

ALMAGEST, A NEW OPEN SOURCE DATABASE & PRESENTATION PROGRAM

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As institutions all over the country are going digital, interest is growing in image presentation in the classroom. Almagest, a multimedia database for teaching and learning developed at Princeton University, is capable of displaying a variety of file types, including, text, video, and audio files, as well as images and their identifying information across the internet using standard web browsers. Recently, this software has been made open source. The session presented Almagest's many features, what is necessary to install and support an Almagest environment, description of shared scholarly images made available in the Almagest format, and how the program is being used. Almagest has been used at Princeton in teaching by faculty members from many disciplines for nearly a decade. It is now being extended to other institutions thanks to the decision to make Almagest open source software.

The basic functionality of Almagest includes:

- Automatic creation of derivative images
- Side by side image comparison and commentary
- Zooming and panning capabilities
- Multimedia support, including video and music
- Annotation and crop tools
- Export to PowerPoint
- Expanded search interface
- Creation of persistent presentations with the ability to isolate image details and add commentary to all file types
- Support for a variety of data structures
- Multi-disciplinary applications
- Integration of personal collections and self-upload tools

ALMAGEST EXCHANGE

The core of the presentation dealt with a third aspect of Almagest that has recently been introduced is the Almagest Exchange. The Exchange is intended to be a shared collection of teaching images, available for any scholarly use. The database will be hosted at Princeton, with collections residing at other contributing institutions. The Almagest Exchange will provide a service to those scholars residing at institutions where local installations of the database may be impractical.

Currently, four teaching collections have been added to the Almagest Exchange and others are currently being processed for inclusion on the site. If you go to the Almagest Exchange site <http://etcweb.princeton.edu/exchange/> you will see a list of the following projects as well as others.

- The California State University IMAGE project (Kathleen Cohen)
- The Art Images for College Teaching collection (AICT; Allan Kohl)
- Rome, the Eternal City (Professor John Pinto)
- Battle diagrams (Professor Miguel Centeno)

If you select any one of the four and click the Go button you will be able to view them. However, if you select a different project you will be redirected to a log-in screen. This is because Almagest is project or course based and separate passwords can be assigned for viewing and editing. You can explore the current lectures and search without a password. You only need to log in if you want to make changes in lectures or add new ones.

Almagest is a very powerful program, and you will enjoy creating lectures. You will use a slide-table metaphor to create your lectures, and you will be able to show up to four images on a page. You can create the lectures at home on-line and present them from the server in class using single or double projection, or

you can make Powerpoint exports of the images for PCs and Macs. (The text cannot yet be exported, although that should soon be possible.) Students can view your lectures on-line, with captions or without, and they can even test themselves and print out thumbnails of your presentations. You can create on-line examinations and set the length of time that they will be displayed. Almagest automatically creates links between objects in the database, allowing you and your students to search for all other works by an artist, s in a particular style, or at a particular site. The links allow you to explore widely, but you can easily find your way back by pressing the back button.

You may wish to start your exploration of Almagest by searching through some of the 35,000 images in the California State University IMAGE project collection or the 2500 images in the AICT project. The various collections can be searched in a variety of ways, including simple and advanced searches and structured template searches. You can explore one of the many lectures shown on the IMAGE project site, and you can get specific instructions by clicking on the Help button as well as by reading the Tips section below.

Almagest will allow you to present work using many different media. The Battle Diagrams project illustrates how Almagest handles Powerpoint presentations. On a demo site at University of California Davis you can explore the variety of media that Almagest can present: video, film, and flash presentations as well as Powerpoint and standard slide-type presentations:

<http://lytta.ucdavis.edu/almagest/main.jsp?cmd=splash&proj=AlmaDemo>

There is no need to log in. Click on Explore → View Lectures-> AlmagestDemo.

TIPS ON USING ALMAGEST

INTERNET BROWSER:

The Firefox browser is recommended for both PCs and Macs. PCs can also use Explorer, but don't use Explorer or Safari on a Mac. Firefox is free and can be downloaded from Mozilla:

<http://www.mozilla.com/products/download.html?product=firefox-1.5&os=osx&lang=en-US>

Download Firefox version 1.5. (Macs may need System 10.4 for version 1.5 to work properly. Firefox 1.0 works with system 10.2.8 but has a few glitches)

Set Preferences For Firefox 1.5*

To Enable Almagest pop-ups and set the JavaScript settings appropriately

1. Open Preferences and select Content.
2. On the left side, Check the Block Popup Windows, click Allowed Sites and type etcweb.princeton.edu into the text box. Click Allow to add the Almagest web site to the Allowed Sites list.
3. Make sure the Enable Java and Enable JavaScript checkboxes are checked.
Click Advanced and make sure that Move or resize existing windows and Raise or lower windows, are checked.
4. Restart Firefox.

*See Help on the Almagest Princeton server for setting preferences for other browsers.

VIEWING LECTURES

Highlight one of the lectures and click *Show the Lecture*. Use the Default display mode of *Student Study*. Click on the thumbnail and images will appear above. Click on the Enlarge label they will get larger. Click the + button on the top of the frame and they will enlarge to full screen. (Tip, if the Enlarge button doesn't appear, you can shut Firefox down and try again). You might also try the *Quiz Me* mode. (The items shown in blue can take you to other parts of the database but you can return by clicking the back button.). Explore and have fun!

SEARCHING:

Most of the fields are scanned for all the words and thus can be searched easily, but because of this you may find art works that are not pertinent to your query. The Almagest Search formats are *Simple*, *Advanced*, and *Template*:

Simple search has a single field where one types any word or name.

Template format has fields, some with only blanks and others with pull-down menus.

Advanced search has special fields for Creator, Title, Location and Keywords. Combinations of these fields can create complex searches. You can use any word from the creator's name, any word from the title, and any words from location, as well as a wide range of keywords.

In the IMAGE project keywords are used for such things as Nationality, Art Form (Object Class), Medium/Material, Technique, Historical Era or Period, Style, Century Object or Building Type, Subject or Accession number. This works best in the Advanced mode either in the general search or in Lecture Builder (see below). Put each parameter on a different line, for example:

Keyword: Sculpture

Keyword: Medieval

Keyword: French

This will bring you French Medieval Sculpture. You might combine that with Location: Paris.

Note: use quotation marks to indicate that two or more words must go together. For example, British Museum will get you any record with Museum in it—and that is a lot—but “British Museum” will limit the search to the British Museum. Paris will get you anything from Paris, including the Louvre, but Louvre will limit you to things from the Louvre. % is the wild card.

Template format has fields, some with blanks to type in and others with pull-down menus. The pull-down menus indicate the categories of Style and Object type that are in the database as well as over four hundred groupings on a variety of subjects. In Almagest they are known as “Themes”, and they are the same as the “Portfolios” found in the California State University WorldImages database viewable at <http://worldimages.sjsu.edu>).

THE LECTURE BUILDER

You will need to have a password in order to use the Lecture Builder. (You can get a screen name and password from Almagest at almagest@princeton.edu.) The Lecture Builder allows you to create your lectures using images from one of the collections as well as adding your own images on the fly using the Data Manager. A template for group uploads is being developed. You will be able to make captions, to add and edit text, but you will not be able to delete text unless you have administrator's privileges.

The first thing that you must do is to Create a New Lecture by clicking on the button in the upper right. Indicate how many images you want to appear on a page (two is good to start with) and click Add Page for as many pages as you think you want to present. The Lecture Builder allows you to search the database using the Simple and Advanced Searches. Thumbnails showing the result from your search will appear at the top of your working screen in a section called Result. You can scroll through them and drag images on to one of the pages you have created in your lecture space. There are two radial buttons on the left, one for Image Mode and one for Page Mode and you can add pages in either, but you need to be in Image mode to manipulate images. (Note: When you are working be sure that you distinguish between the Page Mode and the Image Mode. If an image doesn't want to go where you want it to, see if you are in the Page Mode.)

Scroll through the thumbnails in the Results section. Drag your selected images one by one to the pages you have created. You can change their position on a page by dragging them, move them between pages or dispose of them in the trash. The Clipboard at the bottom of the workspace allows you to make a collection of images you think you might want for your lecture, but are not ready to assign to a page. Any image that you replace will automatically go to the Clipboard.

The thumbnails serve as a gateway to further information. When you hold your mouse on a thumbnail four small icons will appear. When you select the one with the letter “i” in a circle you will see information in the Image Record Display. When you select the magnifying glass you will see a larger version of the image. The square with the marching ants will allow you to crop the image, and the icon with the letter “T”

will allow you to create and format a caption for the image. The caption can be used to create examination questions that relate to a particular image or something that you wish to appear during the lecture in addition to the tombstone text that is already in the database.

Pull down menus at the top of the Lecture Builder screen allow you to manipulate your lecture and get additional information. Explore them. Here are a few that you will need. Under File you will find Properties, which allows you to set the dates when you want your lecture to appear and disappear as well as save it. View will allow you to see small icons of your pages and move them around as desired. Insert allows you to add additional pages and insert blank images, and Tools will allow you to export your lecture to Powerpoint. The Help menu provides a great deal of information about the operation of the program.

INSTALLING AND SUPPORTING ALMAGEST

The Almagest architecture is based on a web-based client-server model. Any one of several browsers may be used as already discussed. On the server side, the key components are:

- the Almagest software, which is available under an MIT “open source” license;
- an Oracle 10g database management system;
- an Apache Web Server with either Macromedia’s JRUN 4.0 or Tomcat.

The Almagest software was written to run on a Linux or Solaris platform with standard tools such as gunzip, perl, netpbm, and Apache ant.

Compilation of Almagest currently requires Java 1.3 (<http://java.sun.com/j2se/1.3/download.html>). Please note however that Tomcat 5.5 requires JRE 5.0.

The following subsections provide some additional details, but the complete installation procedures and requirements are described in the INSTALL.txt file that is bundled with the Almagest software.

Almagest Software

A copy of the MIT License is available at <http://www.opensource.org/licenses/mit-license.php>

The Almagest software can be downloaded from <http://sourceforge.net/projects/almagest>. The current version is 1.0.6 (December 22, 2005). There are two .tar.gz files, which each populate a directory: the “database” directory contains SQL scripts, etc.; the “almagest” directory contains help files (.html), Java files (.java, .class, .jar), JSP and javascript files, images, utilities (Perl scripts), .css files, etc.

Installation

Normally, the Almagest server software is first installed. For testing, the Almagest server will by default connect to Princeton’s Exchange Database Server:

- User=almagestuser
- Request the password from almagest@princeton.edu

To create an Almagest database, the installer will need the name of an empty Oracle database instance as well as the password for “SYS”. The procedures for setting up the database and connecting it to the Almagest server are described in the previously mentioned INSTALL.txt file.

Importing Images and Cataloging Data

The Almagest system provides a graphical user interface for one-at-a-time uploads of media files and for the creation of cataloging data. The open source distribution does not include tools for “bulk uploads” of media files and cataloging information, but at Princeton we have developed special-purpose tools for bulk uploads based on a strategy of creating a set of temporary, intermediate database tables in Oracle. For

example, we have migrated EmbARK data to Excel spreadsheets, from which selected fields can readily be uploaded into the intermediate database tables. If you require assistance in developing tools for bulk uploads, please contact almagest@princeton.edu.

Exporting Lectures to PowerPoint

Almagest was designed with the goal of making it convenient to deliver lectures on the web using an Almagest server, but the system also provides support for exporting lectures to PowerPoint. This functionality requires a Windows add-on module that is not currently provided as part of the standard distribution but is available on request to almagest@princeton.edu.

Support

- Email Contact: almagest@princeton.edu
- Listserv: almagest-list@princeton.edu
- Website: <http://www.princeton.edu/almagestopensource/>
- Manager: Kevin Perry, ETC; perry@Princeton.EDU

More information on the Almagest open source initiative can be found at the following URL:
<http://www.princeton.edu/~almagest/opensource>