



- Vittore Casarosa
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- “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/>**



(Digital) Libraries in the time of the Web



- The course will illustrate how the arrival of “computer technology” within libraries has brought an evolution both in the management and access to the information, and in the provision of services.
- This evolution is considered in relation to a similar evolution of technologies and functionality that has happened in the Web in the last 30 years, to cope with the management, access and retrieval of the information available in the Web.
- As an integral part of the course there will be the development of a (small) (personal) Digital Library

Modules



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

Course content - 1



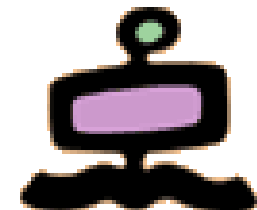
- Module 0 – Refresher on Computer Fundamentals and Networking
- Module 1 – A conceptual model for Digital Libraries
 - Introduction
 - Entities of interest in the “Universe of Digital Libraries”
 - Basic concepts and actors in Digital Libraries, and their relationships
- Module 2 – Bibliographic records and metadata
 - Classification and cataloguing, bibliographic records and MARC
 - Resources and metadata, the Dublin Core metadata schema
 - Exchanging information (Z39.50 and OAI-PMH)

Course content - 2



- Module 3 – Information Retrieval and Search Engines
 - Indexing a collection of documents
 - Query execution
 - Ranking query results
- Module 4 – Knowledge representation
 - FRBR: Functional Requirements for Bibliographic Records
 - LRM: Library Reference Model
 - RDF: Resource Description Framework
 - RDFS: RDF Schema, ontologies and vocabularies

Course content - 3



- Module 5 – Digital Libraries and the Web
 - Internet and the World Wide Web
 - Search engines in the Web
 - Ranking in Web search engines
 - Linked data and the Semantic Web
 - Co-existence of Digital Libraries and the Web
- Module 6 – The Greenstone system
 - Building your own digital library
 - Hands-on laboratory

Parallel evolution



Libraries

- Description (documents)
 - Bibliographic records
 - MARC
- Interoperability
 - Z39-50
- Conceptual model (classes)
 - FRBR – LRM for Works, Expr., Manif.
- Information Retrieval
 - Full text (catalogue and documents)

The Web

- Description (instances)
 - Metadata
 - Dublin Core
- Interoperability
 - OAI-PMH
- Conceptual model (classes)
 - RDF and RDF Schema for all resources (ontologies)
- Information Retrieval
 - Full text (web pages and resources)