10-0: RDF

- 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.

10-1: Uses of RDF

- 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.

10-2: RDF's data model

- 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:

  ```xml
  <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>
  ```

10-4: RDF's data model

- 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
10-5: RDF's data model

- 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.

10-6: RDF/XML

- 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.

10-7: Example: FOAF

```xml
<foaf:Person rdf:nodeID="me">
  <foaf:name>Chris Brooks</foaf:name>
  <foaf:givenName>Chris</foaf:givenName>
  <foaf:familyName>Brooks</foaf:familyName>
  ...
</foaf:Person>
```

10-8: FOAF

- 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.

10-9: FOAF

- 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 ...