COMP 872   Social Semantic Web   Fall 2014   Assignment 1—<u>Solutions</u>

Due by Friday, Sept. 5 at 11:00 PM

1. Express the following in an N3 RDF document. Use shorthand notation (e.g., for triples with a common subject and for the `rdf:type` property) as much as possible, use bnodes wherever they are natural, and make free use of the elements in the FOAF vocabulary and, if needed, the Dublin Core vocabulariy.

> *The document*
>
> `http://www.Acme.com/news/BillSmithDissed.html`
>
> *is about a guy named Bill Smith, whose knows Acme employees Al Jones (employee id 473) and Ann White (employee id 215), and who created the document*
>
> `http://www.BillSmith.net/news/AcmeDissed.html,`
>
> *which is about the Acme company*

Suppose that the URI

`http://www.Acme.com/employeeid/`

is associated with the ids of Acme employees.

The following are the suggested bindings to establish between prefixes and URIs in the preamble of your document. The first three are standard bindings.

`rdf:` with `http://www.w3.org/1999/02/22-rdf-syntax-ns#`
`dc:` with `http://purl.org/dc/elements/1.1/`
`foaf:` with `http://xmlns.com/foaf/0.1/`

The next binding is a suggestion for the URI introduced here.

`empid:` with `http://www.Acme.com/employeeid/`

Identify all people as such (using foaf:Person) and all documents as such. You may use `foaf:Group` to indicate that Acme is a company. Be sure to include the names of entities when they are given.
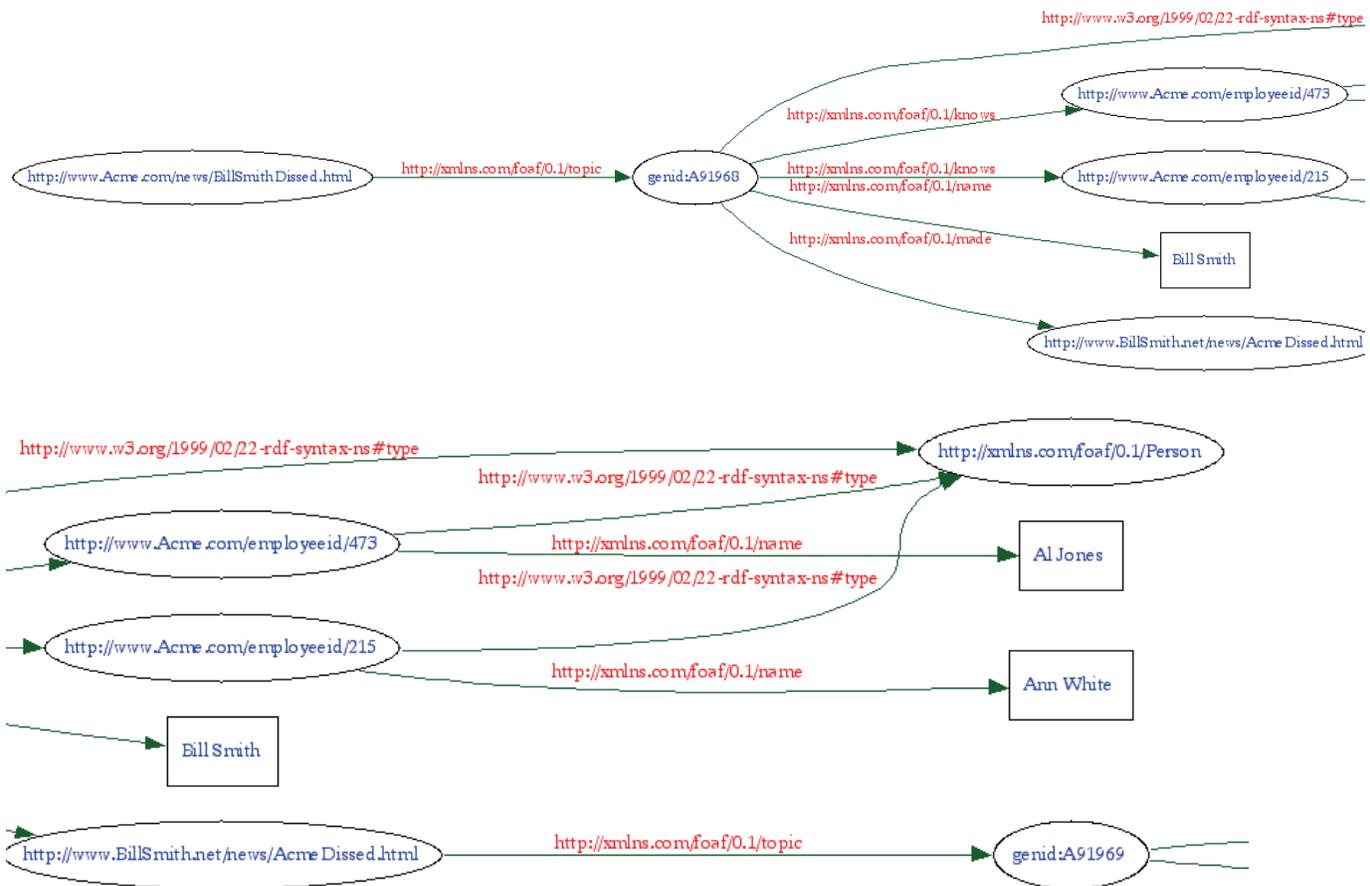
Validate your answer using Apache Any23 at http://any23.org/ as described in the slides. Submit to Blackboard your answer in a Word document along with a paragraph of modest size explaining your N3 RDF document, including justifications for decisions you were forced to make. Also include a copy of the RDF graph that you get by copying the RDF/XML Any23 into the W3C RDF Validator (http://www.w3.org/RDF/Validator/) and clicking on Parse RDF with Triples and Graph selected in the display option. (You will have to cut this graph into two or more pieces to fit it into the Word document.) The validator is just a syntax checker; it doesn't check that you use URIrefs and literals with the correct semantics. I'll determine this.

Answer—See the next page.

```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix empid: <http://www.Acme.com/employeeid/> .
<http://www.Acme.com/news/BillSmithDissed.html>
   foaf:topic
   [ a foaf:Person;
     foaf:name "Bill Smith";
     foaf:knows  empid:473, empid:215;
     foaf:made <http://www.BillSmith.net/news/AcmeDissed.html> ] .
empid:473 a foaf:Person;
   foaf:name "Al Jones" .
empid:215 a foaf:Person;
   foaf:name "Ann White" .
<http://www.BillSmith.net/news/AcmeDissed.html>
   foaf:topic
   [ a foaf:Group;
     foaf:name "Acme" ] .
```
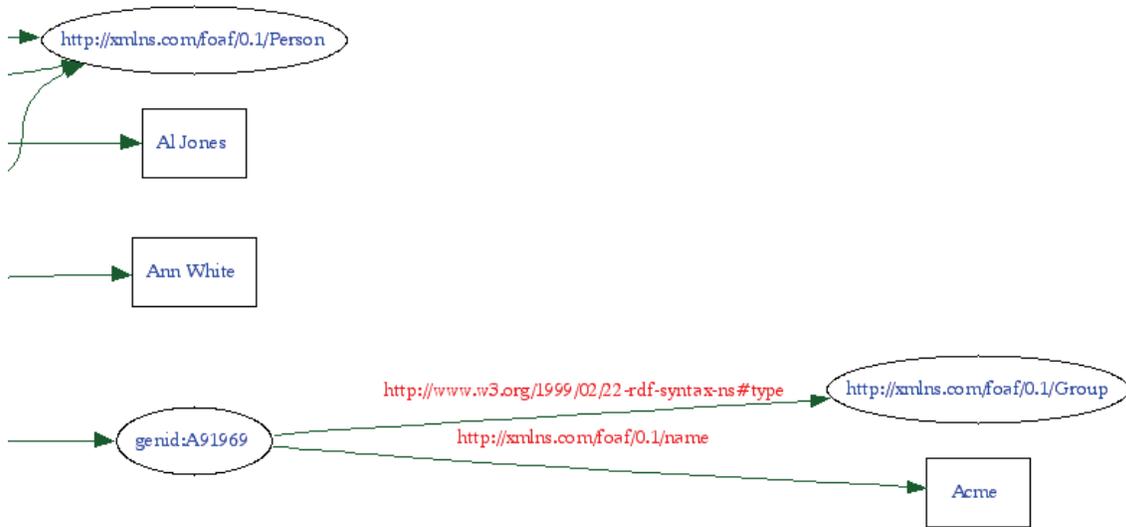
The following is the RDF graph, split into three overlapping parts.

Continued on the next page

http://xmlns.com/foaf/0.1/Person

Al Jones

Ann White

genid:A91969

http://www.w3.org/1999/02/22-rdf-syntax-ns#type

http://xmlns.com/foaf/0.1/name

http://xmlns.com/foaf/0.1/Group

Acme

2. Express the following in an N3 RDF document. Follow the directions given for Problem 1.

  Jane wrote a document about Fred. Jane and Fred know each other.

Use prefixes as in Problem 1. Because of cross references, you will not be able to use the `[...]` notation for bnodes but rather must introduce placeholders (of the form `_:xxx`) for them.

   As with Problem 1, validate your answer, and submit it in a Word document that includes a paragraph explaining your document and a copy of the RDF graph (split into several pieces) produced by the W3C RDF Validator.

Answer

```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
_:jane a foaf:Person ;
   foaf:name "Jane" ;
   foaf:knows _:fred ;
   foaf:made [ a foaf:Document ; foaf:topic _:fred ] .
_:fred a foaf:Person ;
   foaf:name "Fred" ;
   foaf:knows _:jane .
```

The following is the RDF graph, split into two overlapping parts.