Series of Workshops on Digital Library Foundations

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A workshop on "Foundations of Digital Libraries" was held in connection with the ACM IEEE JCDL 2007 Conference in June in Vancouver. The workshop was organized by Donatella Castelli (Italian National Research Council, ISTI-CNR, Pisa, Italy) and Ed Fox (Virginia Tech, Blacksburg, Virginia, USA), and it was the first one dedicated to this fascinating theme, which has gained increasing interest in recent years. Although digital libraries (DL) as a field dates back many years, it is not surprising that DL researchers feel the need for *foundations* for the field. The DL universe has experienced continued growth over the last fifteen years and has become a very complex one, producing diverse models and systems. Now DL researchers have become aware that foundations are urgent, since the results of their various DL projects are difficult to compare and even harder to combine and reuse to produce enhanced outcomes.

The papers presented during the workshop aimed to contribute to laying the foundations for digital libraries as a whole, as well as continuing the work on the definition of a Reference Model for Digital Libraries that was launched by the EU DELOS Network of Excellence on Digital Libraries. The common goal of the DELOS participants was to produce a reference framework wherein new results can be integrated, compared, and discussed. In order to contribute to the consolidation of key concepts, the workshop gave particular attention to the modeling of three of the main aspects characterizing the Digital Library universe: Content, Architecture, and Quality.

The workshop opened with a general introduction by Donatella Castelli on the motivations for foundational work in the DL area and on the specific objectives of the workshop itself. The workshop continued with presentations by three different groups of researchers and how they have approached the introduction of a more systematic and formal approach to DL definition and construction. First, Donatella Castelli provided an overview of what is being done within the DELOS Network of Excellence to deal with such objectives and outlined the results obtained so far. Then, Geneva Henry (Rice University, USA) described the methodology adopted by the Digital Library Federation for generating DL functionality from the analysis of Library business processes. Lastly, Ed Fox described the 5S DL formal model and the concepts characterizing the notion of "minimal DL".

The outlining of these three different perspectives was followed by various paper presentations. These touched on a number of different aspects that are relevant to DL

modelling by introducing:

- a formal, logic-based description of preservation;
- an approach for including 3D data types as basic elements of a DL model;
- an extension of future DL models for including the representation of mechanisms capable not only of retrieving stored documents, but also of providing additional knowledge derived from implicit or explicit associations among the documents;
- extensions of the existing 5S framework to deal with content-based image retrieval and superimposed information, and to generate a practical architecture based on DSpace;
- a proposal to bring DL modeling into the realm of the Enterprise Architecture, considering the architectures as Information Systems with specific business requirements; and
- a conceptual Reference Model for DL Quality.

Ed Fox moderated a final discussion wherein all the participants agreed on the need for intensifying efforts to converge towards a common view that would form the basis for a real advancement in the definition of the foundations of the Digital Library discipline.

The proceedings of this workshop are accessible through the DELOS DL (http://delos-dl.isti.cnr.it/OLP/UI/1.0/Main).

A second workshop on Digital Library Foundations will be held on September 20, in Budapest, in connection with the 11th ECDL Conference. Hopefully, this workshop, and further involvement of Library, Information, and Computer Science researchers, will attract other important communities interested in the essence of the DL field, i.e., library users and library providers. The results of this series of workshops will give these communities a better understanding of the DL universe, and the opportunity for reasoning about this universe and communicating with a common and well-founded concept vocabulary.

Related links:

First workshop web site <http://www.delos.info/FirstWSFoundations>.

Second workshop web site <http://www.delos.info/SecondWSFoundations>.

DELOS Reference Model <http://www.delos.info/ReferenceModel>.

JCDL 2007 Conference <http://www.jcdl2007.org/>.