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)
<#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 .

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

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

```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.orgcontexts/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