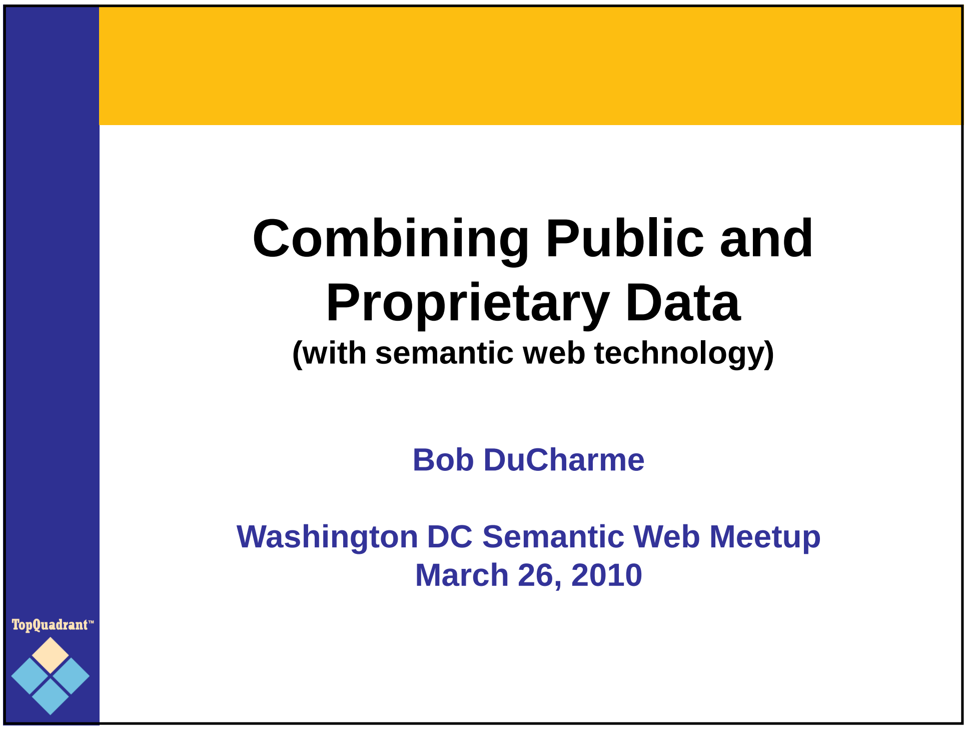
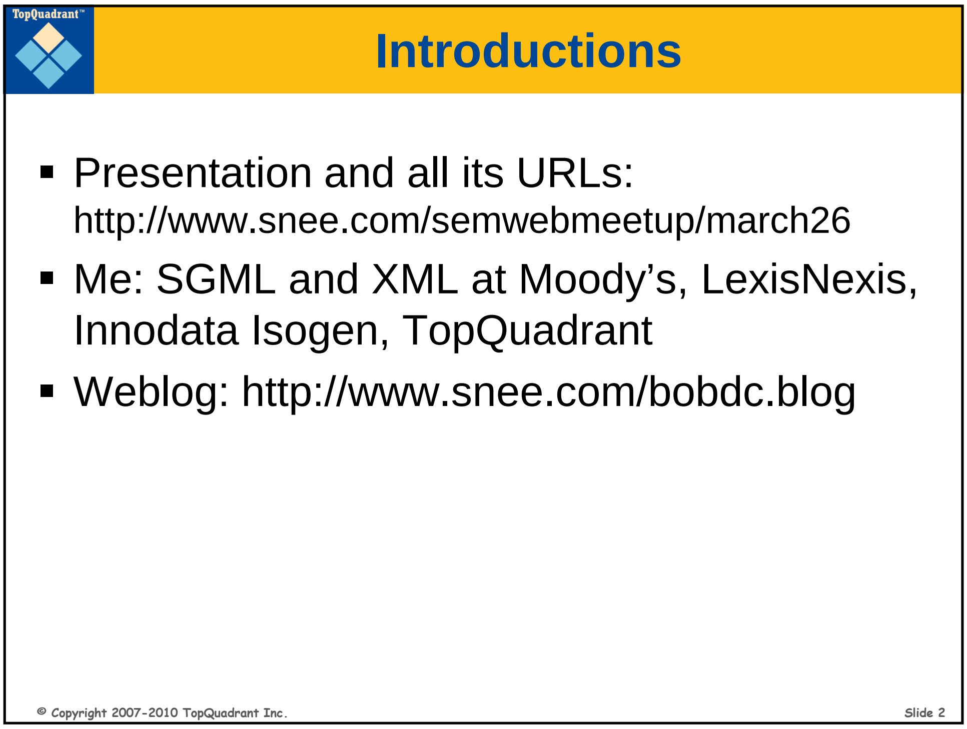


Combining Public and Proprietary Data

(with semantic web technology)

Bob DuCharme

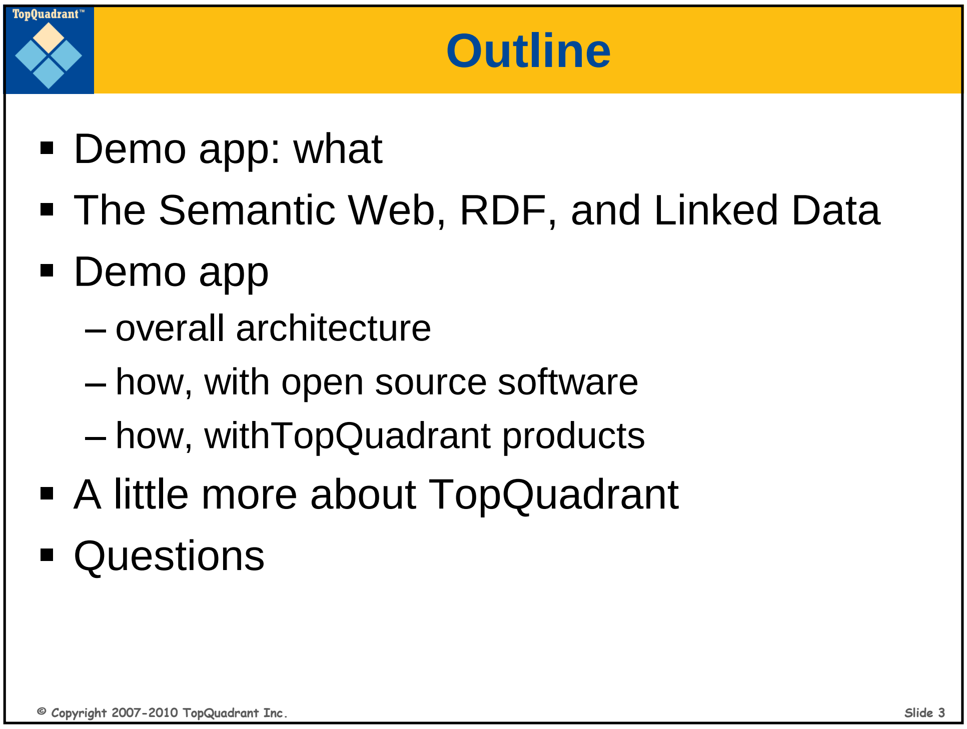
Washington DC Semantic Web Meetup
March 26, 2010



Introductions

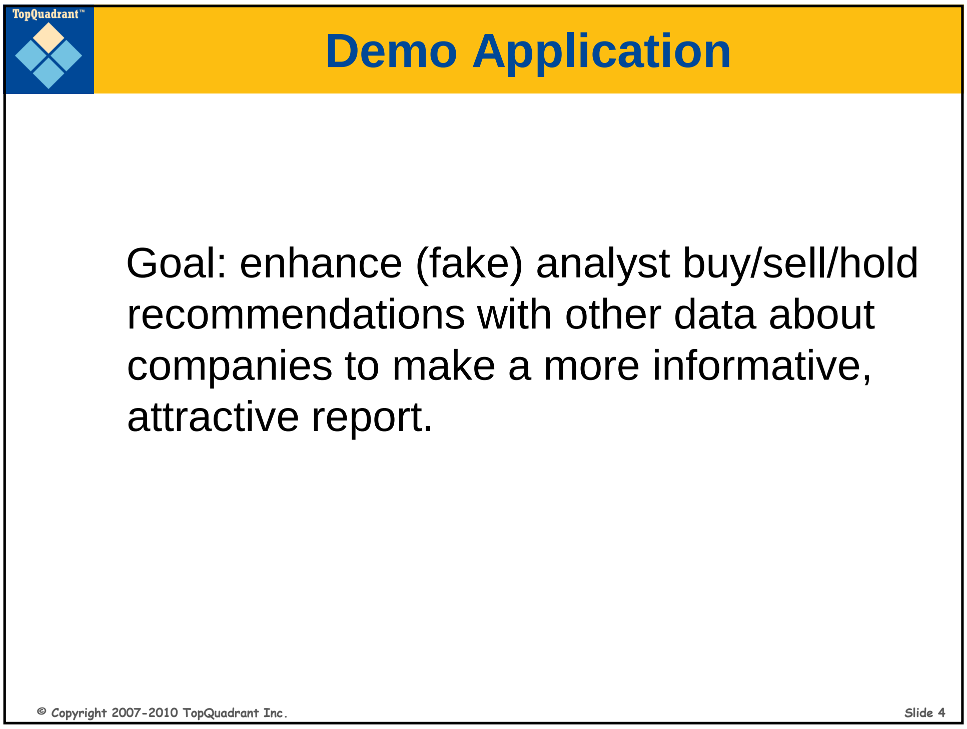
- Presentation and all its URLs: http://www.snee.com/semwebmeetup/march26
- Me: SGML and XML at Moody's, LexisNexis, Innodata Isogen, TopQuadrant
- Weblog: http://www.snee.com/bobdc.blog

Slide 2



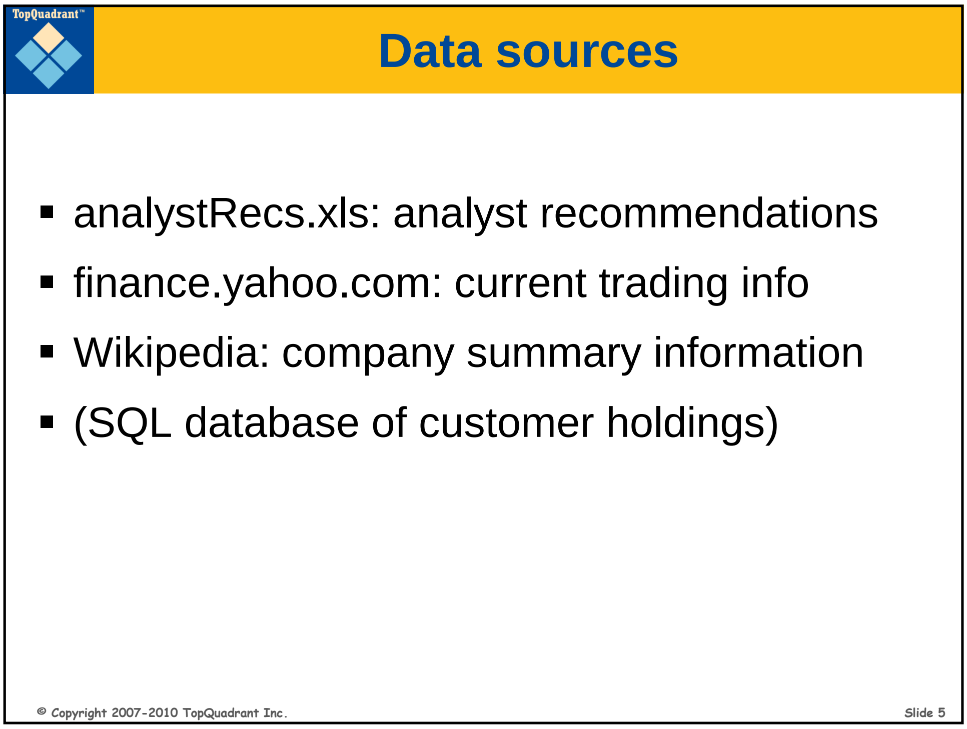
Outline

- Demo app: what
- The Semantic Web, RDF, and Linked Data
- Demo app
  - – overall architecture
  - – how, with open source software
  - – how, withTopQuadrant products
- A little more about TopQuadrant
- Questions



Demo Application

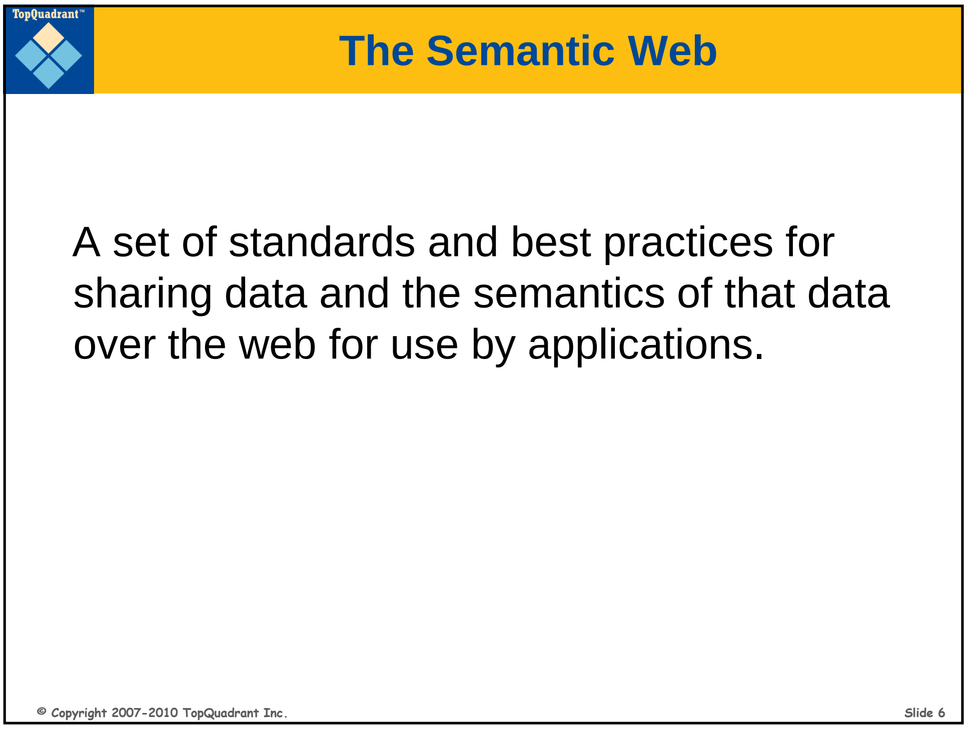
Goal: enhance (fake) analyst buy/sell/hold recommendations with other data about companies to make a more informative, attractive report.



Data sources

- analystRecs.xls: analyst recommendations
- finance.yahoo.com: current trading info
- Wikipedia: company summary information
- (SQL database of customer holdings)

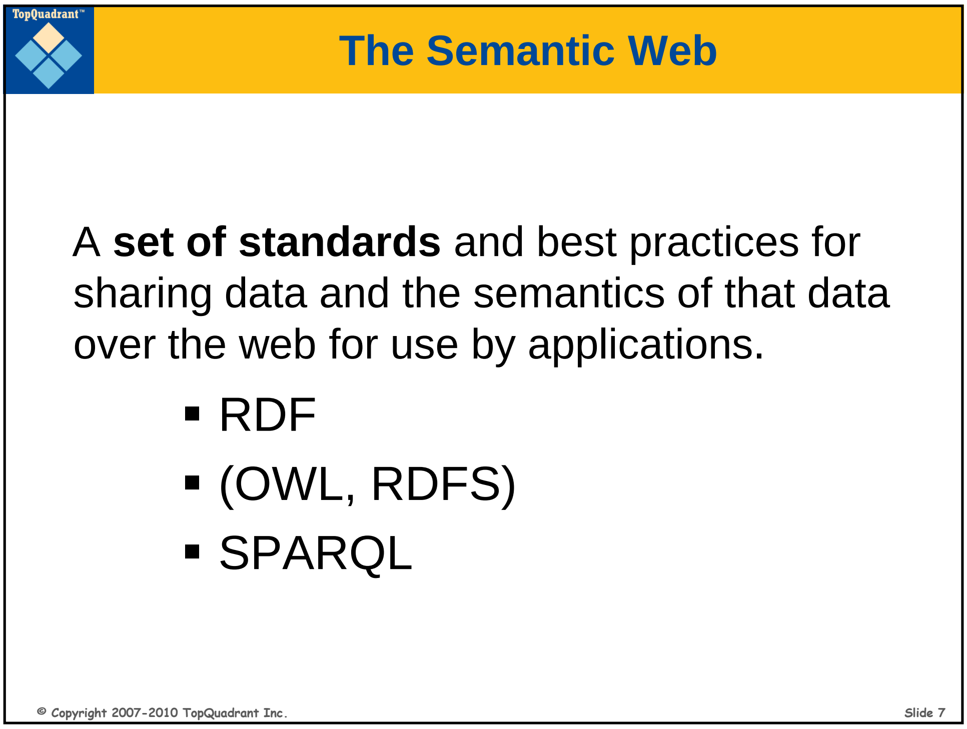
Slide 5



The Semantic Web

A set of standards and best practices for sharing data and the semantics of that data over the web for use by applications.

Slide 6

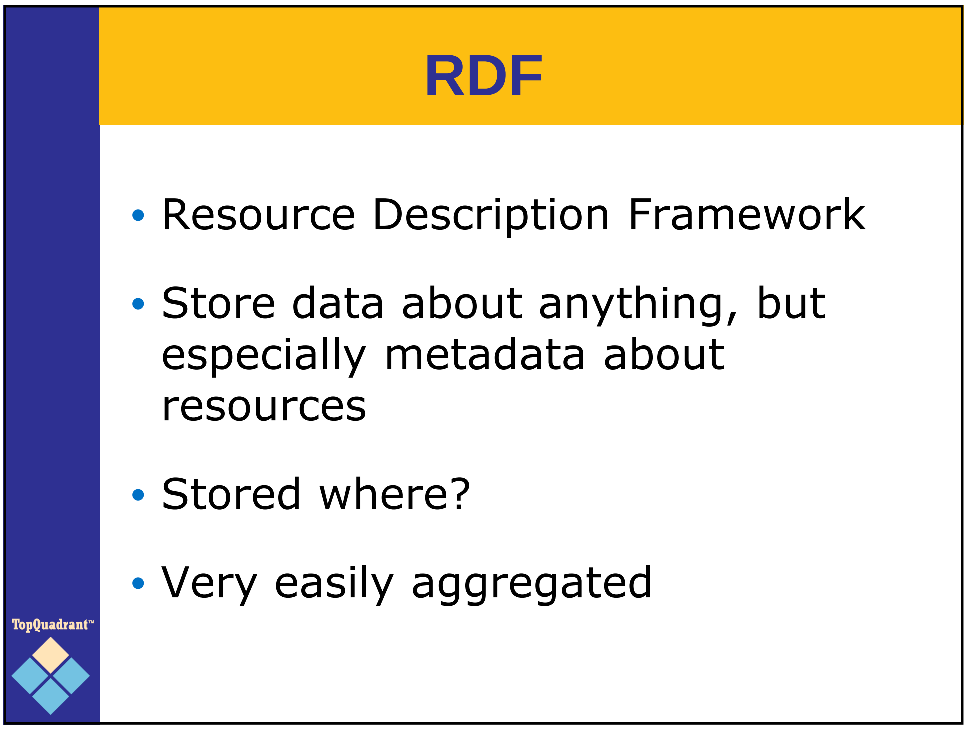


The Semantic Web

A **set of standards** and best practices for sharing data and the semantics of that data over the web for use by applications.

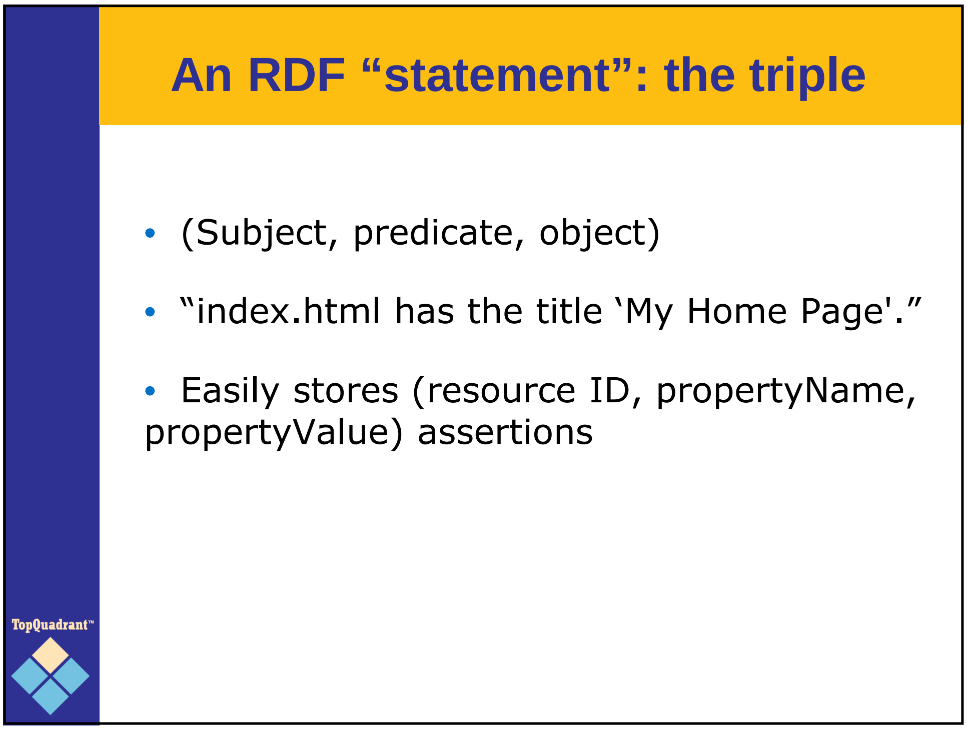
- RDF
- (OWL, RDFS)
- SPARQL

Slide 7



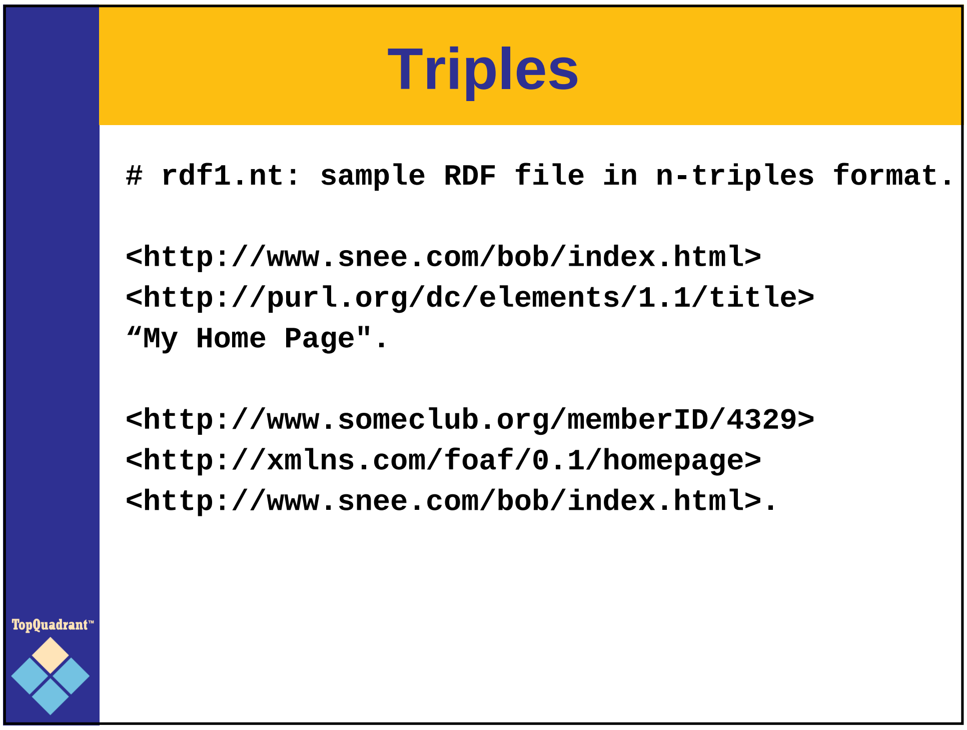
RDF

- Resource Description Framework
- Store data about anything, but especially metadata about resources
- Stored where?
- Very easily aggregated



An RDF “statement”: the triple

- (Subject, predicate, object)
- “index.html has the title ‘My Home Page'.”
- Easily stores (resource ID, propertyName, propertyValue) assertions



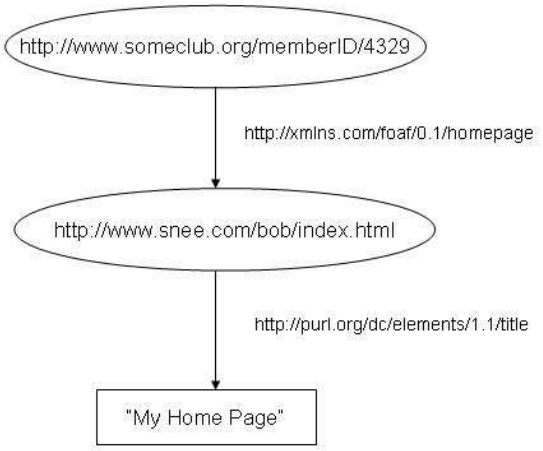
Triples

```
# rdf1.nt: sample RDF file in n-triples format.

<http://www.snee.com/bob/index.html>
<http://purl.org/dc/elements/1.1/title>
“My Home Page".

<http://www.someclub.org/memberID/4329>
<http://xmlns.com/foaf/0.1/homepage>
<http://www.snee.com/bob/index.html>.
```

Linking triples into a “graph”


http://www.someclub.org/memberID/4329
http://xmlns.com/foaf/0.1/homepage
http://www.snee.com/bob/index.html
http://purl.org/dc/elements/1.1/title
"My Home Page"

TopQuadrant™

SPARQL

- SPARQL Protocol and RDF Query Language
- Became W3C standard January 2008

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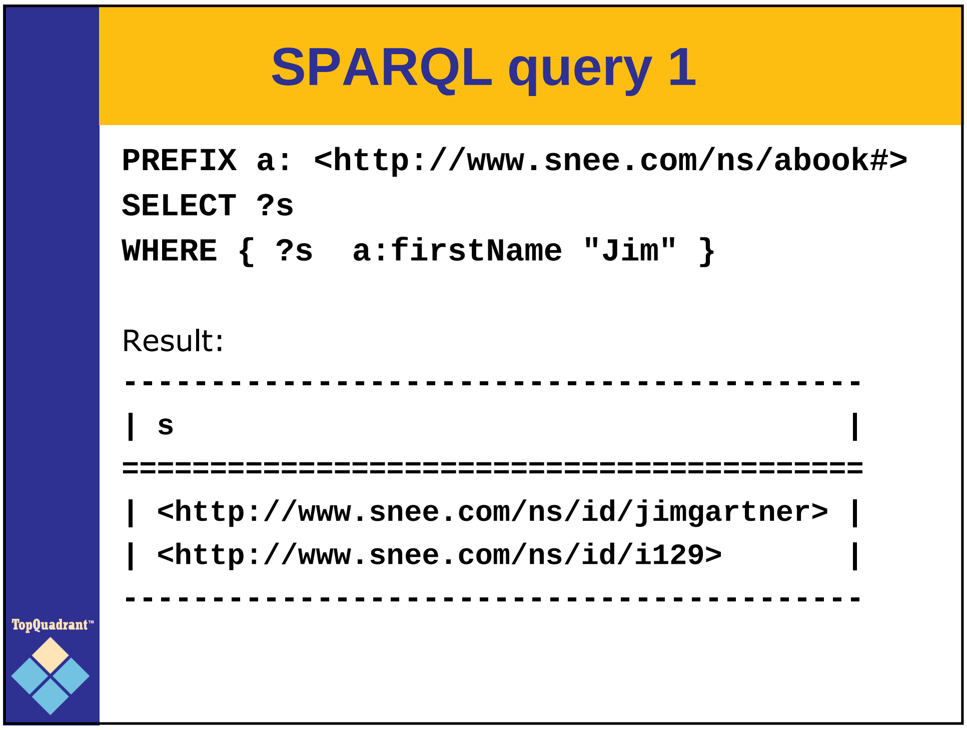
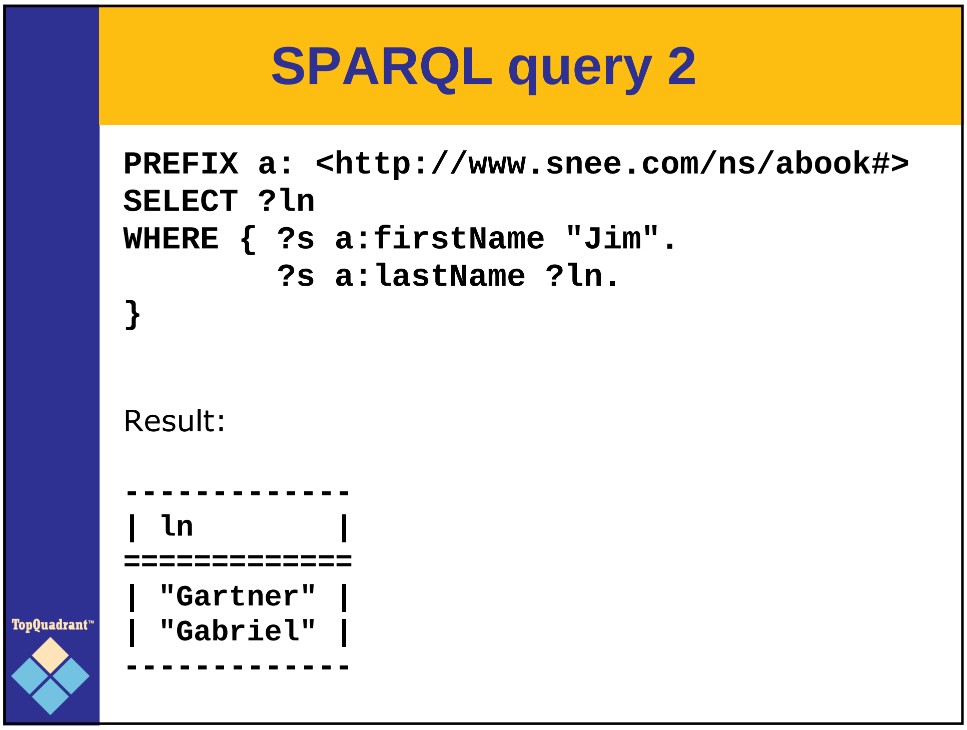


SPARQL query 1

```
PREFIX a: <http://www.snee.com/ns/abook#>
SELECT ?s
WHERE { ?s  a:firstName "Jim" }
```

Result:

```
-----------------------------------------
| s                                     |
=========================================
| <http://www.snee.com/ns/id/jimgartner> |
| <http://www.snee.com/ns/id/i129>      |
-----------------------------------------
```



SPARQL query 2

```
PREFIX a: <http://www.snee.com/ns/abook#>
SELECT ?ln
WHERE { ?s a:firstName "Jim".
        ?s a:lastName ?ln.
}
```

Result:

```
------------
| ln       |
============
| "Gartner" |
| "Gabriel" |
------------
```

SPARQL query 3

```
PREFIX a: <http://www.snee.com/ns/abook#>
SELECT ?fn ?ln
WHERE { ?s a:firstName ?fn;
           a:lastName  ?ln;
           a:instrument "guitar".
 }
```

Result:

```
--------------------
| fn      | ln      |
====================
| "Jason" | "Lyman" |
| "Jaye"  | "Urgo"  |
--------------------
```

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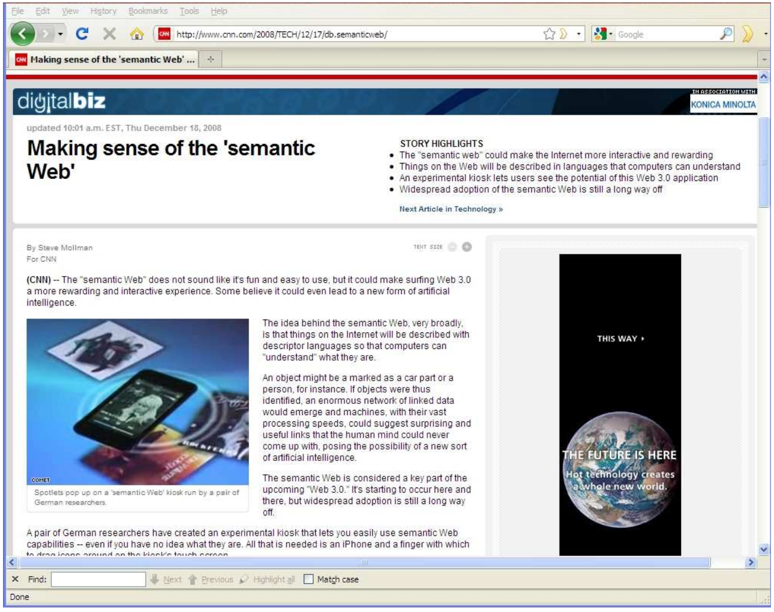
Is SPARQL Difficult?


File Edit View History Bookmarks Tools Help
http://www.cnn.com/2008/TECH/12/17/db.semanticweb/
Google
Making sense of the 'semantic Web' ...
digitalbiz
IN ASSOCIATION WITH
KONICA MINOLTA
TEXT SIZE
THIS WAY ›
THE FUTURE IS HERE
Hot technology creates a whole new world.
COMET
Find:
Next
Previous
Highlight all
□ Match case
Done

updated 10:01 a.m. EST, Thu December 18, 2008

Making sense of the 'semantic Web'

STORY HIGHLIGHTS
- The "semantic web" could make the Internet more interactive and rewarding
- Things on the Web will be described in languages that computers can understand
- An experimental kiosk lets users see the potential of this Web 3.0 application
- Widespread adoption of the semantic Web is still a long way off

Next Article in Technology »

By Steve Mollman
For CNN

(CNN) -- The "semantic Web" does not sound like it's fun and easy to use, but it could make surfing Web 3.0 a more rewarding and interactive experience. Some believe it could even lead to a new form of artificial intelligence.

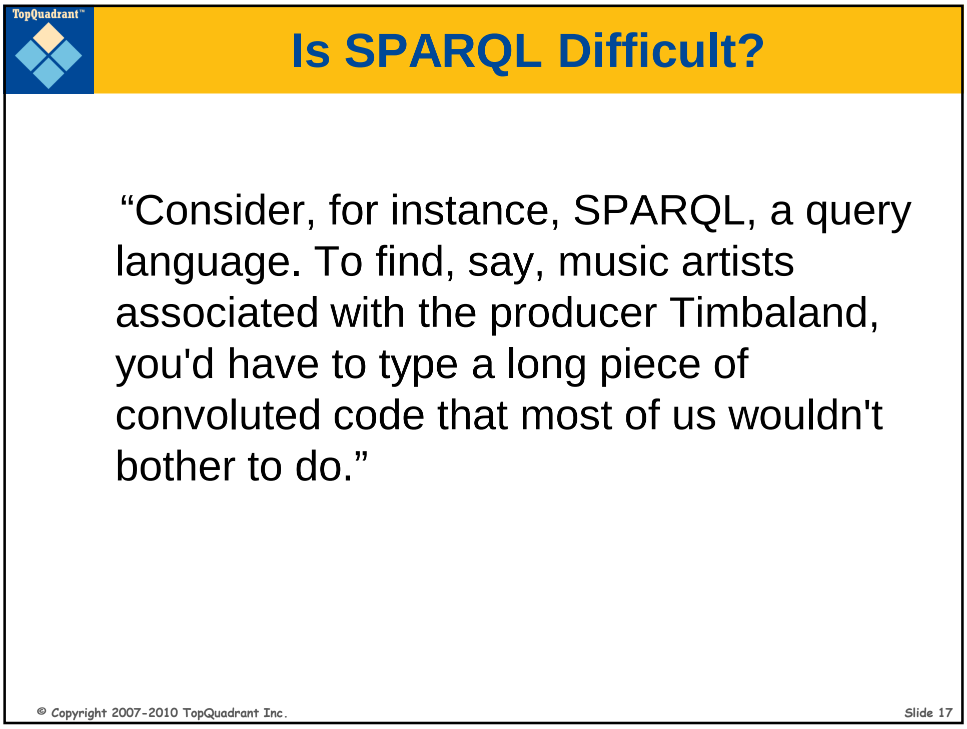
Spotlets pop up on a 'semantic Web' kiosk run by a pair of German researchers.

The idea behind the semantic Web, very broadly, is that things on the Internet will be described with descriptor languages so that computers can "understand" what they are.

An object might be a marked as a car part or a person, for instance. If objects were thus identified, an enormous network of linked data would emerge and machines, with their vast processing speeds, could suggest surprising and useful links that the human mind could never come up with, posing the possibility of a new sort of artificial intelligence.

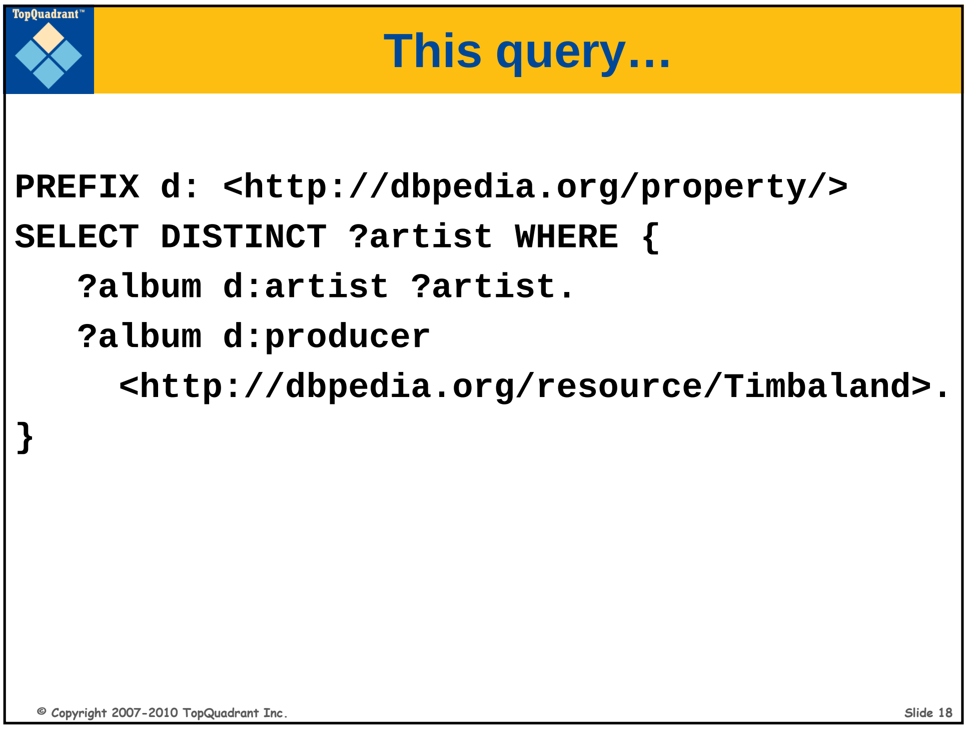
The semantic Web is considered a key part of the upcoming "Web 3.0." It's starting to occur here and there, but widespread adoption is still a long way off.

A pair of German researchers have created an experimental kiosk that lets you easily use semantic Web capabilities -- even if you have no idea what they are. All that is needed is an iPhone and a finger with which



Is SPARQL Difficult?

"Consider, for instance, SPARQL, a query language. To find, say, music artists associated with the producer Timbaland, you'd have to type a long piece of convoluted code that most of us wouldn't bother to do."



This query…

```
PREFIX d: <http://dbpedia.org/property/>
SELECT DISTINCT ?artist WHERE {
   ?album d:artist ?artist.
   ?album d:producer
     <http://dbpedia.org/resource/Timbaland>.
}
```

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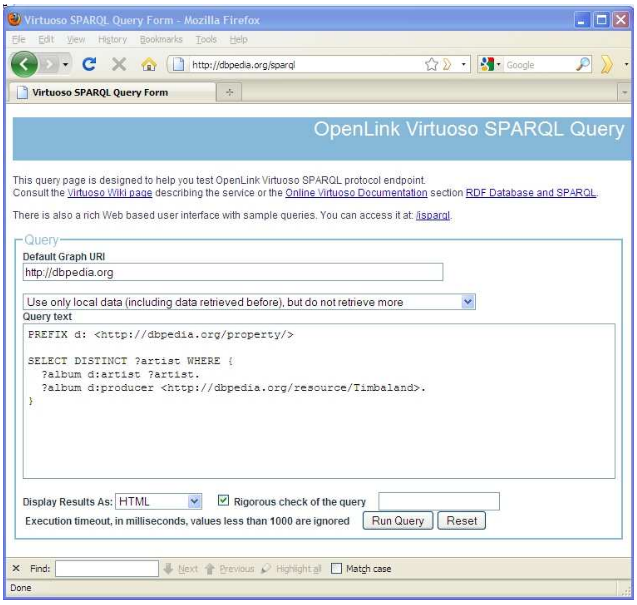
entered here…


Virtuoso SPARQL Query Form - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://dbpedia.org/sparql
Google
Virtuoso SPARQL Query Form

OpenLink Virtuoso SPARQL Query

This query page is designed to help you test OpenLink Virtuoso SPARQL protocol endpoint.
Consult the Virtuoso Wiki page describing the service or the Online Virtuoso Documentation section RDF Database and SPARQL.

There is also a rich Web based user interface with sample queries. You can access it at: /isparql.

Query

Default Graph URI: http://dbpedia.org

Use only local data (including data retrieved before), but do not retrieve more

Query text

```
PREFIX d: <http://dbpedia.org/property/>

SELECT DISTINCT ?artist WHERE {
  ?album d:artist ?artist.
  ?album d:producer <http://dbpedia.org/resource/Timbaland>.
}
```

Display Results As: HTML

☑ Rigorous check of the query

Execution timeout, in milliseconds, values less than 1000 are ignored

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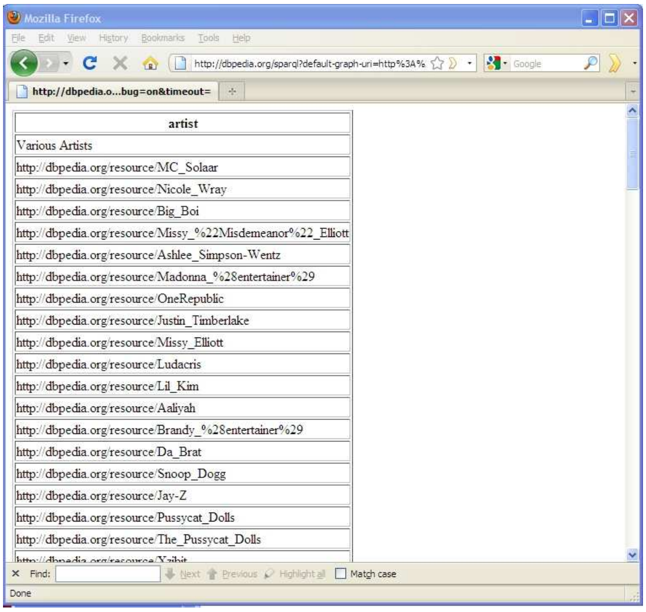
and there they are.


Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://dbpedia.org/sparql?default-graph-uri=http%3A%
Google
http://dbpedia.o...bug=on&timeout=

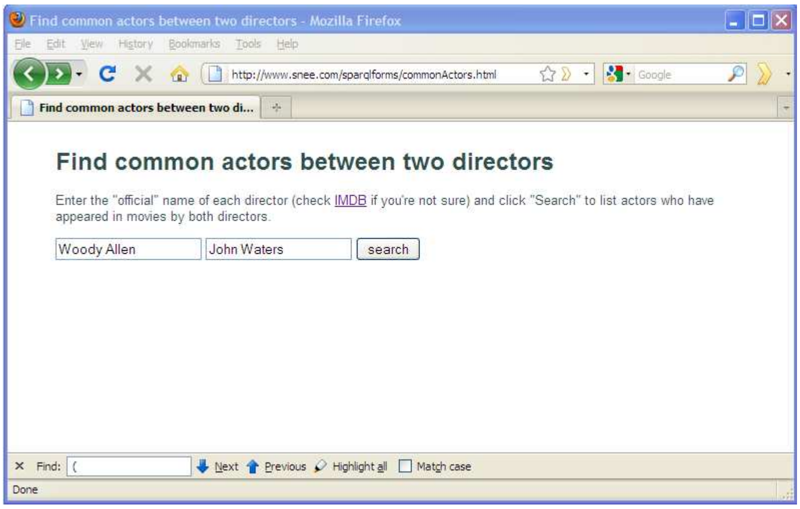
artist
Various Artists
http://dbpedia.org/resource/MC_Solaar
http://dbpedia.org/resource/Nicole_Wray
http://dbpedia.org/resource/Big_Boi
http://dbpedia.org/resource/Missy_%22Misdemeanor%22_Elliott
http://dbpedia.org/resource/Ashlee_Simpson-Wentz
http://dbpedia.org/resource/Madonna_%28entertainer%29
http://dbpedia.org/resource/OneRepublic
http://dbpedia.org/resource/Justin_Timberlake
http://dbpedia.org/resource/Missy_Elliott
http://dbpedia.org/resource/Ludacris
http://dbpedia.org/resource/Lil_Kim
http://dbpedia.org/resource/Aaliyah
http://dbpedia.org/resource/Brandy_%28entertainer%29
http://dbpedia.org/resource/Da_Brat
http://dbpedia.org/resource/Snoop_Dogg
http://dbpedia.org/resource/Jay-Z
http://dbpedia.org/resource/Pussycat_Dolls
http://dbpedia.org/resource/The_Pussycat_Dolls
http://dbpedia.org/resource/Xzibit

On the other hand…

Some JavaScript from a View Source of that same CNN page:

```
if(cnnWinExtraRegExp.test(cnnWinExtra)){var cnnOmniExtra =
cnnWinExtraRegExp.split(cnnWinExtra);cnnWinLoc = cnnWinLoc +
cnnOmniExtra[0];} else {cnnWinLoc = cnnWinLoc +
cnnWinExtra;}} if (typeof(cnnPageName) != "undefined")
{s.pageName = cnnPageName;s.eVar1 = cnnPageName;} else
{s.pageName = cnnWinLoc;s.eVar1 = cnnWinLoc;} if
(typeof(cnnSectionName) != "undefined")
{s.channel=cnnSectionName;s.eVar2=cnnSectionName;} else
{s.channel="Nonlabeled";s.eVar2="Nonlabeled";} if
(typeof(cnnSubSectionName) != "undefined")
{s.server=cnnSubSectionName;s.eVar3=cnnSubSectionName;} else
{s.server="";s.eVar3="";} if (typeof(cnnSectionFront) !=
"undefined") {s.prop1=cnnSectionFront;} if
(typeof(cnnContentType) != "undefined")
{s.prop4=cnnContentType;s.prop6=s.pageName;}
```

Form-based SPARQL app

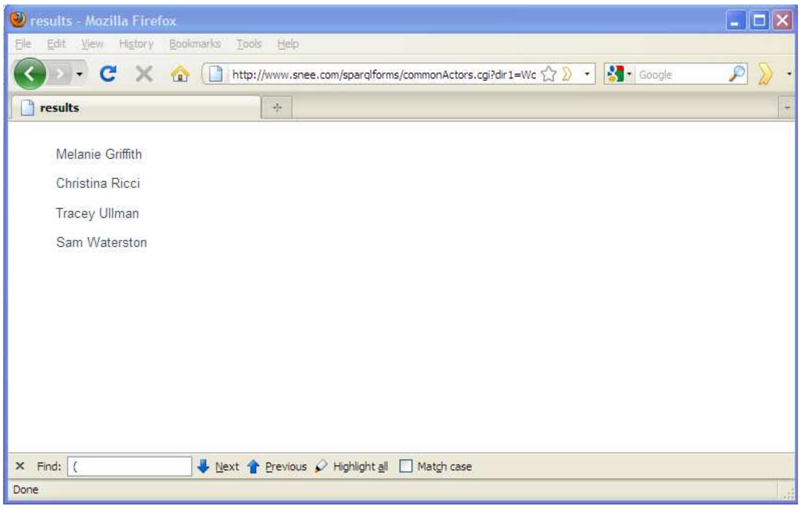

Find common actors between two directors - Mozilla Firefox
File
Edit
View
History
Bookmarks
Tools
Help
http://www.snee.com/sparqlforms/commonActors.html
Google
Find common actors between two di...
Find:
Next
Previous
Highlight all
Match case
Done

Find common actors between two directors

Enter the "official" name of each director (check IMDB if you're not sure) and click "Search" to list actors who have appeared in movies by both directors.

Woody Allen | John Waters | search

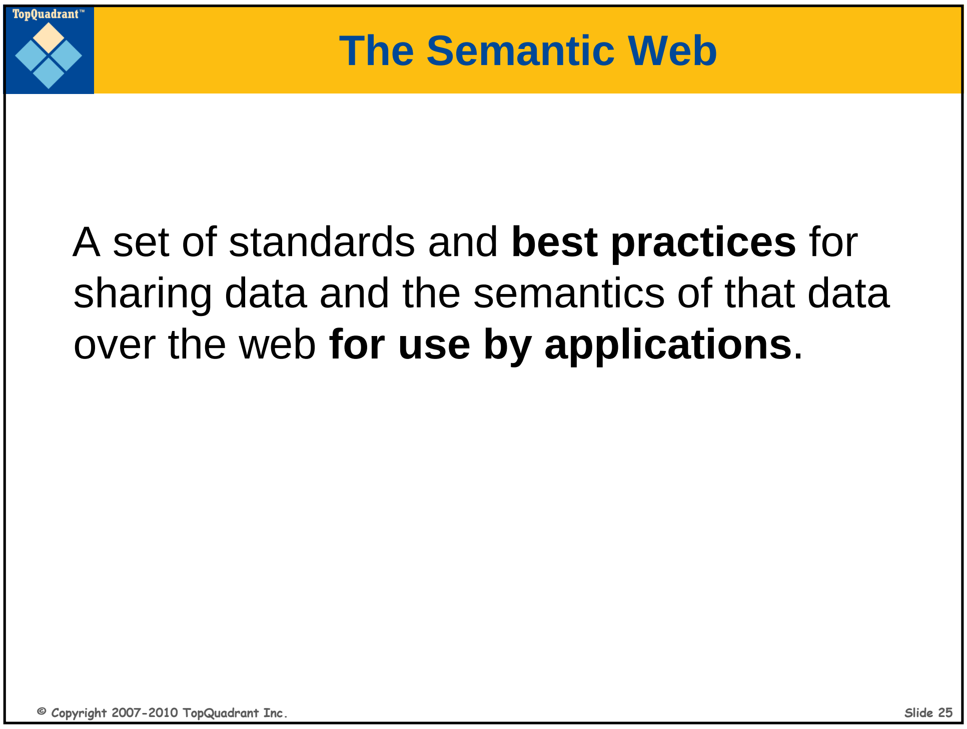
Form-based SPARQL app: results


results - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://www.snee.com/sparqlforms/commonActors.cgi?dir1=Wc
Google
results
Find: (
Next
Previous
Highlight all
Match case
Done

Melanie Griffith
Christina Ricci
Tracey Ullman
Sam Waterston

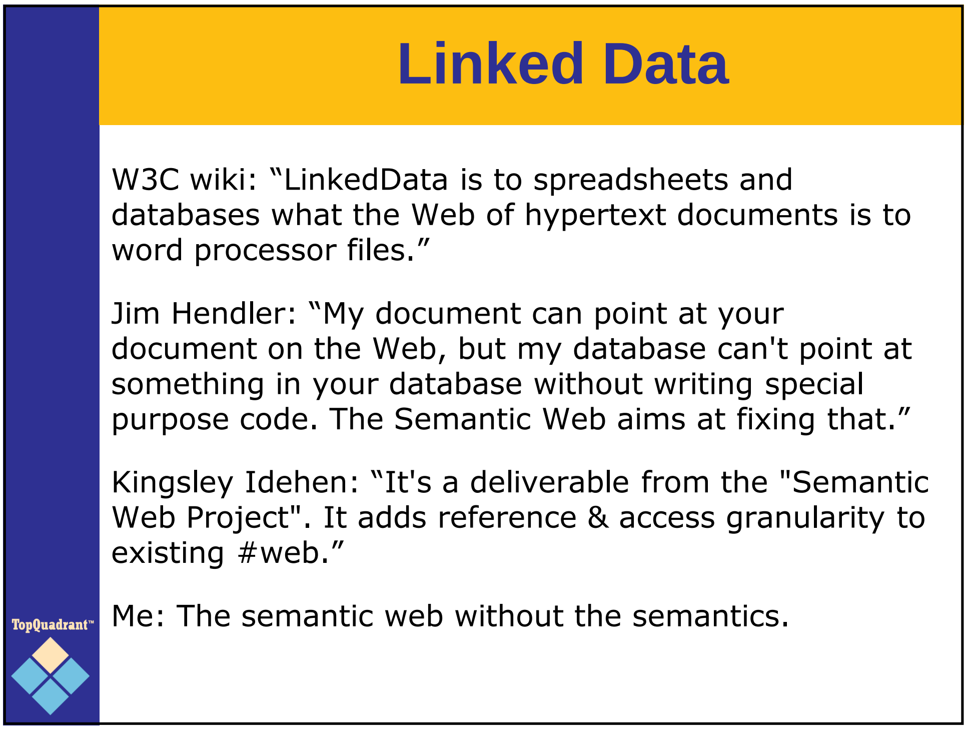
SPARQL’s role in today’s message

- SPARQL lets you query a set of triples
- Data from different public and private sources in different formats can be treated as triples
- Different sets of triples can be easily combined
- So SPARQL lets you mix and match and query data from different sources



The Semantic Web

A set of standards and **best practices** for sharing data and the semantics of that data over the web **for use by applications**.



Linked Data

W3C wiki: “LinkedData is to spreadsheets and databases what the Web of hypertext documents is to word processor files.”

Jim Hendler: “My document can point at your document on the Web, but my database can't point at something in your database without writing special purpose code. The Semantic Web aims at fixing that.”

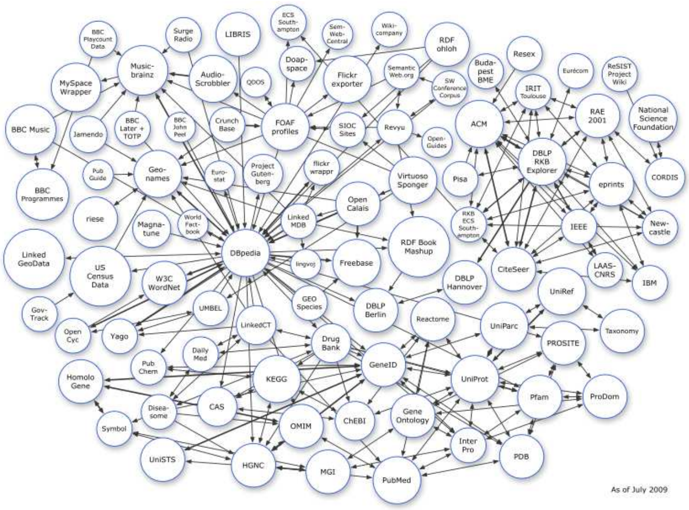
Kingsley Idehen: “It's a deliverable from the "Semantic Web Project". It adds reference & access granularity to existing #web.”

Me: The semantic web without the semantics.

Tim Berners-Lee's Four Linked Data Principles

1. Use URIs as names for things
2. Use HTTP URIs so that people can look up those names.
3. When someone looks up a URI, provide useful information, using the standards (RDF, SPARQL)
4. Include links to other URIs, so that they can discover more things.

Linked Data Cloud (August 2009)

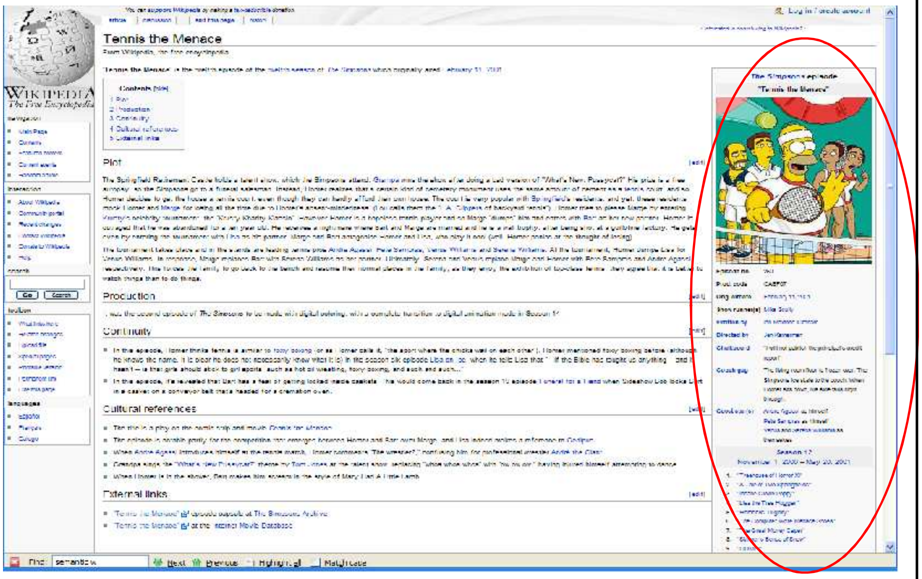


As of July 2009

Accessing data as RDF

- How do we get RDF out of these data sources so that we can use SPARQL to manipulate that data?
  - Wikipedia
  - analystRecs.xls
  - finance.yahoo.com
  - (SQL database: D2RQ)

Wikipedia infoboxes



Tennis the Menace

From Wikipedia, the free encyclopedia

Contents [hide]
1 Plot
2 Production
3 Continuity
4 Cultural references
5 External links

Plot

Production

Continuity

Cultural references

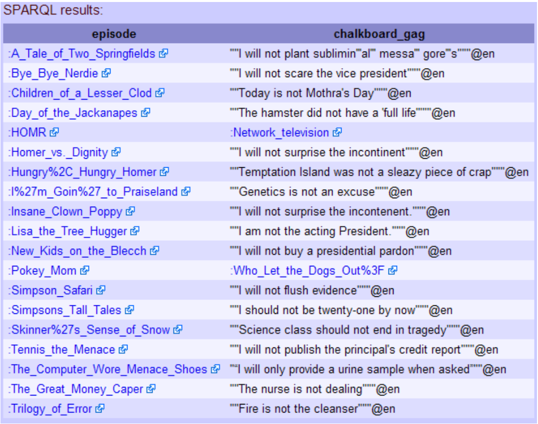
External links

The Simpsons episode
"Tennis the Menace"

Season 12

Everything Bart wrote on blackboard in season 12

```
SELECT ?episode,?chalkboard_gag
WHERE { ?episode skos:subject
<http://dbpedia.org/resource/Category:The_Simpsons_episodes%2C_season_12>.
?episode dbpedia2:blackboard ?chalkboard_gag }
```



SPARQL results:

episode	chalkboard_gag
:A_Tale_of_Two_Springfields	""I will not plant sublimin"al" messa" gore"s"""@en
:Bye_Bye_Nerdie	""I will not scare the vice president"""@en
:Children_of_a_Lesser_Clod	""Today is not Mothra's Day"""@en
:Day_of_the_Jackanapes	""The hamster did not have a 'full life"""@en
:HOMR	:Network_television
:Homer_vs._Dignity	""I will not surprise the incontinent"""@en
:Hungry%2C_Hungry_Homer	""Temptation Island was not a sleazy piece of crap"""@en
:I%27m_Goin%27_to_Praiseland	""Genetics is not an excuse"""@en
:Insane_Clown_Poppy	""I will not surprise the incontenent."""@en
:Lisa_the_Tree_Hugger	""I am not the acting President."""@en
:New_Kids_on_the_Blecch	""I will not buy a presidential pardon"""@en
:Pokey_Mom	:Who_Let_the_Dogs_Out%3F
:Simpson_Safari	""I will not flush evidence"""@en
:Simpsons_Tall_Tales	""I should not be twenty-one by now"""@en
:Skinner%27s_Sense_of_Snow	""Science class should not end in tragedy"""@en
:Tennis_the_Menace	""I will not publish the principal's credit report"""@en
:The_Computer_Wore_Menace_Shoes	""I will only provide a urine sample when asked"""@en
:The_Great_Money_Caper	""The nurse is not dealing"""@en
:Trilogy_of_Error	""Fire is not the cleanser"""@en

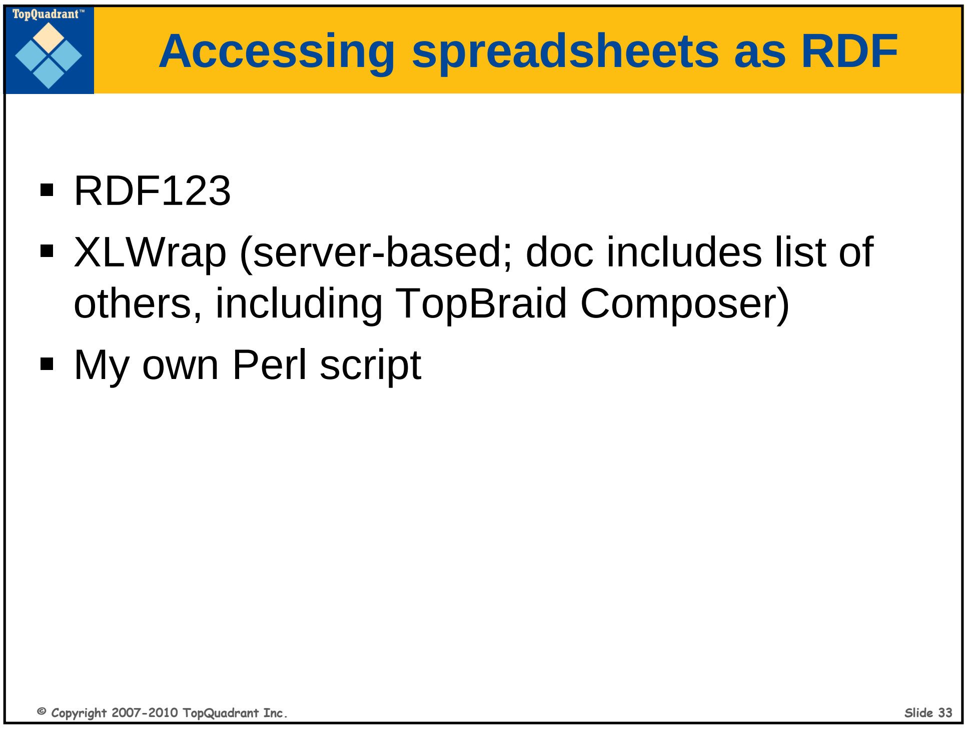
Retrieving DBpedia data

- A query like this

```
CONSTRUCT { <http://dbpedia.org/resource/IBM> ?p ?o }
WHERE { <http://dbpedia.org/resource/IBM> ?p ?o }
```

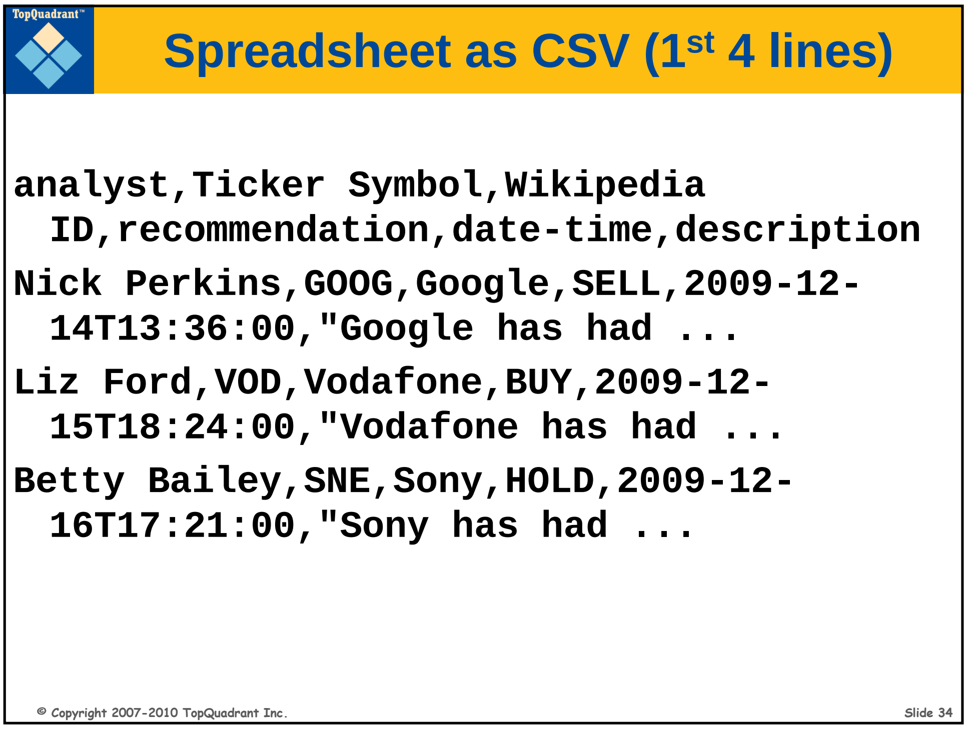
- Can be stored in a URL like this:

```
http://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=CONSTRUCT%20%7B%20%3Chttp%3A%2F%2Fdbpedia.org%2Fresource%2FGoogle%3E%20%3Fp%20%3Fo%20%7D%20WHERE%20%7B%20%3Chttp%3A%2F%2Fdbpedia.org%2Fresource%2FGoogle%3E%20%3Fp%20%3Fo%20%7D
```



Accessing spreadsheets as RDF

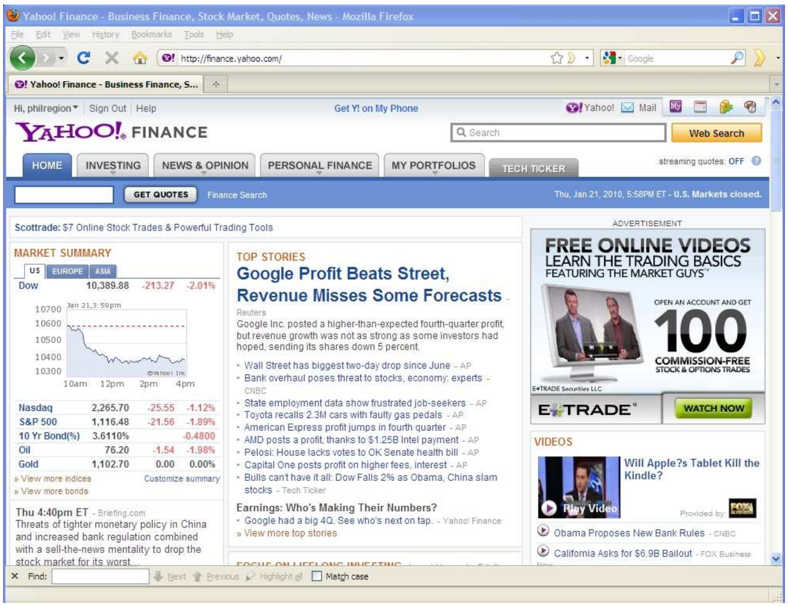
- RDF123
- XLWrap (server-based; doc includes list of others, including TopBraid Composer)
- My own Perl script



Spreadsheet as CSV (1st 4 lines)

```
analyst,Ticker Symbol,Wikipedia
  ID,recommendation,date-time,description
Nick Perkins,GOOG,Google,SELL,2009-12-
  14T13:36:00,"Google has had ...
Liz Ford,VOD,Vodafone,BUY,2009-12-
  15T18:24:00,"Vodafone has had ...
Betty Bailey,SNE,Sony,HOLD,2009-12-
  16T17:21:00,"Sony has had ...
```

finance.yahoo.com



Thu, Jan 21, 2010, 5:58PM ET - U.S. Markets closed.

Scottrade: $7 Online Stock Trades & Powerful Trading Tools

MARKET SUMMARY

US | EUROPE | ASIA

Dow	10,389.88	-213.27	-2.01%

Nasdaq	2,265.70	-25.55	-1.12%
S&P 500	1,116.48	-21.56	-1.89%
10 Yr Bond(%)	3.6110%		-0.4800
Oil	76.20	-1.54	-1.98%
Gold	1,102.70	0.00	0.00%

» View more indices Customize summary
» View more bonds

Thu 4:40pm ET - Briefing.com
Threats of tighter monetary policy in China and increased bank regulation combined with a sell-the-news mentality to drop the stock market for its worst...

TOP STORIES

Google Profit Beats Street, Revenue Misses Some Forecasts - Reuters

Google Inc. posted a higher-than-expected fourth-quarter profit, but revenue growth was not as strong as some investors had hoped, sending its shares down 5 percent.

- Wall Street has biggest two-day drop since June - AP
- Bank overhaul poses threat to stocks, economy: experts - CNBC
- State employment data show frustrated job-seekers - AP
- Toyota recalls 2.3M cars with faulty gas pedals - AP
- American Express profit jumps in fourth quarter - AP
- AMD posts a profit, thanks to $1.25B Intel payment - AP
- Pelosi: House lacks votes to OK Senate health bill - AP
- Capital One posts profit on higher fees, interest - AP
- Bulls can't have it all: Dow Falls 2% as Obama, China slam stocks - Tech Ticker

Earnings: Who's Making Their Numbers?

- Google had a big 4Q. See who's next on tap. - Yahoo! Finance

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Play Video Provided by: FOX

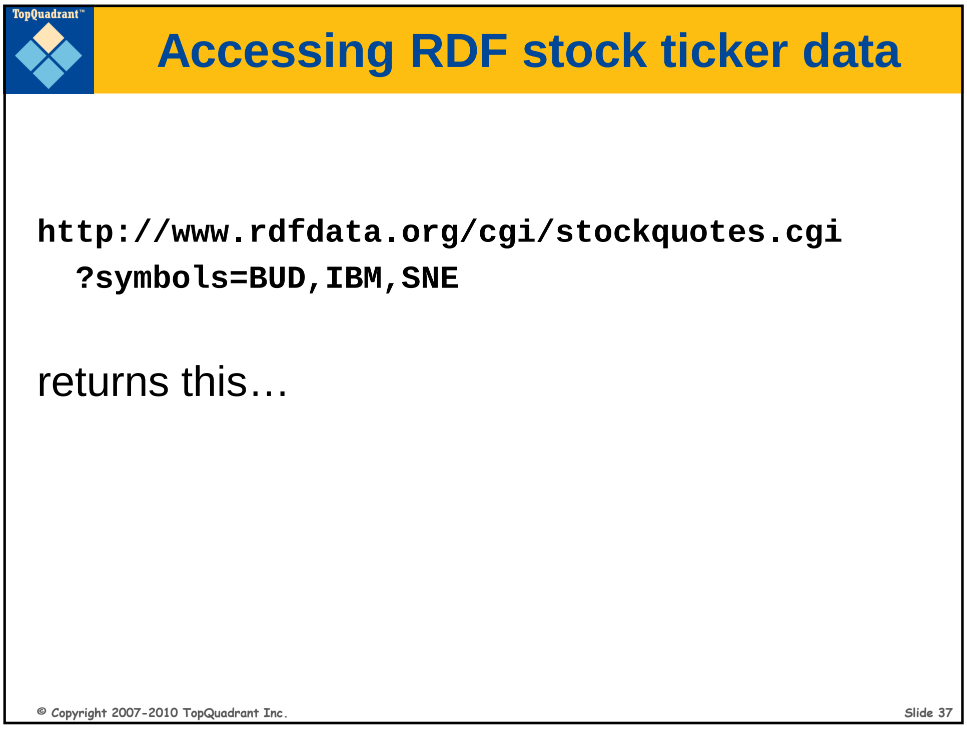
- Obama Proposes New Bank Rules - CNBC
- California Asks for $6.9B Bailout - FOX Business

Accessing CSV stock ticker data

```
http://download.finance.yahoo.com/d/quotes.csv
  ?f=sl1d1t1ohgv&e=.csv&s=BUD,IBM,SNE
```

returns this:

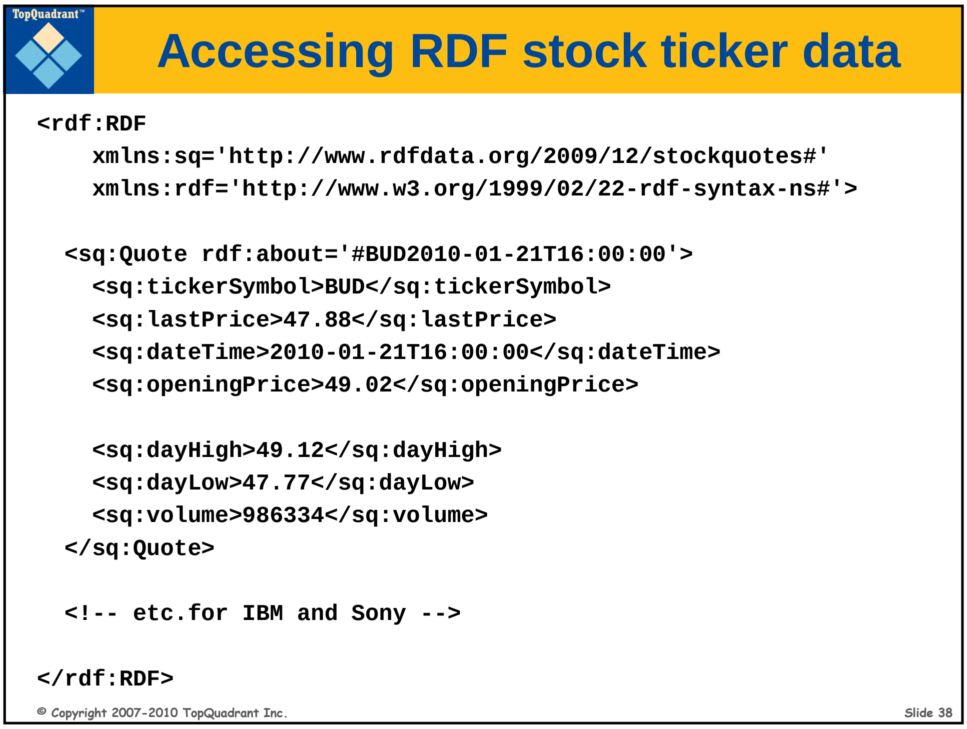
```
"BUD",47.88,"1/21/2010","4:00pm",49.02,
  49.12,47.77,986334

"IBM",129.00,"1/21/2010","4:00pm",130.4
  7,130.69,128.06,9608596

"SNE",34.36,"1/21/2010","4:02pm",34.75,
  34.95,34.06,1575733
```



Accessing RDF stock ticker data

```
http://www.rdfdata.org/cgi/stockquotes.cgi
  ?symbols=BUD,IBM,SNE
```

returns this…



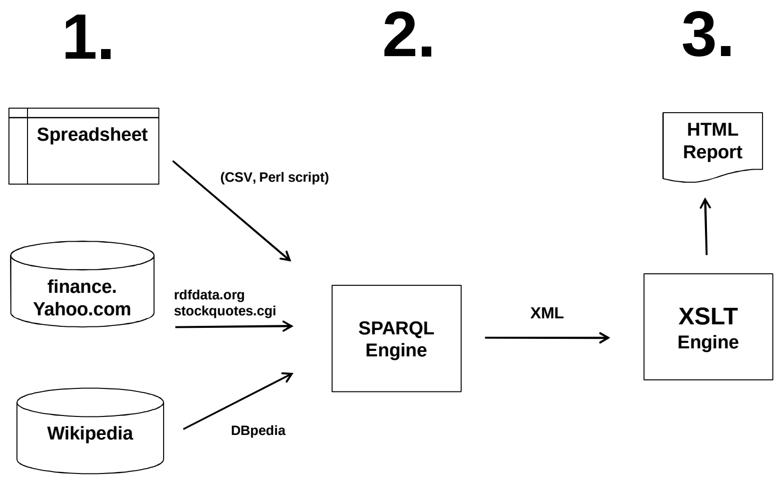
Accessing RDF stock ticker data

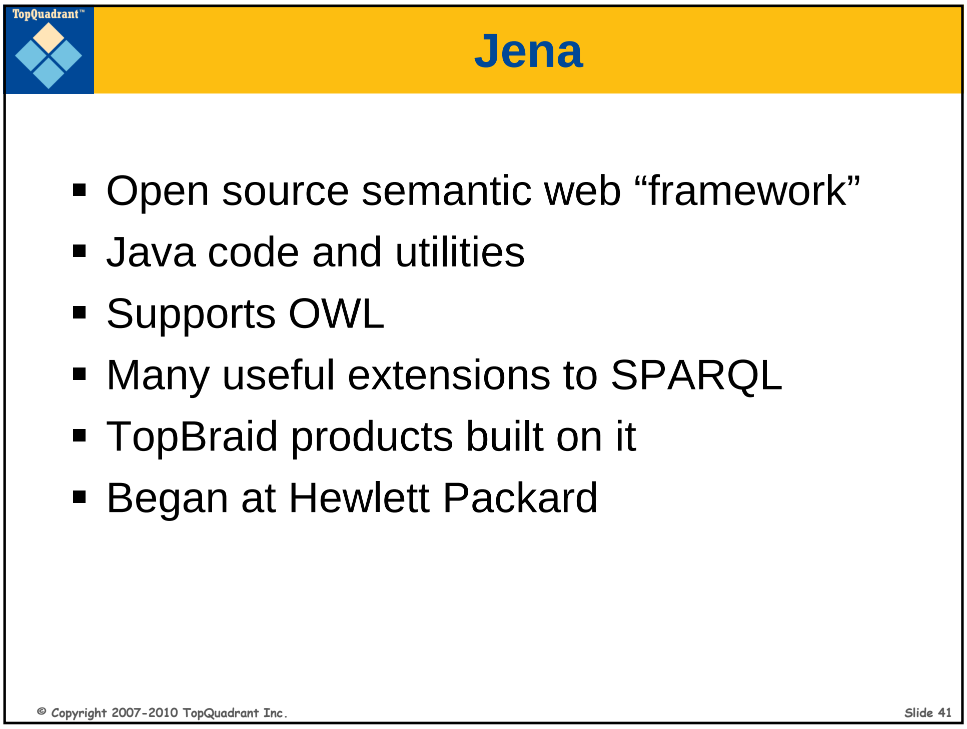
```
<rdf:RDF
    xmlns:sq='http://www.rdfdata.org/2009/12/stockquotes#'
    xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'>

  <sq:Quote rdf:about='#BUD2010-01-21T16:00:00'>
    <sq:tickerSymbol>BUD</sq:tickerSymbol>
    <sq:lastPrice>47.88</sq:lastPrice>
    <sq:dateTime>2010-01-21T16:00:00</sq:dateTime>
    <sq:openingPrice>49.02</sq:openingPrice>

    <sq:dayHigh>49.12</sq:dayHigh>
    <sq:dayLow>47.77</sq:dayLow>
    <sq:volume>986334</sq:volume>
  </sq:Quote>

  <!-- etc.for IBM and Sony -->

</rdf:RDF>
```

Three basic steps

- Combine RDF of analyst recommendations + ticker info + DBpedia company info (+ customer holdings)
- Use SPARQL to mix and match and connect and sort, output XML of result
- Use XSLT to create HTML of report(s)

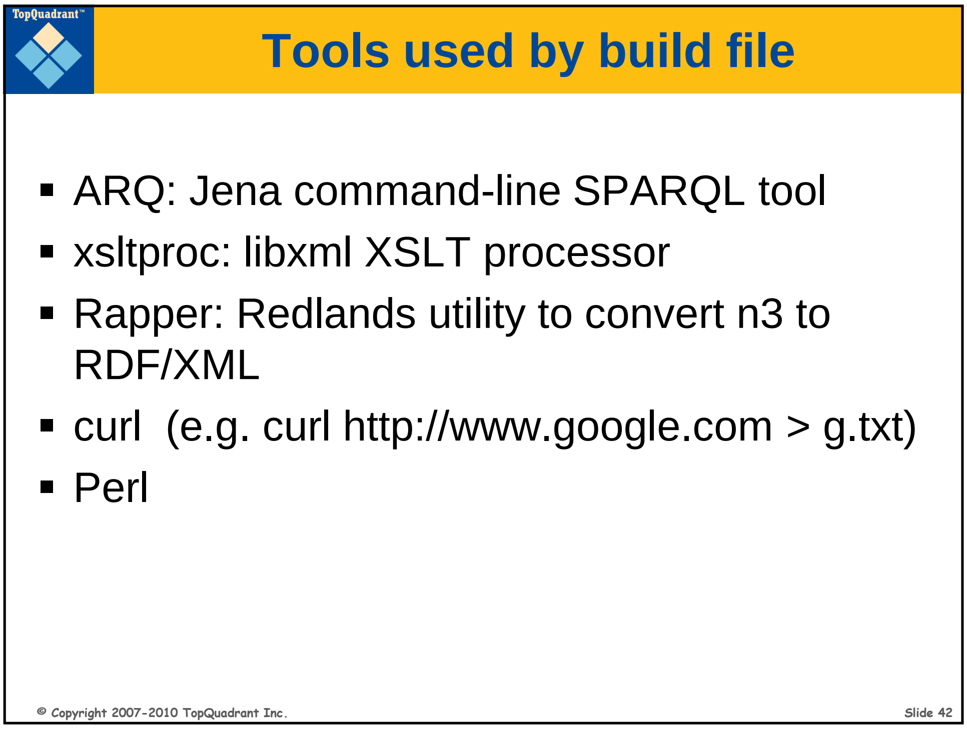
Three basic steps





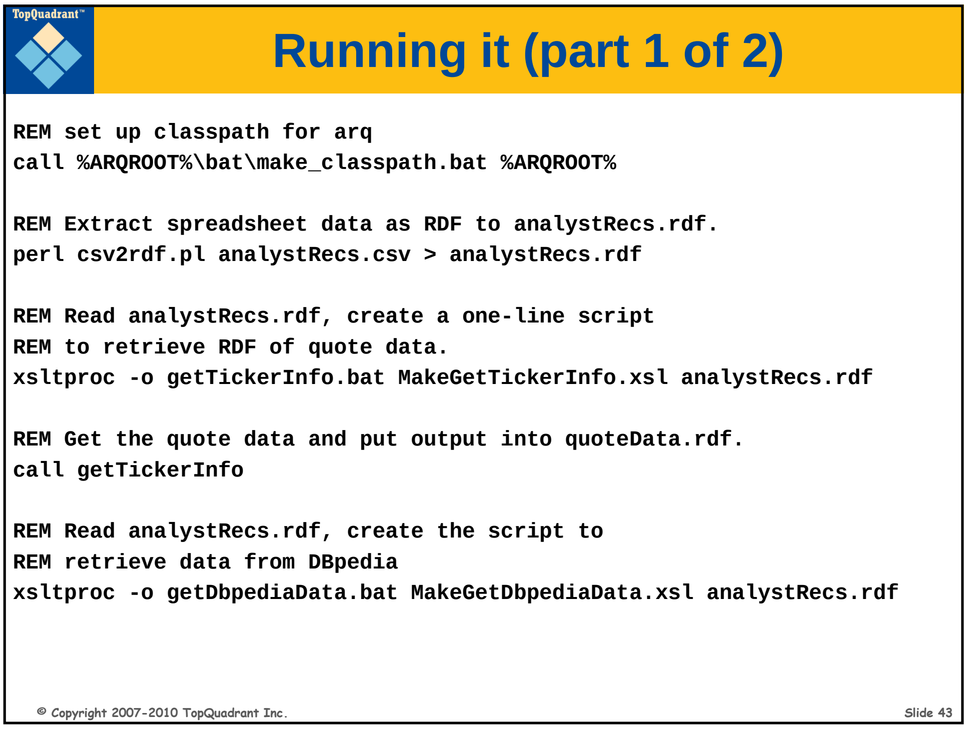
Jena

- Open source semantic web “framework”
- Java code and utilities
- Supports OWL
- Many useful extensions to SPARQL
- TopBraid products built on it
- Began at Hewlett Packard



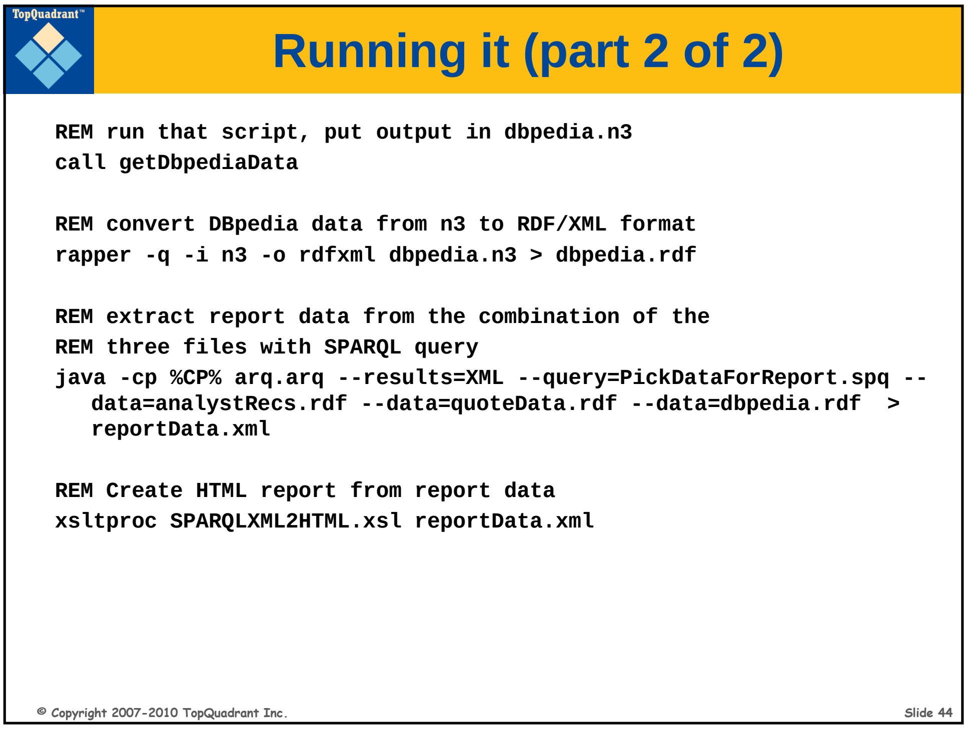
Tools used by build file

- ARQ: Jena command-line SPARQL tool
- xsltproc: libxml XSLT processor
- Rapper: Redlands utility to convert n3 to RDF/XML
- curl (e.g. curl http://www.google.com > g.txt)
- Perl



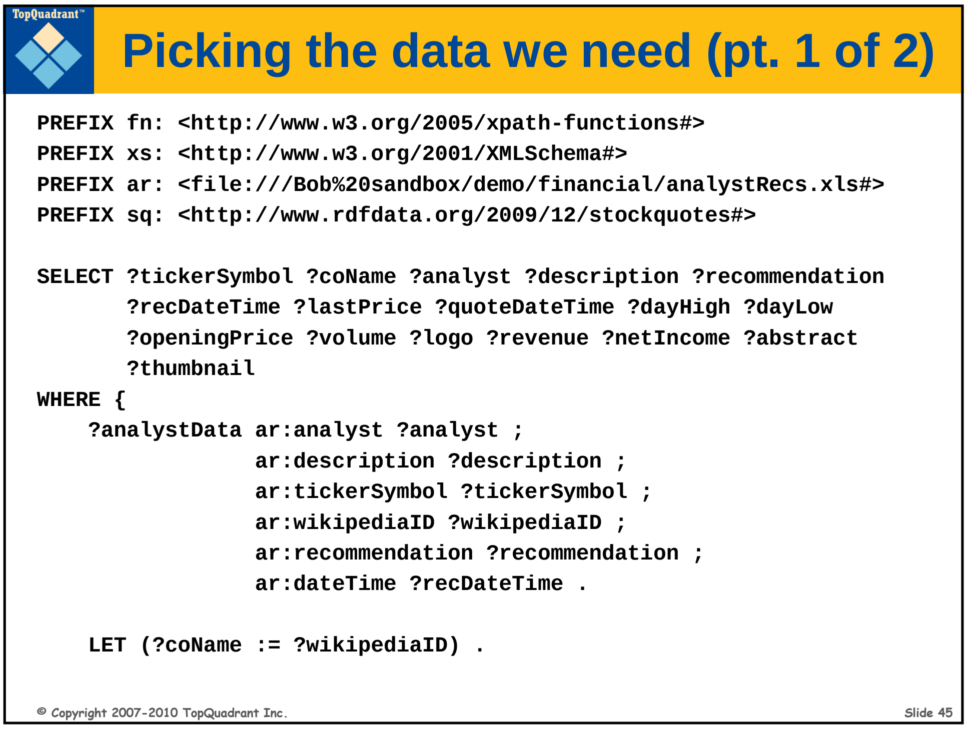
Running it (part 1 of 2)

```
REM set up classpath for arq
call %ARQROOT%\bat\make_classpath.bat %ARQROOT%

REM Extract spreadsheet data as RDF to analystRecs.rdf.
perl csv2rdf.pl analystRecs.csv > analystRecs.rdf

REM Read analystRecs.rdf, create a one-line script
REM to retrieve RDF of quote data.
xsltproc -o getTickerInfo.bat MakeGetTickerInfo.xsl analystRecs.rdf

REM Get the quote data and put output into quoteData.rdf.
call getTickerInfo

REM Read analystRecs.rdf, create the script to
REM retrieve data from DBpedia
xsltproc -o getDbpediaData.bat MakeGetDbpediaData.xsl analystRecs.rdf
```



Running it (part 2 of 2)

```
REM run that script, put output in dbpedia.n3
call getDbpediaData

REM convert DBpedia data from n3 to RDF/XML format
rapper -q -i n3 -o rdfxml dbpedia.n3 > dbpedia.rdf

REM extract report data from the combination of the
REM three files with SPARQL query
java -cp %CP% arq.arq --results=XML --query=PickDataForReport.spq --
   data=analystRecs.rdf --data=quoteData.rdf --data=dbpedia.rdf  >
   reportData.xml

REM Create HTML report from report data
xsltproc SPARQLXML2HTML.xsl reportData.xml
```



Picking the data we need (pt. 1 of 2)

```
PREFIX fn: <http://www.w3.org/2005/xpath-functions#>
PREFIX xs: <http://www.w3.org/2001/XMLSchema#>
PREFIX ar: <file:///Bob%20sandbox/demo/financial/analystRecs.xls#>
PREFIX sq: <http://www.rdfdata.org/2009/12/stockquotes#>

SELECT ?tickerSymbol ?coName ?analyst ?description ?recommendation
       ?recDateTime ?lastPrice ?quoteDateTime ?dayHigh ?dayLow
       ?openingPrice ?volume ?logo ?revenue ?netIncome ?abstract
       ?thumbnail
WHERE {
    ?analystData ar:analyst ?analyst ;
                 ar:description ?description ;
                 ar:tickerSymbol ?tickerSymbol ;
                 ar:wikipediaID ?wikipediaID ;
                 ar:recommendation ?recommendation ;
                 ar:dateTime ?recDateTime .

    LET (?coName := ?wikipediaID) .
```

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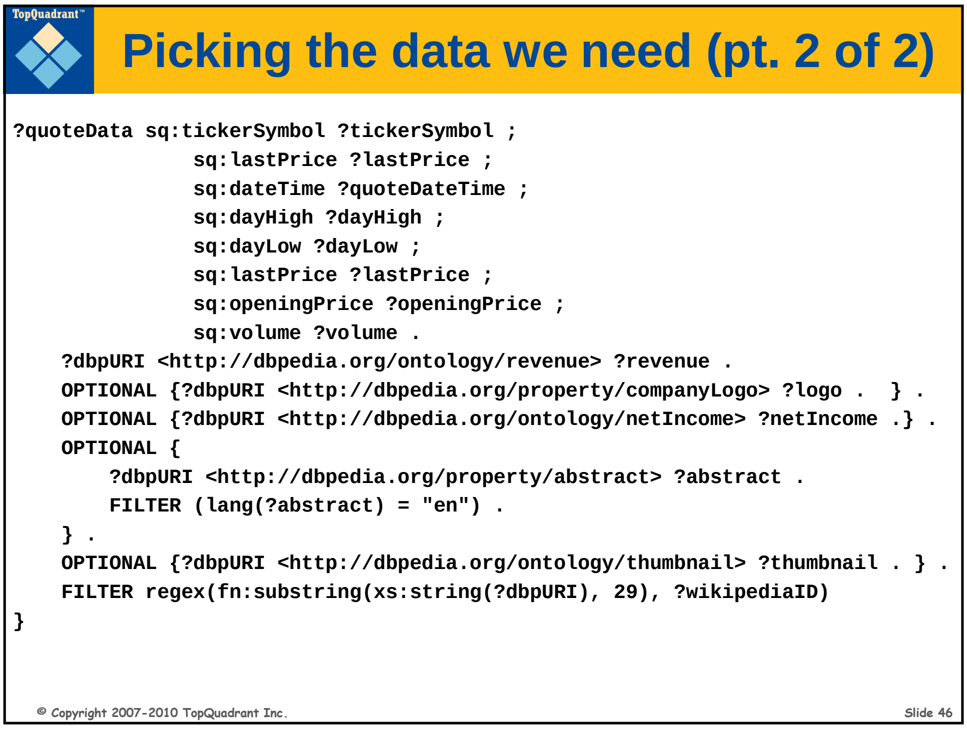

Picking the data we need (pt. 2 of 2)

```
?quoteData sq:tickerSymbol ?tickerSymbol ;
               sq:lastPrice ?lastPrice ;
               sq:dateTime ?quoteDateTime ;
               sq:dayHigh ?dayHigh ;
               sq:dayLow ?dayLow ;
               sq:lastPrice ?lastPrice ;
               sq:openingPrice ?openingPrice ;
               sq:volume ?volume .
    ?dbpURI <http://dbpedia.org/ontology/revenue> ?revenue .
    OPTIONAL {?dbpURI <http://dbpedia.org/property/companyLogo> ?logo .  } .
    OPTIONAL {?dbpURI <http://dbpedia.org/ontology/netIncome> ?netIncome .} .
    OPTIONAL {
        ?dbpURI <http://dbpedia.org/property/abstract> ?abstract .
        FILTER (lang(?abstract) = "en") .
    } .
    OPTIONAL {?dbpURI <http://dbpedia.org/ontology/thumbnail> ?thumbnail . } .
    FILTER regex(fn:substring(xs:string(?dbpURI), 29), ?wikipediaID)
}
```

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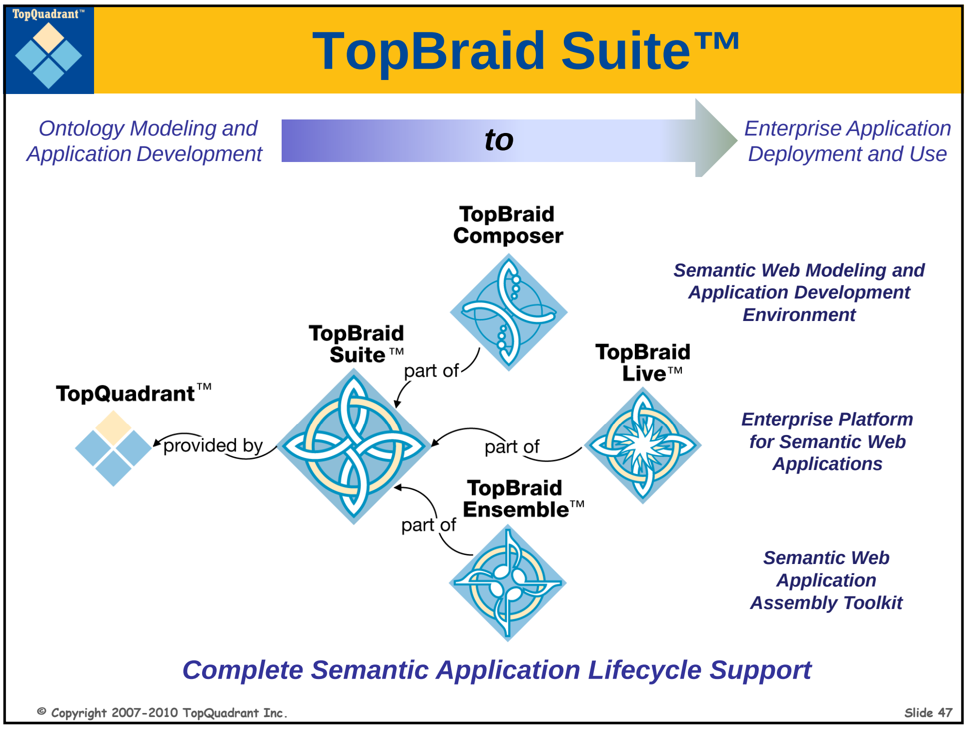

TopBraid Suite™

Ontology Modeling and Application Development **to** *Enterprise Application Deployment and Use*

TopBraid Composer

Semantic Web Modeling and Application Development Environment

TopBraid Suite™

part of

TopBraid Live™

Enterprise Platform for Semantic Web Applications

TopQuadrant™

provided by

part of

TopBraid Ensemble™

part of

Semantic Web Application Assembly Toolkit

Complete Semantic Application Lifecycle Support

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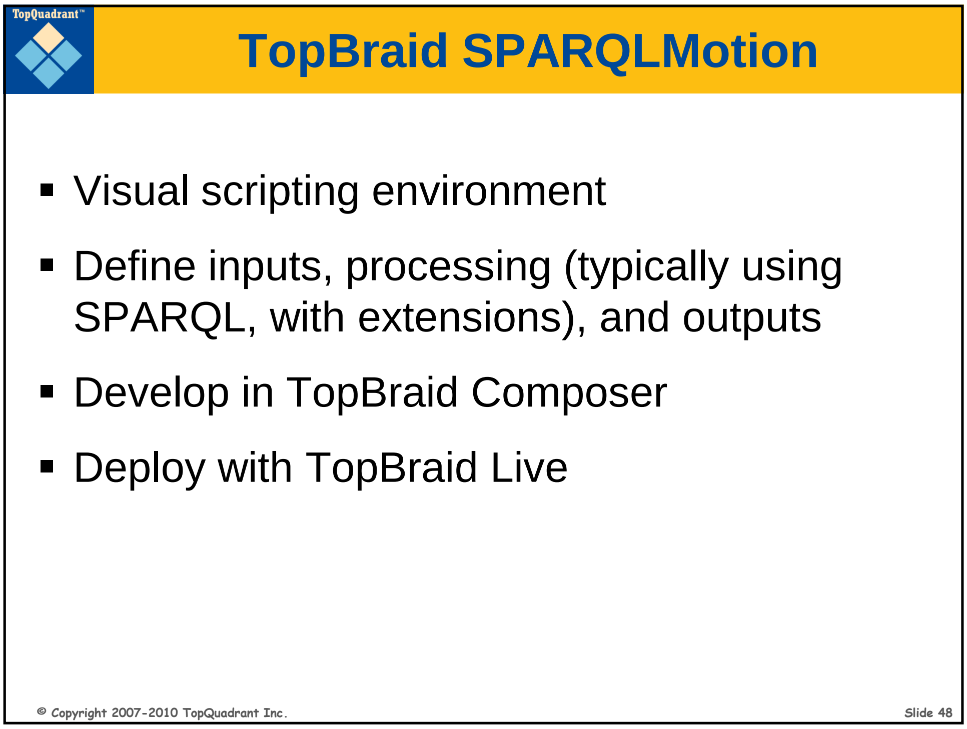

TopBraid SPARQLMotion

- Visual scripting environment
- Define inputs, processing (typically using SPARQL, with extensions), and outputs
- Develop in TopBraid Composer
- Deploy with TopBraid Live

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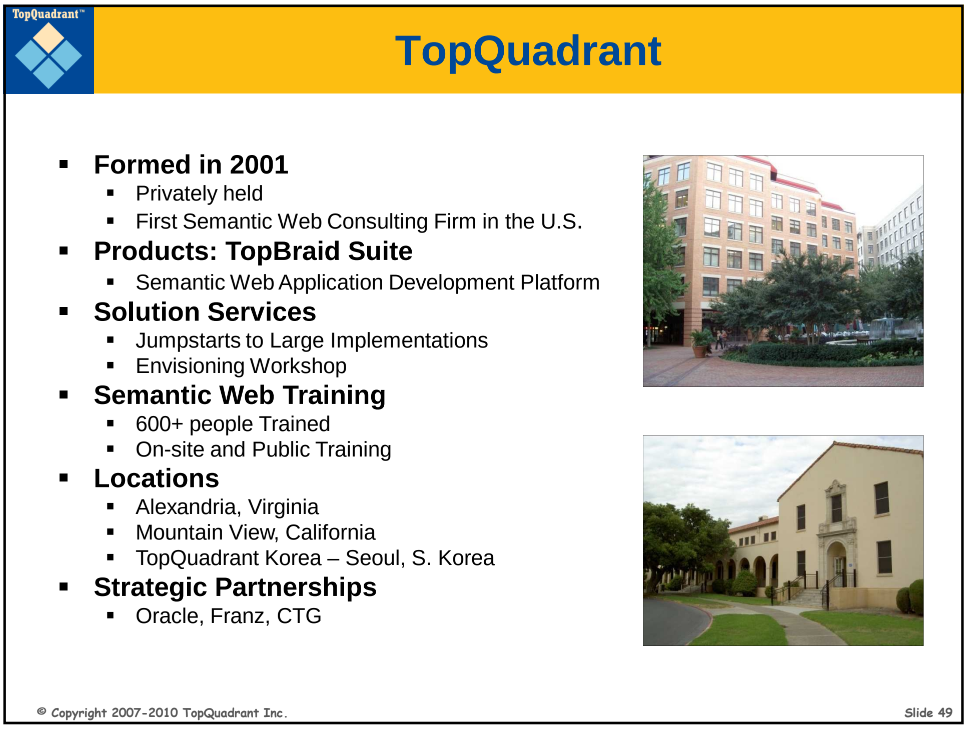

TopQuadrant™

TopQuadrant

- **Formed in 2001**
  - Privately held
  - First Semantic Web Consulting Firm in the U.S.
- **Products: TopBraid Suite**
  - Semantic Web Application Development Platform
- **Solution Services**
  - Jumpstarts to Large Implementations
  - Envisioning Workshop
- **Semantic Web Training**
  - 600+ people Trained
  - On-site and Public Training
- **Locations**
  - Alexandria, Virginia
  - Mountain View, California
  - TopQuadrant Korea – Seoul, S. Korea
- **Strategic Partnerships**
  - Oracle, Franz, CTG

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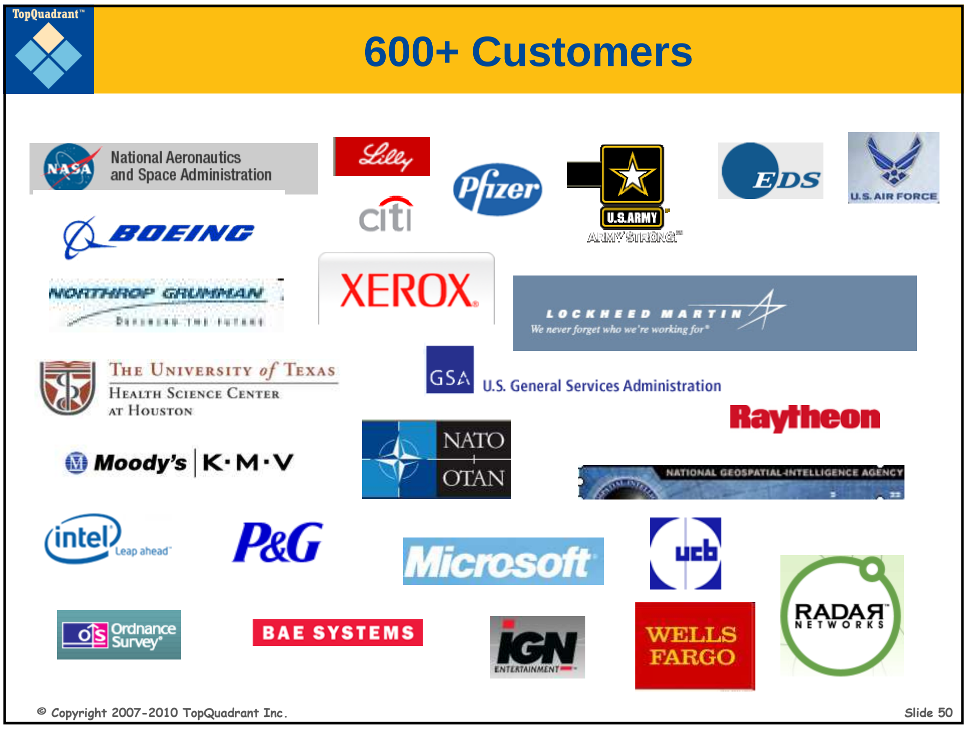

TopQuadrant™

600+ Customers

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NORTHROP GRUMMAN DEFINING THE FUTURE
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LOCKHEED MARTIN We never forget who we're working for
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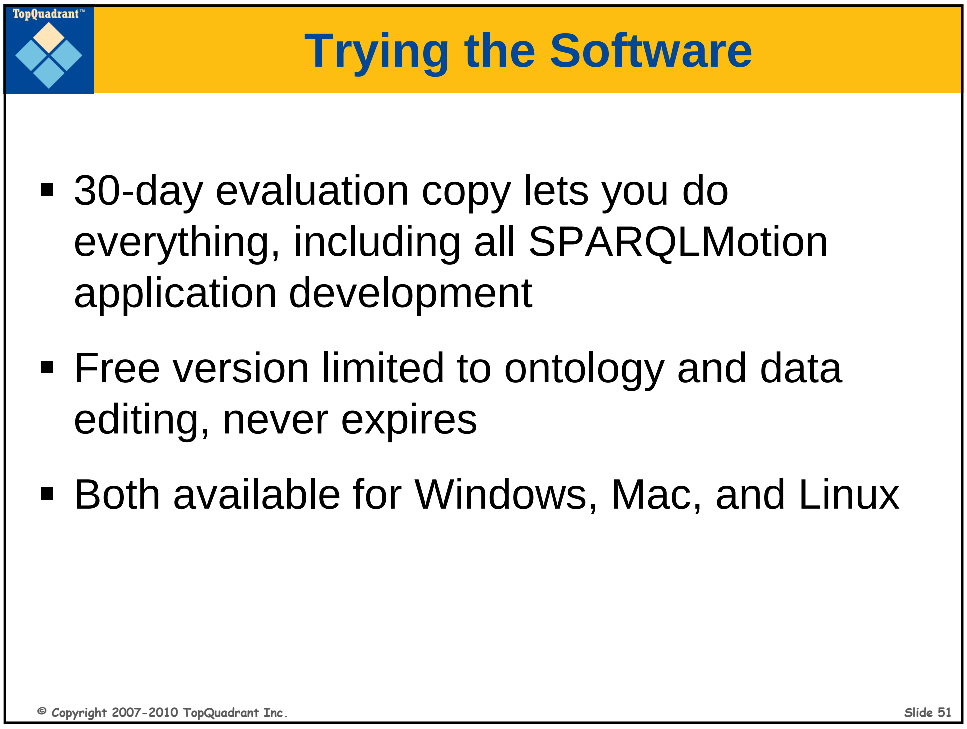
Moody's K·M·V
NATO OTAN
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
intel Leap ahead
P&G
Microsoft
ucb
Ordnance Survey
BAE SYSTEMS
IGN ENTERTAINMENT
WELLS FARGO
RADAR NETWORKS

Slide 50



Trying the Software

- 30-day evaluation copy lets you do everything, including all SPARQLMotion application development
- Free version limited to ontology and data editing, never expires
- Both available for Windows, Mac, and Linux

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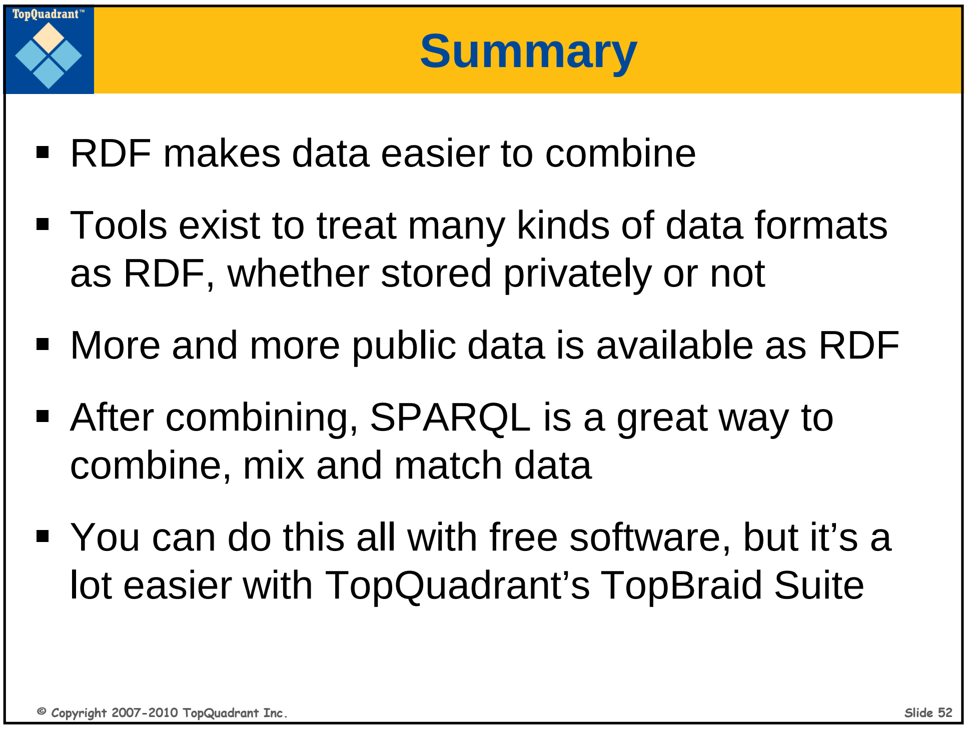

Summary

- RDF makes data easier to combine
- Tools exist to treat many kinds of data formats as RDF, whether stored privately or not
- More and more public data is available as RDF
- After combining, SPARQL is a great way to combine, mix and match data
- You can do this all with free software, but it’s a lot easier with TopQuadrant’s TopBraid Suite

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