When Drupal and RDF meet

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- SemWeb geek

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Drupal

- Small news site in 2000
- Open Source - 2001
- Content Management System
- LAMP stack
- Non-developers can build sites and publish content
- Control panels instead of code

http://www.flickr.com/photos/funkyah/2400889778/
Drupal

- Open & modular architecture
- Extensible by modules
- Standards-based
- Low resource hosting
- Scalable
Drupal

- Create the content types you need:
  Blog, article, wiki, forum, polls, image, video, podcast, e-commerce... (be creative)

http://www.flickr.com/photos/grdloizaga/817425185
Drupal

• Enable the features you want:

  Comments, tags, voting/rating, location, translations, revisions, search...

  (from the 3000+ modules contributed by the community)

http://www.flickr.com/photos/grdloizaga/817425185
Drupal

- Place links in the navigation bars and blocks
- Build Views over your data
Who uses Drupal?
Who uses Drupal?
Who uses Drupal?
Who uses Drupal?

http://buytaert.net/tag/drupal-sites
• 227,000 sites running Drupal

• How to leverage all this data?

• <insert RDF sales pitch here>
Experiment in Drupal 6

- Expose Drupal's data in RDF
- Automatically
- No RDF expertise required
- Module based

http://www.flickr.com/photos/neys/2386865187
Architecture

- User driven data model
- Content type = RDF class
- Field = RDF property
- Node = RDF resource

http://www.flickr.com/photos/docman/2216568210
Content types and Fields

Add fields and groups to the content type, and arrange them on content display.
You can add a field to a group by dragging it below and to the right of the group.

Note: Installing the Advanced help module will let you access more and better.

<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Node module form.</td>
<td></td>
</tr>
<tr>
<td>First name</td>
<td>field_fn</td>
<td>Text</td>
</tr>
<tr>
<td>Last name</td>
<td>field_in</td>
<td>Text</td>
</tr>
<tr>
<td>Picture</td>
<td>field_picture</td>
<td>Image</td>
</tr>
<tr>
<td>Colleagues</td>
<td>field_friend</td>
<td>Node reference</td>
</tr>
<tr>
<td>Current projects</td>
<td>field_current_project</td>
<td>Node reference</td>
</tr>
</tbody>
</table>
Content types and Fields

Global settings

These settings apply to the *Gender* field in every content type in which it appears.

- **Required**

**Number of values:**

1

Maximum number of values users can enter for this field.

Warning! Changing this setting after data has been created could result in the loss of data!

**Allowed values**

Create a list of options as a list in *Allowed values list* or as an array in PHP code. These values will be the same for *Gender* in all content types.

**Allowed values list:**

- Male
- Female
Node

Stephane Corlosquet

First name: Stephane
Last name: Corlosquet
Homepage: http://openspring.net/
Email: stephane.corlosquet@deri.org
        scorlosquet@gmail.com
Colleagues: Aidan Hogan
           Andreas Harth
           Axel Polleres
           Tim Clark
Current projects: Drupal
       Drupal Semantics
       Science Collaboration Framework
Mapping to RDF

- site:Person a rdfs:Class;
  
rdfs:subClassOf foaf:Person.

- site:first_name a rdf:Property;
  
rdfs:subPropertyOf foaf:firstName.

- site:colleague rdfs:domain site:Person.
Mapping to RDF

Specify the RDF class of this content type. You can also map the CCK fields to RDF.

RDF class:

- person

- foaf:Person

- `<http://xmlns.com/foaf/0.1/Person>` Person* A person.

- `<http://ebiquity.umbc.edu/ontology/person.owl#Person>` Person

- `<http://rs.tdwg.org/ontology/voc/Person#Person>` Person* A representation of a human being, living or dead.

- `<http://www.cyc.com/2003/04/01/cyc#Person>` persons* The collection of all human beings. Something is an instance of #$Person just in case it is a member of the species Homo Sapiens, and thus #$Person is an instance of #$BiologicalSpecies Homo sapiens.`
### Mapping to RDF

<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Type</th>
<th>RDF property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last name</td>
<td>field_last_name</td>
<td>Text</td>
<td>foaf:surname</td>
</tr>
<tr>
<td>Picture</td>
<td>field_picture</td>
<td>Image</td>
<td>foaf:depiction</td>
</tr>
<tr>
<td>URI</td>
<td>field_myuri</td>
<td>Link</td>
<td>owl:sameAs</td>
</tr>
<tr>
<td>Homepage</td>
<td>field_homepage</td>
<td>Link</td>
<td>foaf:homepage</td>
</tr>
<tr>
<td>Email</td>
<td>field_email</td>
<td>Text</td>
<td>foaf:mbox</td>
</tr>
<tr>
<td>Colleagues</td>
<td>field_friend</td>
<td>Node reference</td>
<td>relationship works</td>
</tr>
<tr>
<td>Resume</td>
<td>field_resume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blog</td>
<td>field_blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current projects</td>
<td>field_current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past projects</td>
<td>field_past</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>field_gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizations</td>
<td>field_organization</td>
<td>Node reference</td>
<td>foaf:member of</td>
</tr>
<tr>
<td>Posts</td>
<td>field_post</td>
<td>Node reference</td>
<td>foaf:made</td>
</tr>
</tbody>
</table>

- `Works With`: A person who works for the same employer as this person.
- `works with`: This predicate relates two agents (people or organizations) who in some way work together. ($\text{\$worksWith AG1 AG2}$) means that $\text{\$Agent AG1 and \$Agent AG2 work together or cooperate in some activity for mutual benefit. They may or}$
Experiment continued

1. Automatic site vocabulary generation
2. Mapping Content Models to existing ontologies
3. Data endpoint for SPARQL querying
4. Lazy loading of external data (data import)
Drupal 7 and RDF

- Drupal 7 core is RDFa enabled!
- RDFa output by default on blogs, forums, comments, etc. using FOAF, SIOC, DC, SKOS
- Alpha release on Friday
- Sneak preview http://drupalrdf.openspring.net/
Drupal 7 and RDF
Conclusion

- Drupal 7 will play a major role in exposing more RDF data on the web
- Empower users to create new types of apps
- Wide range of topics
- http://groups.drupal.org/semantic-web
- http://openspring.net/

- Questions?