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A Tool for Teaching Principles of Image Metadata Generation

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ABSTRACT

We developed a simple web-based prototype to familiarize students with digital library tools. To assist the students with the indexing task, the prototype provided basic functionalities, including metadata input form, photo search interface. The students generally expressed a positive feedback toward the use of digital library tools in their image indexing project.

Categories and Subject Descriptors

H.3.7 [Information Storage and Retrieval]: Digital Libraries – User issues; K.3.1 [Computers and Education]: Computer Uses in Education – Computer-assisted instruction (CAI);

General Terms: Design, Human Factors

Keywords: Digital Library Education, Image Indexing, Metadata, Repositories

1. INTRODUCTION

Although we have many digital library tools and standards such as Dublin Core and Fedora[1], we have little experience and less consensus about teaching students how to use these tools. This project developed a simple web-based prototype to familiarize students with digital library tools and introduced it to the students in a graduate-level class on Content Representation at Drexel University, Philadelphia.

In the class' image indexing assignment, the students were divided into three groups. Each member of the group had to index three sets of five photographs using a browser-based user interface. The prototype allowed them to compare their own metadata of the same images with other students in their group, through a search interface, and revise the indexing based on group discussion.

2. DESIGN AND IMPLEMENTATION

With ease-of-use as our design consideration, we developed a web-based application using Java Server Pages (JSP). Metadata were stored in a MySQL database. The images to be used were taken from a collection of 19th century photographs of India and China held by The Free Library of Philadelphia. This material

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was used since the photos are of inherent interest and are out of copyright.

The screenshot shows a web search interface with a navigation bar at the top containing links for Home, Group, Browse, Photo Search, Change Password, and Sign Out. Below the navigation bar is a search section with the heading "Search" and a form with two input fields and "search" buttons. The first input field is labeled "Photo ID, Title, Text on the front/back, City, Country, Notes:" and the second is labeled "Subjects:". Below the search section, a message reads "Here are the search results for query benares:". To the left is a small image of a river scene with people and buildings. To the right is a list of metadata for the image:

ID:	22
Indexer:	Sabine Lanteri
Title:	433. Benares. The Dashasometh Ghat.
Text on the Front:	A bathing Ghat, Benares. Pilgrims in the sacred ganges.
Text on the Back:	India-Benares
Country:	India, Bharat
City:	Benares, Varanasi
Subjects TGM:	Ghats, Pilgrims, Rites & ceremonies
Subjects AAT:	ghats, Hinduism, pilgrimage centers
Notes:	View of pilgrims: some are bathing in the Ganges river, others are under parasols at the river side. Other spellings: Dashasomesh, Dashaswamedh, Dashawamedh

Figure 1. Search interface showing images and metadata created by the student.

3. USE IN THE CLASSROOM

Not surprisingly, most students found the assignment of terms from controlled vocabularies the most challenging part of the assignment. The subject matter of the photographs (19th century China and India) was unfamiliar to almost all students (and not well dealt with by the available subject vocabularies). The students resembled Jorgensen's "naïve" users [2]; they reported greater consistency dealing with generic objects and scenes and more problems in agreeing upon abstract objects and concepts. The inclusion of a descriptive "notes" field was an important adjunct to the controlled descriptor fields. Several students commented on the benefits of group discussion – if only to hear what thought processes others followed when deciding what to index in a given image.

4. REFERENCES

- [1] Payette, S. and Lagoze, C., Flexible and Extensible Digital Object and Repository Architecture (FEDORA), *ECDL*, 1998, 41-59.
- [2] Jorgensen, C. A conceptual framework and empirical research for classifying visual descriptors, *Journal of the American Society for Information Science*, 52(11):938