What's New in RDF 1.1

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http://www.w3.org/2013/Talks/0409-rdf11/

History

- 1997 Mission:Web Page Metadata (PICS-NG, MCF)
- 1999 Output: RDF Model, XML Syntax
- 2001 Mission: Clarify specs, add datatypes
- 2004 Output: Model Theory (w/datatypes), XML Syntax
- … SPARQL, RIF, OWL, BPD, SKOS, ...
- 2010 RDF Next Steps Workshop
    http://www.w3.org/2010/06/rdf-work-items/table
- 2011 Mission: **Turtle, JSON, Named Graphs**, BugFix
- 2013 (today's talk)

Turtle

See: http://www.w3.org/TR/turtle/

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix rel: <http://www.perceive.net/schemas/relationship/> .

<#green-goblin>
    rel:enemyOf <#spiderman> ;
    a foaf:Person ;    # in the context of the Marvel universe
    foaf:name "Green Goblin" .

<#spiderman>
    rel:enemyOf <#green-goblin> ;
    a foaf:Person ;
    foaf:name "Spiderman", "Человек-паук"@ru .
```

What's New (in Turtle)

- Becoming a W3C Recommendation

- Small tweaks

    - No extra space needed before period

        <#alice> foaf:age 7.

    - String escapes, i18n

    - Colons allowed in prefix

        For OGP, eg og:image:url

Issues (in Turtle)

- @prefix and @base like n3

  Or PREFIX and BASE like SPARQL

  Or both?

- How much will it supplant RDF/XML?

- How much will it be used inside HTML?

JSON-LD

- See http://www.w3.org/TR/json-ld/

  and http://json-ld.org/

- JSON and RDF coexisting happily

- Developed by a W3C Community Group, being published by RDF Working Group

Basic JSON

```
{

  "name": "Manu Sporny",

  "homepage": "http://manu.sporny.org/",

  "image": "http://manu.sporny.org/images/manu.png"

}
```

- But (of course) which "homepage" property is that?
- And are those URLs links or strings?

JSON-LD ("Expanded" form)

- Properties are URLs

- Indicate which values are URLs

- Indicate datatypes (not shown)

```
{

  "http://schema.org/name": "Manu Sporny",

  "http://schema.org/url": { "@id": "http://manu.sporny.org/" },

  "http://schema.org/image":

                { "@id": "http://manu.sporny.org/images/manu.png" }

}
```

- Nice mapping to RDF, but too ugly for normal JSON use

"@context": Compact JSON-LD

```
{

  "@context": "http://json-ld.org/contexts/person.jsonld",

  "name": "Manu Sporny",

  "homepage": "http://manu.sporny.org/",

  "image": "http://manu.sporny.org/images/manu.png"

}
```

- Context is JSON object, inline or linked (as above)
- Context can be learned from HTTP headers instead

JSON-LD

- Looks good to many of us

- For many existing JSON APIs, easy to add an @context

- For new APIs, an easy way to speak both RDF and JSON

- … great wherever JSON and RDF both have value

Datatypes News

- See http://www.w3.org/TR/rdf11-concepts/

- Unified string literals

- All literals are now typed

- Loosening XMLLiteral

- Adding rdf:HTML

- Adding types like duration, dateTimeStamp

Named Graphs

- Systems need to manage multiple graphs

- SPARQL does this. Instead of a graph, it has a *Dataset:*

  - One "default graph"

  - Multiple "named graphs"

- If you just want one graph, it's the "default"

Trig (Dataset Language)

@prefix foaf: <http://xmlns.com/foaf/0.1/> .

@prefix rel: <http://www.perceive.net/schemas/relationship/> .

{ <#magneto> foaf:name "Magneto".

   <#xavier> foaf:name "Professor X", "Charles Xavier". }

<#issue1> **{** <#magneto> rel:enemyOf <#xavier> **}**

<#issue15> **{** <#magneto> rel:friendOf <#xavier>;

                                foaf:name "Erik Lehnsherr" **}**

Why Datasets?

- Store/share the results of a crawler

  - Maybe only store latest
  - Maybe store archival data

- Keep track of inference, allow refresh

- Keep track of your sources

- Data changing over time...

Clarifications & Issues

- Yes, blank nodes can be shared among graphs in a dataset

- Repeating a label in TriG allows adding more triples, later in the file

    <#g1> { … some triples … }

    <#g1> { … some more triples … }

- No formal semantics

- Labels are IRIs (maybe blank nodes?)

Other

- Editorial revision of RDF Semantics

  - See http://www.w3.org/TR/rdf11-mt/

- Will revise RDF/XML, Primer, …

- Blank nodes?

  - Genid defined for turning into IRIs

  - Not yet 100% settled

- N-Triples re-defined, N-Quads defined

Summary

- Turtle – in Candidate Recommendation

- JSON-LD – Last Call this week?

- Datatypes – rdf:HTML (dependency?)

- TriG, N-Quads, Named Graphs – Draft today

- FEEDBACK WELCOME

  - See drafts for details