Distributed Software Development

RDF

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RDF stands for *Resource Description Framework*

Provides a way to describe properties that belong to objects.

Much like a relational database.

Can be serialized as XML, but it’s easiest not to get hung up on the XML syntax initially.

△ Built to be created and consumed by machines.
RDF is a very popular framework for describing resources on the Web.
- RSS
- Mozilla
- Creative Commons
- FOAF
- Tucana Knowledge Store

All of these applications need a more powerful way of representing information than XML provides by itself.
Recall that XML produces a tree-structured data model.

This can make it hard to represent some sorts of knowledge.

How to denote that two elements share a sub-element?
10-3: Representation in XML

For example:

```
<song>
  <artist>Doors</artist>
  <title>Break On Through</title>
  <album>Greatest Hits</album>
</song>

<song>
  <artist>Doors</artist>
  <title>Light My Fire</title>
  <album>Greatest Hits</album>
</song>

<song>
  <artist>Devo</artist>
  <title>Through Being Cool</title>
  <album>Greatest Hits</album>
</song>
```
RDF represents data in terms of *triples*

Subject, property, value


Properties allow us to express relations between objects.
  ▲ In AI, we called these things *predicates*
From a set of RDF triples, we can construct an RDF graph.

Subject and value are nodes

- Nodes can be
  - URIs - a generalized form of a URL
  - blank nodes - mostly useful as placeholders
  - literals - strings, values, etc.

Properties are edges.
An RDF graph can be serialized as XML.
Elements are subjects.
Relations are subelement tags.
Objects are subelements.
The ability to name objects with URIs separates this from XML.
Example: FOAF

```
<foaf:Person rdf:nodeID="me">
<foaf:name>Chris Brooks</foaf:name>
<foaf:title>Dr</foaf:title>
<foaf:givenname>Chris</foaf:givenname>
<foaf:family_name>Brooks</foaf:family_name>
...
```
RDF is a big and complex topic.

Let’s focus on a simple application: FOAF

- Friend-of-a-friend

FOAF is a way of encoding personal information in RDF.

Can be used to describe a network of friends.
Some of the properties FOAF lets you describe include:

- mbox - email address as a mailto
- name
- homepage
- phone number
- publications
- knows - URIs of other people you know.

This last bit is potentially the most interesting ...