Semantic Web

Tutorial 5
RDF Dublin Core Metadata Initiative (DCMI)
http://dublincore.org/

Dublin Core Metadata Initiative
Making it easier to find information
Dublin Core Metadata is an element set for simple describing information resources online and make them machine-readable.

Information resources like: digital materials such as video, sound, image, text, and composite media like web pages;
- DCMI founded in 1994

- 1995 workshop in Dublin/Ohio called OCLC/NCSA Metadata Workshop

- Consensus about terms categorizing web resources called *Dublin Core Metadata*
DCMI has now the task to

- enhance and maintain the Metadata Schema

- develop tools and infrastructure to allow easier maintenance and enhancement
DCM consists of two parts:

- Simple Dublin Core (15 elements)
  - (next slides)

- Qualified Dublin Core (properties)
  - Audience
  - Provenance
  - RightsHolder
  - Other properties (isVersionOf, isPartOf, etc;)

For more detailed information visit: http://dublincore.org/documents/dces/
Dublin Core Elements

1. Identifier

identifies the resource using e.g. URL/PURL, URN, ISBN/ISSN, etc;

Dublin Core Elements (cont)

2. Format

includes the format with which the described resource can be displayed or processed

<dc:format>image/jpeg</dc:format>
Dublin Core Elements (cont)

3. Type

describes the type of the document like: collection, event, sound, image, moving image, still image, text image, text, physical object, interactive resource, software, dataset, service

<dc:type>text</dc:type>
Dublin Core Elements (cont)

3. **Language:**

   gives information about the in the document (resource) used language like: gsw, ger-ch (Schriftdeutsch)

DIN EN ISO 3166 (shortcuts for states)

```xml
<dc:language>en</dc:language>
```
Dublin Core Elements (cont)

4. Title:

includes known title/name of the document


5. Subject:

describes the topic of the content of the resource using e.g. keywords

<dc:subject>electrical equipment, computer</dc:subject>
Dublin Core Elements (cont)

6. Coverage:

is about the extent or scope of the content of the resource (e.g. using coordinates or time)

<dc:coverage>Germany</dc:coverage>
Dublin Core Elements (cont)

7. Description:

short description about the content of the resource (abstract way or link to a source which describes the resource)

<dc:description>Examples about Dublin Core elements</dc:description>
Dublin Core Elements (cont)

8. Creator:

entity responsible for making the content of the resource

<dc:creator>Andreas Wechselberger</dc:creator>
Dublin Core Elements (cont)

9. Publisher:

   entity responsible for making the resource available

<dc:publisher>E-Business and Web Science Research Group</dc:publisher>
Dublin Core Elements (cont)

10. Contributer:

entity (name of the person/organization) responsible for making contributions to the content of the resource

<dc:contributer>Prof. Dr. Martin Hepp</dc:contributer>
Dublin Core Elements (cont)

11. RightsHolder:

person or organization which is owner of the rights of the resource

<dc:rightsHolder>Universität der Bundeswehr München</dc:rightsHolder>
Dublin Core Elements (cont)

12. Rights:

includes information about rights held in and over the resource

<dc:rights>Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 Unported License</dc:rights>
Dublin Core Elements (cont)

13. Provenance:

information about any changes in ownership of the authenticity/integrity/interpretation of the resource

<dc:provenance>This work was once owned by James D.</dc:provenance>
Dublin Core Elements (cont)

14. Source:

reference to a resource from which the present resource is derived

Dublin Core Elements (cont)

15. Relation:

references to a document to which the resource is in relation with

Dublin Core Elements (cont)

16. Date:

date of an event in the lifecycle of the resource
(dateCopyrighted, created, dateSubmitted, modified,
dateAccepted, issued, available, valid)

<dc:date action="created">2008-11-04</dc:date>
Dublin Core Elements (cont)

17. Audience:

describes for whom the resource is intended and useful

<dc:audience>Students, Researcher</dc:audience>
Dublin Core Elements (cont)

For more detailed information visit:

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<?xml version="1.0"?>

<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:dc= "http://purl.org/dc/elements/1.1/">

  <rdf:Description rdf:about="http://www.w3schools.com">
    <dc:title>D-Lib Program</dc:title>
    <dc:description>W3Schools - Free tutorials</dc:description>
    <dc:publisher>Refsnes Data as</dc:publisher>
    <dc:date>1999-09-01</dc:date>
    <dc:type>Web Development</dc:type>
    <dc:format>text/html</dc:format>
    <dc:language>en</dc:language>
  </rdf:Description>

</rdf:RDF>

source: http://www.w3schools.com/rdf/rdf_dublin.asp
DMCI + RDF Example 2

<?xml version="1.0"?>

<rdf:RDF
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:dc="http://purl.org/dc/elements/1.1/">

<rdf:Description>
  <dc:title>Examples for DMCI, RDF Example and FOAF</dc:title>
  <dc:creator>Andreas Wechselberger</dc:creator>
  <dc:creator>Andreas Radinger</dc:creator>
  <dc:subject>example, metadata, dublin core, resource description, foaf, rdf</dc:subject>
  <dc:description>This document is just an example for dublin core metadata in RDF and FOAF</dc:description>
  <dc:publisher>E-Business and Web Science Research Group</dc:publisher>
  <dc:format>text/html</dc:format>
  <dc:type>Technical Report</dc:type>
  <dc:language>en</dc:language>
  <dc:date>2008-11-04</dc:date>
</rdf:Description>

</rdf:RDF>

http://ebusiness-unibw.org/resources/examples/
Tools

Dublin Core Metadata Editor
http://www.ukoln.ac.uk/metadata/dcdot/

RDF Validator
http://www.w3.org/RDF/Validator/

Dublin Core Viewer (Firefox Add-on)
Books
Antoniou/van Harmelen: A Semantic Web Primer
MIT Press 2004

Internet
W3C (http://www.w3c.org/)

Tutorials
W3C Schools (http://www.w3schools.com/)
Thank you!