The Greenstone digital library software

Greenstone is a suite of software for building and distributing digital library collections. It is not a digital library but a tool for building digital libraries. It provides a new way of organizing information and publishing it on the Internet in the form of a fully-searchable, metadata-driven digital library. It has been developed and distributed in cooperation with UNESCO and the Human Info NGO in Belgium. It is open-source, multilingual software, issued under the terms of the GNU General Public License. Its developers received the 2004 IFIP Namur award for "contributions to the awareness of social implications of information technology, and the need for an holistic approach in the use of information technology that takes account of social implications."

http://www.greenstone.org

Technical

Platforms. Greenstone runs on all versions of Windows, and Unix, and Mac OS-X. It is very easy to install. For the default Windows installation absolutely no configuration is necessary, and end users routinely install Greenstone on their personal laptops or workstations. Institutional users run it on their main web server, where it interoperates with standard web server software (e.g. Apache).

Interoperability. Greenstone is highly interoperable using contemporary standards, It incorporates a server that can serve any collection over the Open Archives Protocol for Metadata Harvesting (OAI-PMH), and Greenstone can harvest documents over OAI-PMH and include them in a collection. Any collection can be exported to METS (in the Greenstone METS Profile, approved by the METS Editorial Board and published at http://www.loc.gov/standards/mets/mets-profiles.html), and Greenstone can ingest documents in METS form. Any collection can be exported to DSpace ready for DSpace's batch import program, and any DSpace collection can be imported into Greenstone.

Interfaces. Greenstone has two separate interactive interfaces, the Reader interface and the Librarian interface. End users access the digital library through the Reader interface, which operates within a web browser. The Librarian interface is a Java-based graphical user interface (also available as an applet) that makes it easy to gather material for a collection (downloading it from the web where necessary), enrich it by adding metadata, design the searching and browsing facilities that the collection will offer the user, and build and serve the collection.

Metadata formats, Users define metadata interactively within the Librarian interface. These metadata sets are predefined:

Dublin Core (qualified and unqualified)
RFC 1807
NZGLS (New Zealand Government Locator Service)
AGLS (Australian Government Locator Service)

New metadata sets can be defined using Greenstone's Metadata Set Editor. "Plug-ins" are used to ingest externally-prepared metadata in different forms, and plug-ins exist for

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

Document formats, Plug-ins are also used to ingest documents. For textual documents, there are plug-ins for

PDF, PostScript, Word, RTF, HTML, Plain text, Latex, ZIP archives, Excel, PPT, Email (various formats), source code

For multimedia documents, there are plug-ins for

Images (any format, including GIF, JIF, JPEG, TIFF), MP3 audio, Ogg Vorbis audio, and a generic plug-in that can be configured for audio formats, MPEG, MIDI, etc.

User base

Distribution. As with all open source projects, the user base for Greenstone is unknown. It is distributed on SourceForge, a leading distribution centre for open source software.

Distributed via SourceForge since:	Nov 2000
Average downloads since then:	4500/month
Currently running at:	4500/month
Proportion of downloads that are documentation:	60%
Proportion of downloads that are software:	40%

Of these, 80% are Windows binaries
15% are Linux binaries
5% are source

Examples. Examples of public Greenstone collections (see http://www.greenstone.org for URLs) can be found at:

Association of Indian Labour Historians, Delhi
Auburn University, Alabama
California University at Riverside
Charles Darwin University,Australia
Chicago University Library
Detroit Public Library
Gresham College, London
Hawaiian Electronic Library
iArchives, Utah
Illinois Wesleyan University
Ionian University, Greece
Indian Institute of Management
Kyrgyz Republic National Library
LeHigh University, Pennsylvania
Mari El Republic, Russia
National Centre for Science Information, Bangalore, India
Netherlands Institute for Scientific Information Services
New York Botanical Garden
Peking University Digital Library
Philippine Research Education and Government Information Network
Secretary of Human Rights of Argentina
Slavonski Brod Public Library, Slovenia
State Library of Tasmania
Stuttgart University of Applied Sciences
Texas A&M University Center for the Study of Digital Libraries
Tulane University
University of Illinois
University of Namibia
University of North Carolina ibiblio project
Vietnam National University
Vimercate Public Library, Milan, Italy
Washington Research Library Consortium
Welsh Books Council
Yale University

UN agencies with an interest in Greenstone include

UNESCO, Paris
Sponsors distribution of the Greenstone software as part of its *Information for All* programme

Food and Agriculture Organization (FAO), Rome
Their *Information Management Resource Kit* uses Greenstone as the (only) example of digital library software in the *Digitization and digital libraries* self-instructional module

Institute for Information Technology in Education (IITE), Moscow
Have commissioned an extensive course on *Digital libraries in education* that uses Greenstone for all the practical work

United Nations University (UNU), Japan
Two CD-ROM collections of UNU material have been produced

Humanitarian collections. Greenstone is used by Human Info NGO in Belgium to produced collections of humanitarian information and distribute them on CD-ROM widely throughout the developing world. (For more information, contact Michel Loots <mloots@humaninfo.org>)

Number of humanitarian collections:	approx 35–40
Annual distribution of each one:	approx 5,000 copies

Languages. One of Greenstone's unique strengths is its multilingual nature. The reader's interface is available in the following languages:

Arabic, Armenian, Bengali, Catalan, Croatian, Czech, Chinese (both simplified and traditional), Dutch, English, Farsi, Finnish, French, Galician, Georgian, German, Greek, Hebrew, Hindi, Indonesian, Italian, Japanese, Kannada, Kazakh, Kyrgyz, Latvian, Maori, Mongolian, Portuguese (BR and PT versions), Russian, Serbian, Spanish, Thai, Turkish, Ukrainian, Vietnamese

The Librarian interface and the full Greenstone documentation (which is extensive) is in:

English, French, Spanish, and Russian.

Training is a bottleneck for widespread adoption of any digital library software. Many international training courses have been run.

UNESCO
has sponsored training courses in Bangalore (2002 and 2003), Almaty (2003), Senegal (2004), Suva (2004)

Self-study courses
FAO and UNESCO IITE have produced training material on Greenstone

Digital Library conferences
There have been Greenstone tutorials (on several occasions) at all major digital library conferences: JCDL, ECDL, ICADL, ICDL

Librararian conferences
There have been Greenstone workshops and presentations at LITA, DLF, ALA Annual Conference

Payson Institute, Tulane University
has run courses that use Greenstone collections as a resource in locations in Africa (Burkina Faso, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Ghana, Rwanda, Senegal, Sierra Leone, Togo) and Latin America (Argentina, Bolivia, Colombia, Ecuador, Guatemala)

Others
There have been several Greenstone courses in India (e.g. Khozikode, Poona), some in Canada (Vancouver, Calgary, Edmonton), one in Cuba (Havana).

E-mail support

Number of people on Greenstone email lists:	600
Number of countries represented:	70
Number of messages (excluding spam):	150/month