser
  - The Greenstone Librarian Interface (GLI) to build “collections” (digital libraries)

The Greenstone system



- There are two versions
  - Greenstone 2, latest version 2.87, maintained but no longer developed
  - Greenstone 3 is actively maintained and developed; the latest version is 3.11
- Operating system (for both versions):
  - Windows (any version)
  - Linux (any version)
  - Mac OS X

The Greenstone Librarian Interface (GLI)

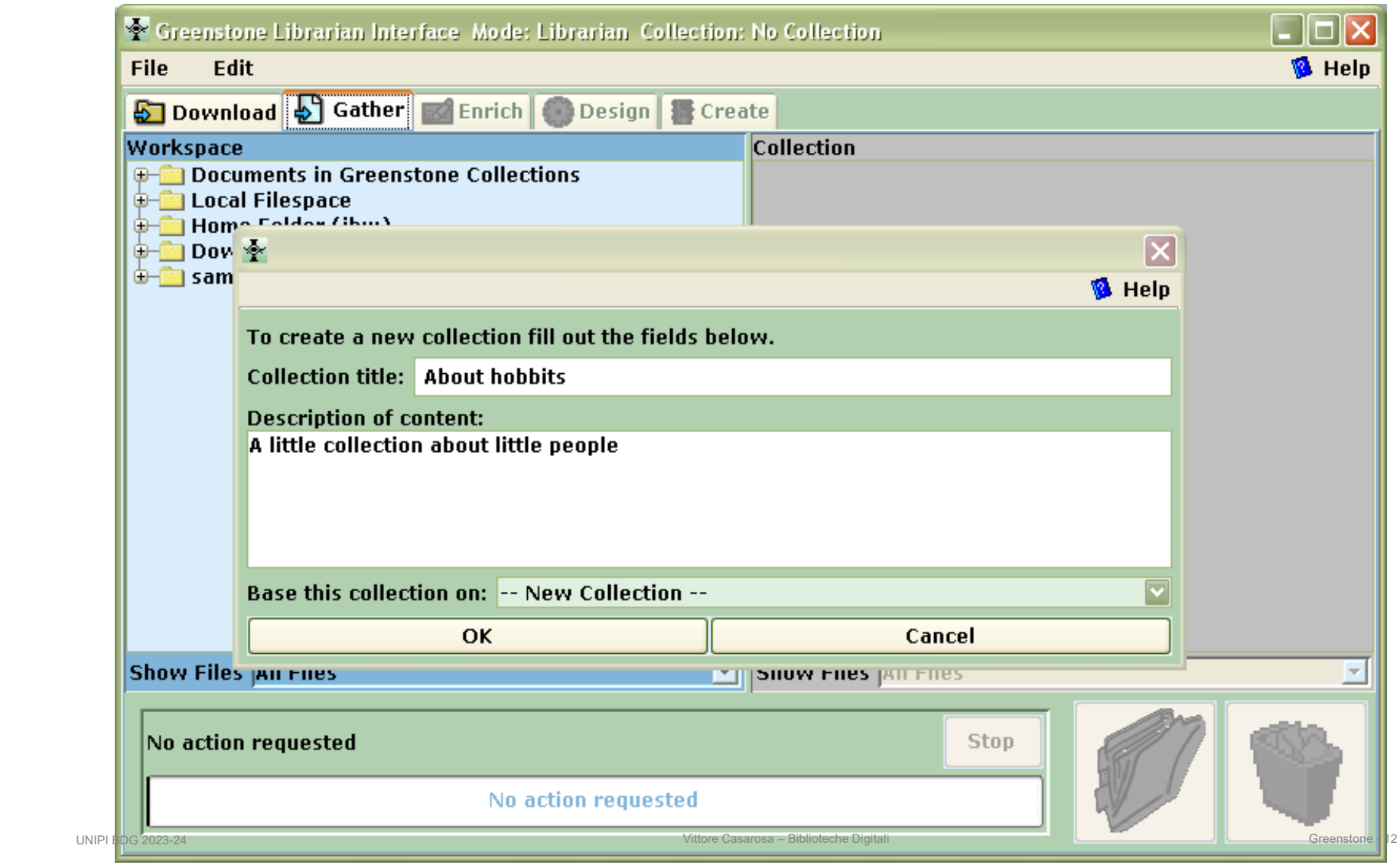


- Building collections
- Interactive Java program
- Runs on anything
- Build a collection on the computer you are on
- Includes metadata editor

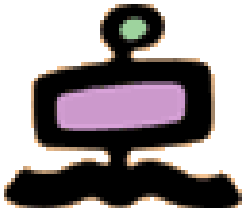
  Caveat: cannot deal with such huge metadata collections as Greenstone can

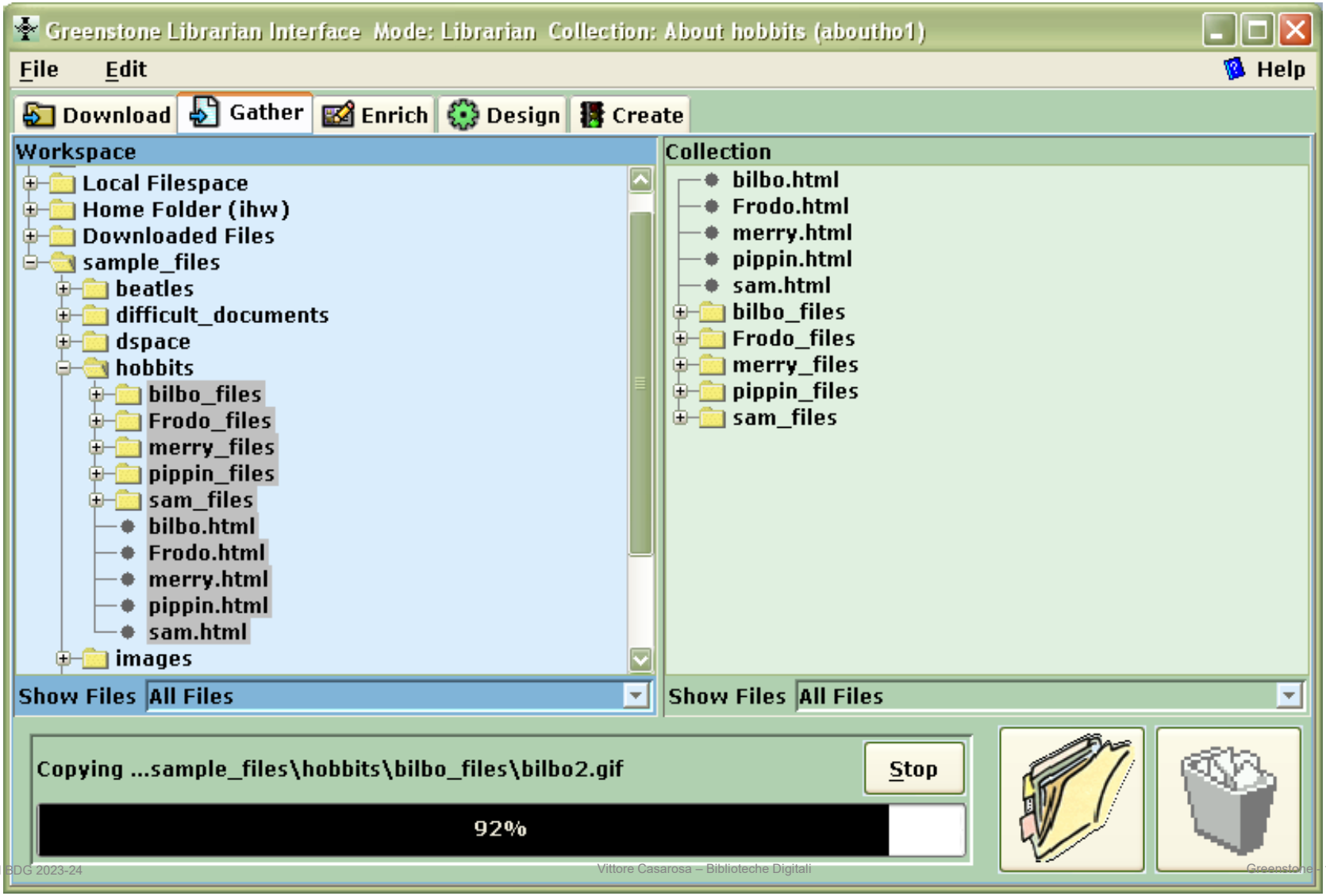
(Tutorial exercise: small collection of HTML files)
Invoke GLI: build a small collection of HTML files
- **Gather**
- **Create**
- **Look at extracted metadata**
- **Set up shortcut in the Librarian interface**

Create a new collection

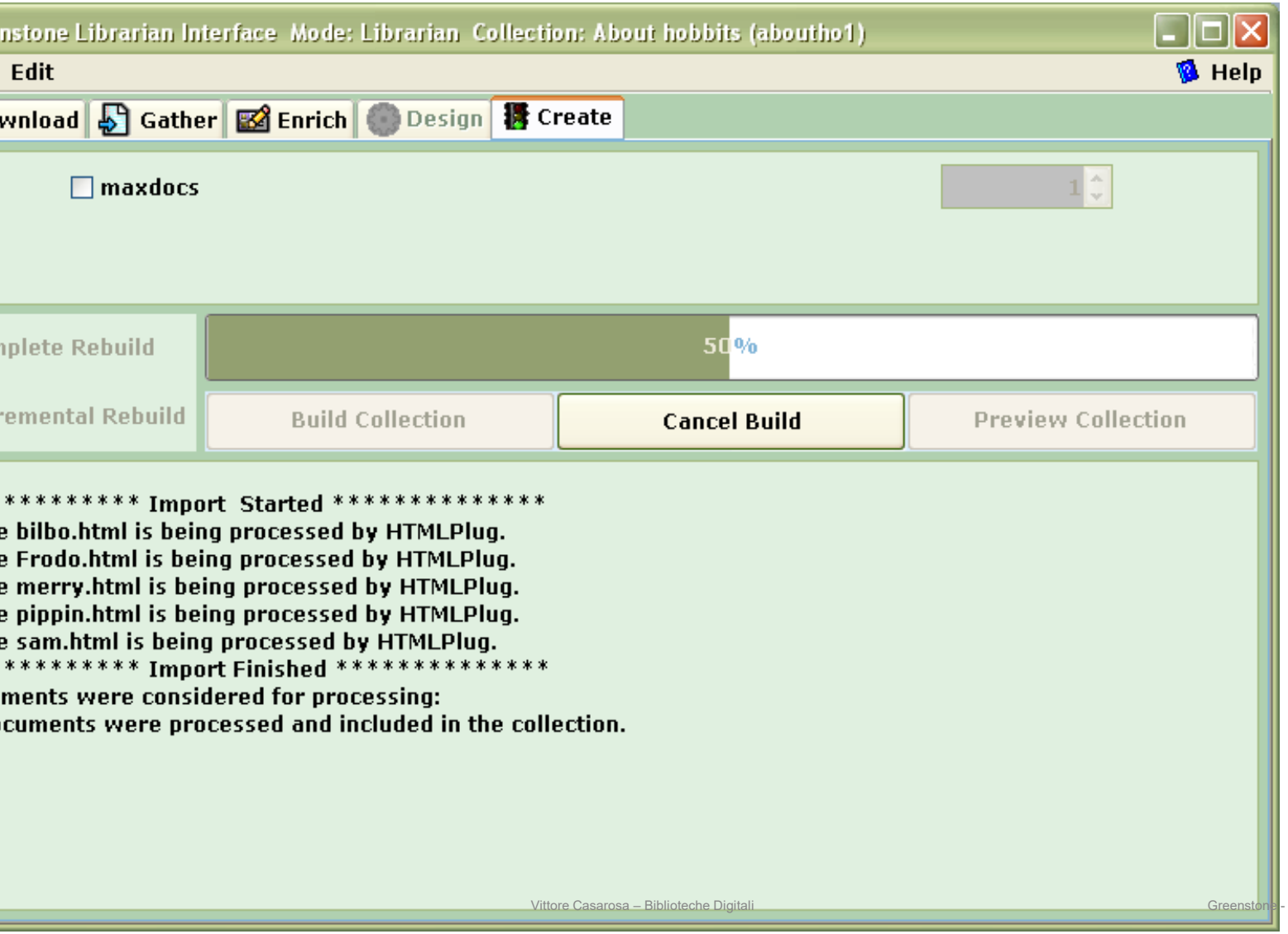


Gather: Gather the files together



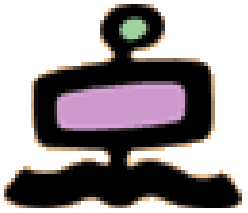


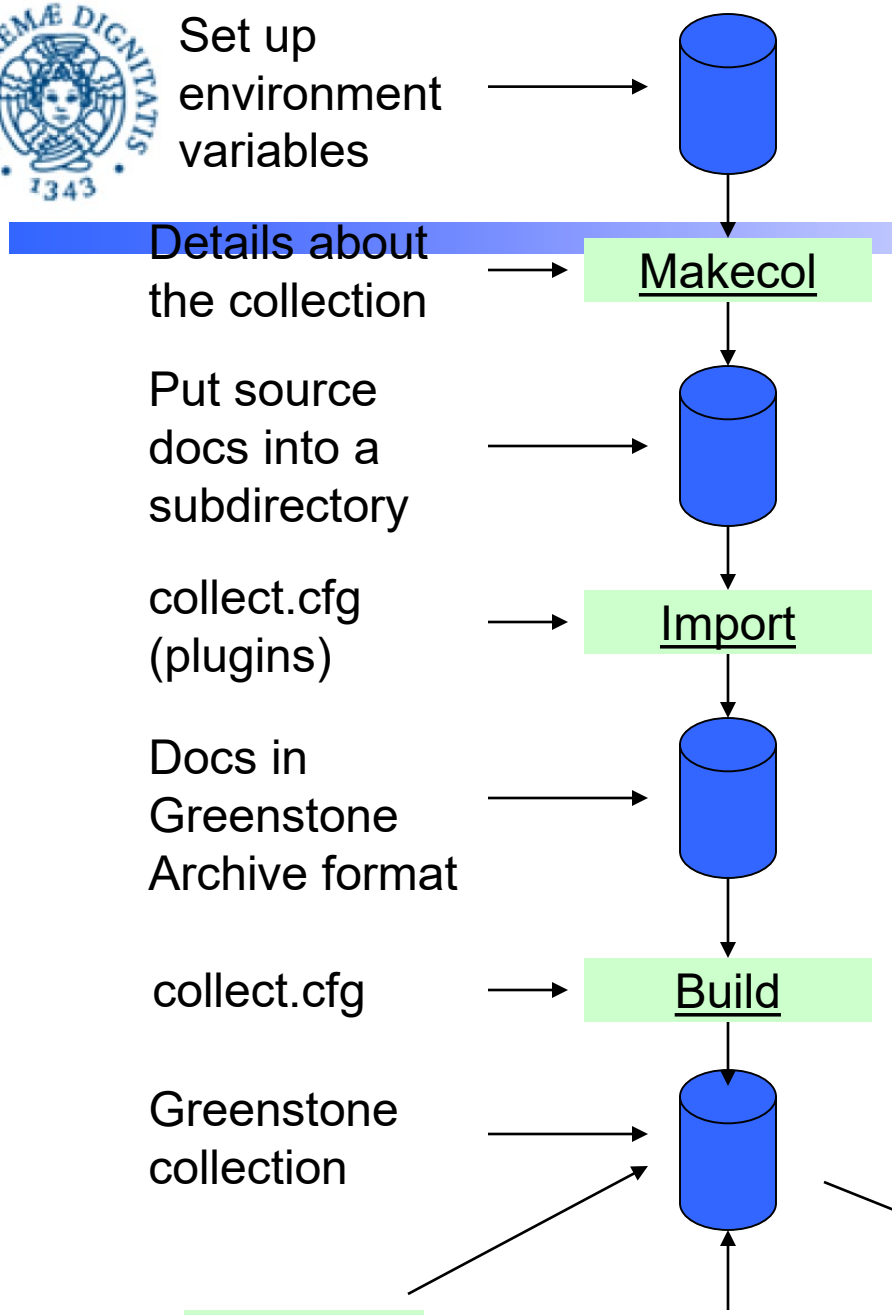
Create: Build the collection



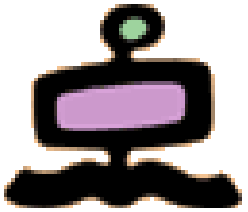
Preview: admire the result

Building a collection



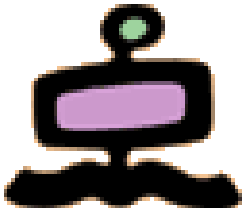


Greenstone useful links



- The starting place (it includes the downloads)
  - http://www.greenstone.org/
- Download
  - http://www.greenstone.org/download
- Documentation
  - http://wiki.greenstone.org/doku.php
- Extensive set of implemented (many well documented) Digital Libraries
  - http://www.nzdl.org/cgi-bin/library.cgi (go down the page and look at "Documented Example collections")

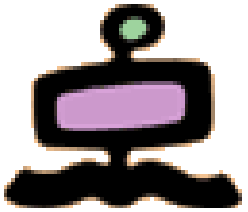
Greenstone exercises



- Tutorial exercises
  GS3 and GS2 (check the tabs)
  - https://wiki.greenstone.org/doku.php?id=en:tutorials#tab__greenstone3

- Sample files for GS3
  - http://wiki.greenstone.org/gsdoc/tutorial/gs3-current/sample_files/sample_files.zip

Steps to build a collection



- Put together (from your PC or downloading from the Web) all the documents that will be in your collection
- **Design how your collection will be "navigated"**
- Based on the "Design", organize the documents in a hierarchy of folders and subfolders
- Based on the "Design", decide which metadata will be needed
- **Open the GLI and define your new collection** (name and description)
- Import a **SMALL representative subset** of your documents into Greenstone (drag and drop from "Gather")
- "Enrich" your collection with metadata
- Based on the "Design" define the indexes and the classifiers to search and navigate your collection
- "Create" the collection (Greenstone will build indexes etc.)
- Admire the result ☺
- Personalize the "Format"