

Resource Description Framework (RDF)

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What is RDF?

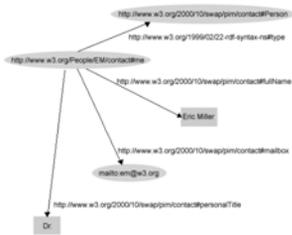
- Used to represent information about resources on the web
- Can represent any resource, including things that can not be directly retrieved such as an author of a web page
- Intended for use where information not only needs to be displayed to people, but also processed by a machine

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RDF and URI



RDF is a collection of URIs to identify a given Resource. These URIs are set up in a graph with the URIs as the arches and the information as the nodes.

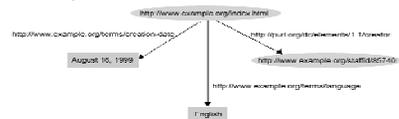
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Relations and Statements

- All RDF information is defined with Statements like “CPS196.3 has a **student** whose value is Roy Williams”
- All of these relationships can be broken up into a subject, a predicate, and an object



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Relations and Statements (cont...)

- A Subject, Predicate, Objects set is referred to as a “Triple”
- “Vocabularies are set up to set exact meaning of items in a triple.
- For example, sets up the difference between when “name” is used in reference to a person as opposed to being used in reference to a variable name in a function

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RDF/XML

- RDF is implemented using XML
- Formatted with the the root as the definitions such as namespaces and syntaxes
- Then, for each description the parent node is the subject, and the child node's name is the predicate, and the child node's text is the object

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RDF/XML Example

```
1. 1. <?xml version="1.0"?>
2. 2. <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-
   ns#"
3. 3.     xmlns:exterms="http://www.example.org/terms/">
4. 4.   <rdf:Description
   rdf:about="http://www.example.org/index.html">
5. 5.     <exterms:creation-date>August 16,
   1999</exterms:creation-date>
6. 6.   </rdf:Description>
7. 7.   <rdf:Description
   rdf:about="http://www.example.org/index.html">
8. 8.     <exterms:language>English</exterms:language>
9. 9.   </rdf:Description>
10.10. </rdf:RDF>
```

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Dublin Core Metadata Initiative

- “*Metadata is data about data.*”
- Example: Library Catalog or a Search Engine.
- The DCMI is an attempt to provide a minimal set of information needed to describe a document

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Dublin Core (cont)

- **Fields include:**
 - Title
 - Creator
 - Subject
 - Description
 - Contributor
 - Data
 - Type
 - Format
 - Identifier
- Source
- Language
- Relation
- Coverage
- Rights

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Dublin Core example

```
<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.dlib.org">
    <dc:title>D-Lib Program - Research in Digital Libraries</dc:title>
    <dc:description>The D-Lib program supports the community of people
    with research interests in digital libraries and electronic
    publishing.</dc:description>
    <dc:publisher>Corporation For National Research
    Initiatives</dc:publisher>
    <dc:date>1995-01-07</dc:date>
    <dc:subject>
      <rdf:Bag>
        <rdf:li>Research; statistical methods</rdf:li>
        <rdf:li>Education, research, related topics</rdf:li>
        <rdf:li>Library use Studies</rdf:li> </rdf:Bag>
      </dc:subject>
    </dc:subject>
  </rdf:Description>
</rdf:RDF>
```

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Etc.....

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NEXT:

- What's keeping Semantic web from being implemented?

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