

# *Resource Description Framework*

ml

- **RDF is:**
  - a foundation for processing metadata (data about data)
  - provides interoperability between applications that exchange machine-understandable information on the Web
  - emphasizes facilities to enable automated processing of Web resources
  - can be used in a variety of application areas:
    - *resource discovery to enhance search engines*
    - *for describing the content and content relationships available at a particular Web site, or digital library*
      - in describing collections of pages that represent a single logical “document”
    - *by intelligent software agents to facilitate knowledge sharing and exchange*
    - *in content rating*
    - *RDF with digital signatures will be key to building the “Web of Trust” for electronic commerce, collaboration, and other applications*

- Three basic object types:

- resources

- *an entire Web page, a part of a Web page, a whole collection of pages, an object that is not directly accessible via the Web; e.g. a printed book*

- resources are always named by URIs

- *anything can have a URI*

- properties

- *a specific aspect, characteristic, attribute, or relation used to describe a resource*

- statements

- *a specific resource plus a named property plus the value of that property for that resource*
- the subject, the predicate, and the object

- **Also:**
  - it is frequently necessary to refer to a collection of resources
  - RDF has containers for this purpose
    - *Bag*
      - an unordered list with no significance to the order in which the values are given
        - *may contain duplicates*
    - *Sequence*
      - an ordered list of resources or literals
        - *may contain duplicates*
    - *Alternative*
      - a list of resources or literals that represent alternatives for the (single) value of a property

# • Distributive Referents

– statements about members of a container

• *makes it possible to:*

– share structure

– represent things more compactly

And More...

```

<rdf:Bag ID="pages">
  <rdf:li resource="http:// http://www.transentia.com.au/docs/foo.html" />
  <rdf:li resource="http:// http://www.transentia.com.au/docs/bar.html" />
</rdf:Bag>
  
```

```

<rdf:Description about="#pages">
  <Creator>Bob</Creator>
</rdf:Description>
  
```

Bob is the creator of the *bag* “pages”

```

<rdf:Description aboutEach="#pages">
  <Creator>Bob</Creator>
</rdf:Description>
  
```

Bob is the creator of *each of the pages in the bag* “pages”

```

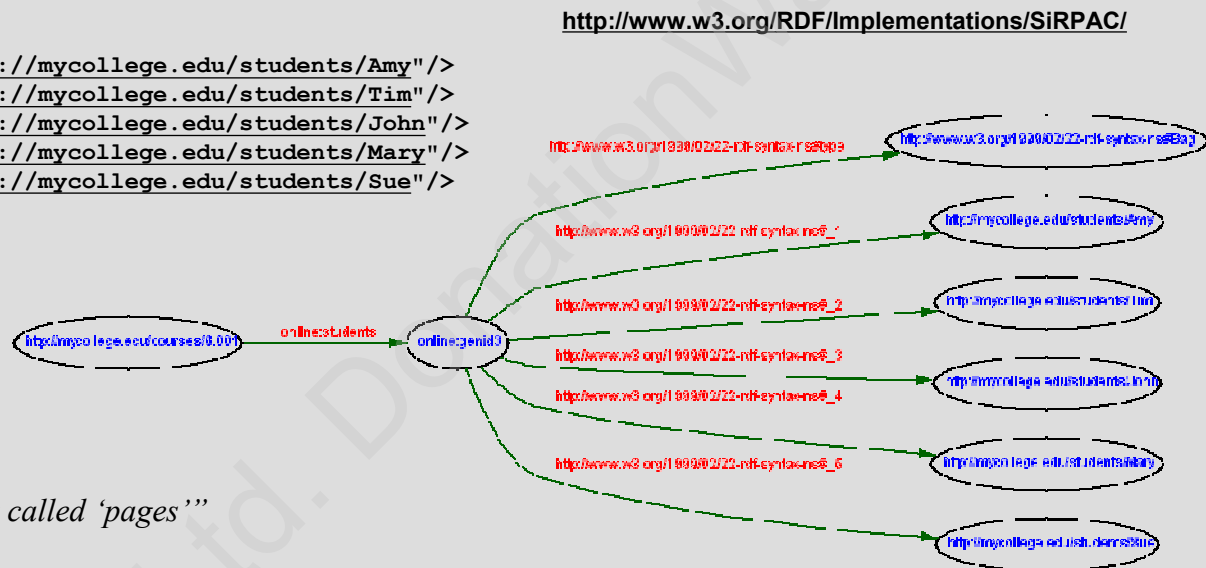
<rdf:Description about="http:// http://www.transentia.com.au/docs/foo.html">
  <Creator>Bob</Creator>
</rdf:Description>
  
```

```

<rdf:Description about="http://www.transentia.com.au/docs/bar.html">
  <Creator>Bob</Creator>
</rdf:Description>
  
```

"The students in course 6.001 are Amy, Tim, John, Mary, and Sue"

```
<rdf:RDF>
  <rdf:Description about="http://mycollege.edu/courses/6.001">
    <students>
      <rdf:Bag>
        <rdf:li resource="http://mycollege.edu/students/Amy"/>
        <rdf:li resource="http://mycollege.edu/students/Tim"/>
        <rdf:li resource="http://mycollege.edu/students/John"/>
        <rdf:li resource="http://mycollege.edu/students/Mary"/>
        <rdf:li resource="http://mycollege.edu/students/Sue"/>
      </rdf:Bag>
    </students>
  </rdf:Description>
</rdf:RDF>
```



Bob is the creator of the Bag called 'pages'"

```
<rdf:Bag ID="pages">
  <rdf:li resource="http://foo.org/foo.html" />
  <rdf:li resource="http://bar.org/bar.html" />
</rdf:Bag>

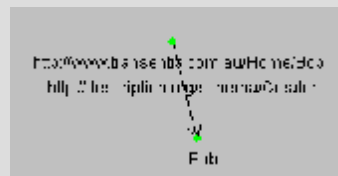
<rdf:Description about="#pages">
  <Creator>Bob</Creator>
</rdf:Description>
```

"Bob is the creator of the resource <http://www.transentia.com.au/Home/Bob>"

object	predicate	subject
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```
<?xml version="1.0"?>
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:s="http://description.org/schema/">
  <rdf:Description about="http://www.transentia.com.au/Home/Bob">
    <Creator>Bob</Creator>
  </rdf:Description>
</rdf:RDF>
```

<http://jigsaw.w3.org/>



- Much work is being carried out in areas related to, or using, RDF
  - Platform for Internet Content Selection (PICS)
    - *actually a precursor for RDF but still important*
    - *a W3C Recommendation for exchanging descriptions of the content of Web pages and other material*
  - Dublin Core metadata
    - *designed to facilitate discovery of electronic resources in a manner similar to a library card catalog*
      - developed by the library community
  - Digital Signatures
  - Platform for Privacy Preferences Project (P3P)
    - *enables Web sites to express their privacy practices in a standard format that can be retrieved automatically and interpreted easily by user agents*
  - Netscape's "What's Related" feature