

The Semantic Web Linked Data and RDF

An Introduction

Nigel Shadbolt

British Library, London

27th May 2010

Pre Reading

- Paper on the evolution of the Semantic Web and the Pragmatic Web of Linked Data

Shadbolt, N., Berners-Lee, T. and Hall, W. (2006) The Semantic Web Revisited. IEEE Intelligent Systems, 21 (3). pp. 96-101. ISSN 1541-1672

<http://eprints.ecs.soton.ac.uk/12614/>

- A good review of the development of Open Linked Data and the technology, approaches and philosophy

Christian Bizer, Tom Heath and Tim Berners-Lee (2009) Linked Data - The Story So Far. International Journal on Semantic Web and Information Systems, Vol. 5(3), Pages 1-22. DOI: 10.4018/jswis.2009081901

<http://tomheath.com/publications/html>

Pre Reading

- A somewhat technical description of the linked data approach to open government data

Omitola, T., Koumenides, C. L., Popov, I. O., Yang, Y., Salvadores, M., Szomszor, M., Berners-Lee, T., Gibbins, N., Hall, W., schraefel, m. and Shadbolt, N. (2010) Put in your postcode, out comes the data: A Case Study. In: 7th Extended Semantic Web Conference, May 2010, Greece.

<http://eprints.ecs.soton.ac.uk/18765/>

4 A review of cataloguing work in the area of government data repositories

Koumenides, C., Alani, H., Shadbolt, N. and Salvadores, M. (2010) Global Integration of Public Sector Information. In: Web Science Conference 2010, 26-27 April, 2010, Raleigh, NC, USA.

<http://eprints.ecs.soton.ac.uk/21025/>

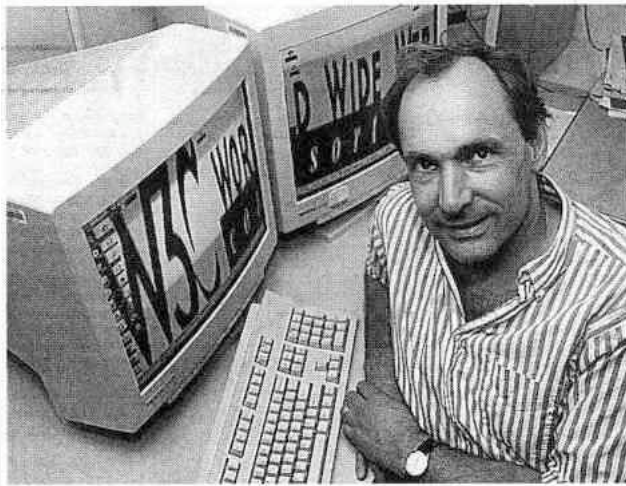
Follow on Reading

- Excellent slide set for those who want to deepen understanding of RDF and Linked Data

<http://www.slideshare.net/bhaslhofer/linked-data-tutorial>

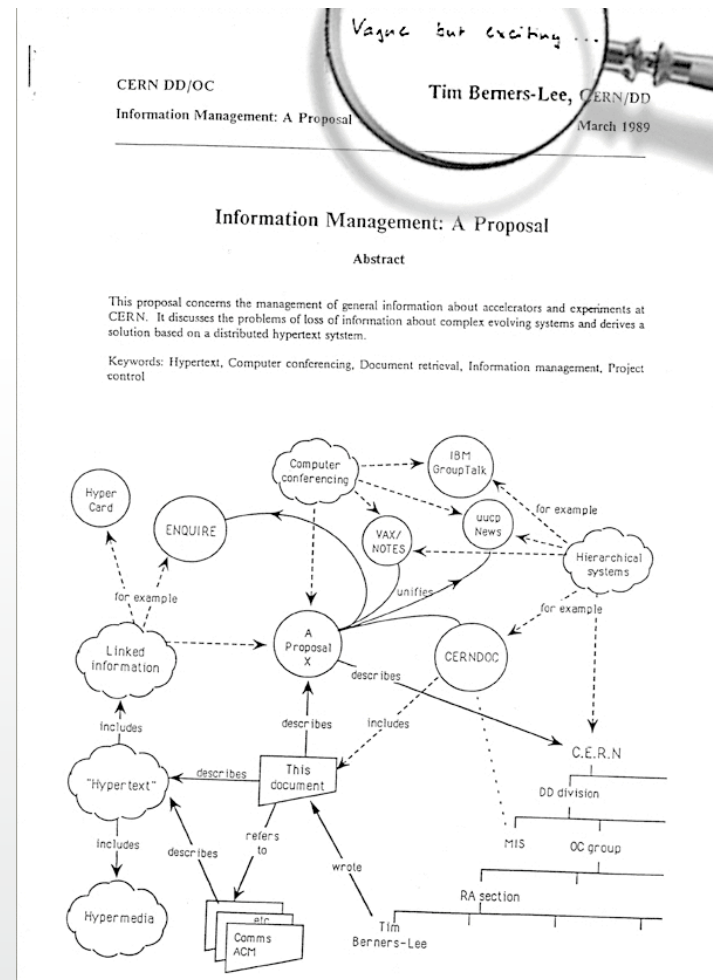
Basis of some examples in introduction

Origins



Tim Berners-Lee: Erfinderstolz

Foto: AP



Lessons learnt

- Big is beautiful: the network is everything
- Scruffy works: let the links fail to make it scale
- Democracy rules: open, free and universal

The Semantic Web circa 2000

Too Complex

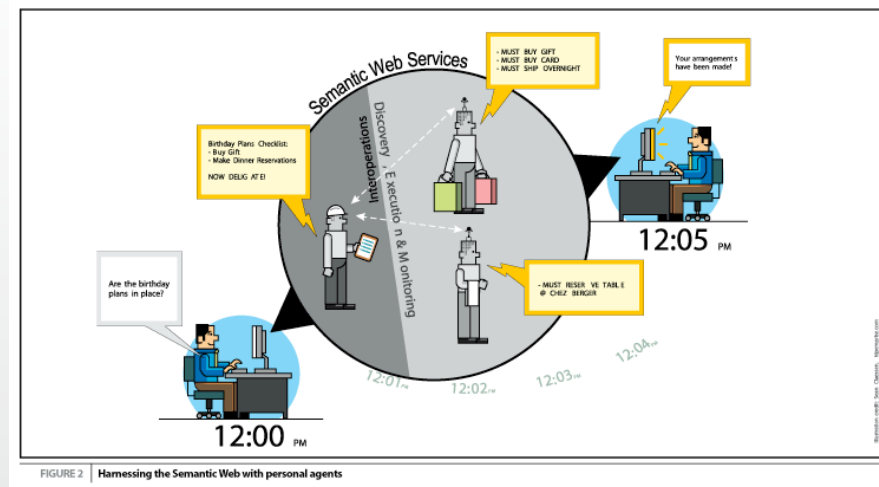
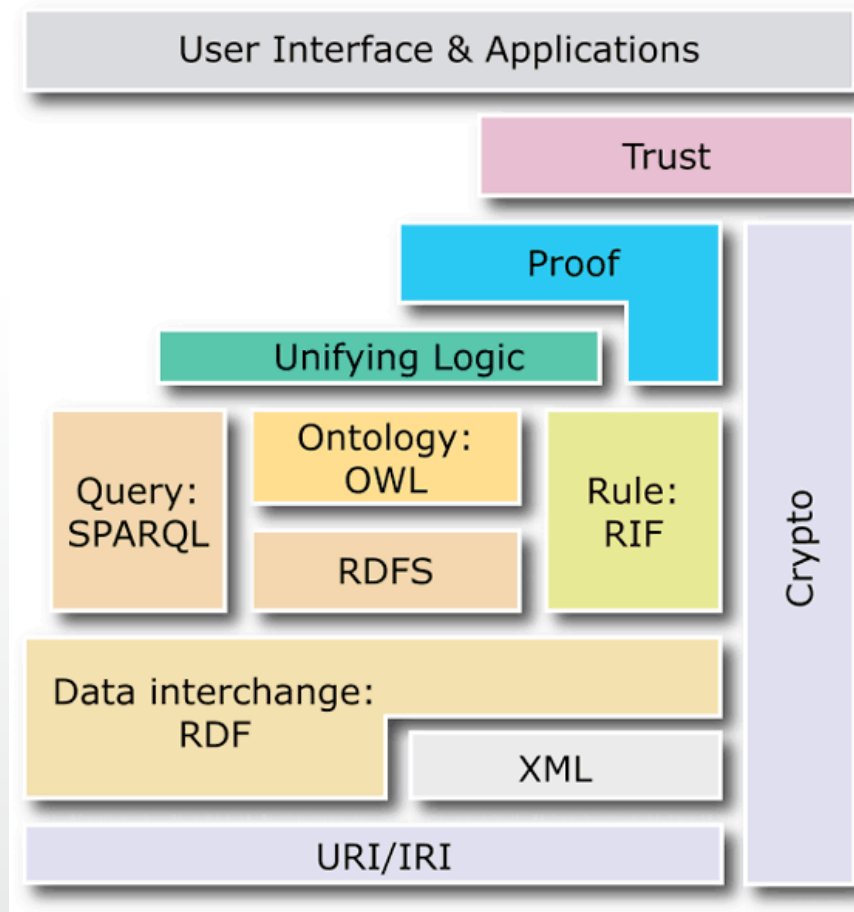


FIGURE 2 | Harnessing the Semantic Web with personal agents

The Semantic Web circa 2010

Much Simpler

The four micro principles of the Semantic Web

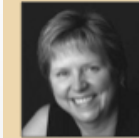
1. All entities of interest, such as information resources, real-world objects, and vocabulary terms should be identified by URI references.
2. URI references should be dereferenceable, meaning that an application can look up a URI over the HTTP protocol and retrieve RDF data about the identified resource.
3. Data should be provided using the RDF/XML syntax.
4. Data should be interlinked with other data.



Nigel Shadbolt is a professor of artificial intelligence in the School of Electronics and Computer Science at Southampton University. Contact him at nrs@ecs.soton.ac.uk.



Tim Berners-Lee is the director of the World Wide Web Consortium, a senior researcher at the Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory, and a professor of computer science in the Department of Electronics and Computer Science at Southampton University. Contact him at timbl@w3.org.



Wendy Hall is a professor of computer science in the School of Electronics and Computer Science at Southampton University. Contact her at wh@ecs.soton.ac.uk.

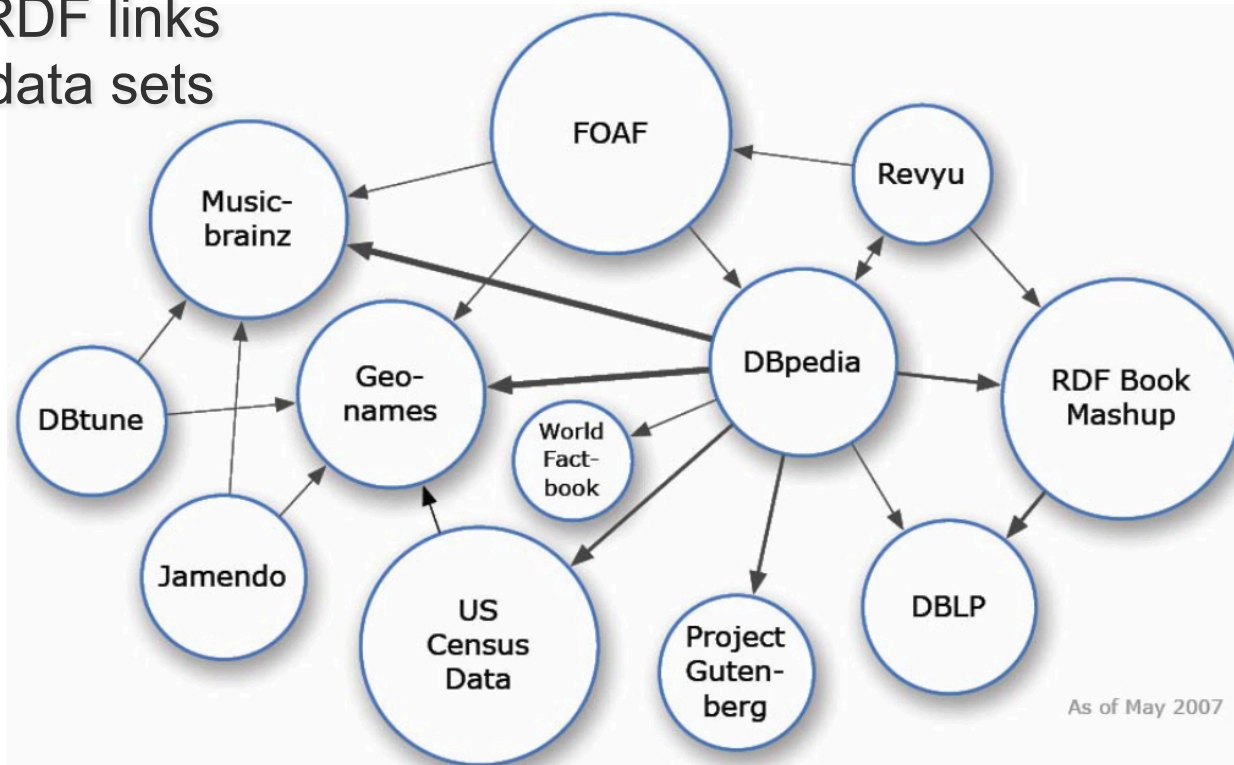
The Semantic Web Revisited

Nigel Shadbolt and Wendy Hall, *University of Southampton*
Tim Berners-Lee, *Massachusetts Institute of Technology*

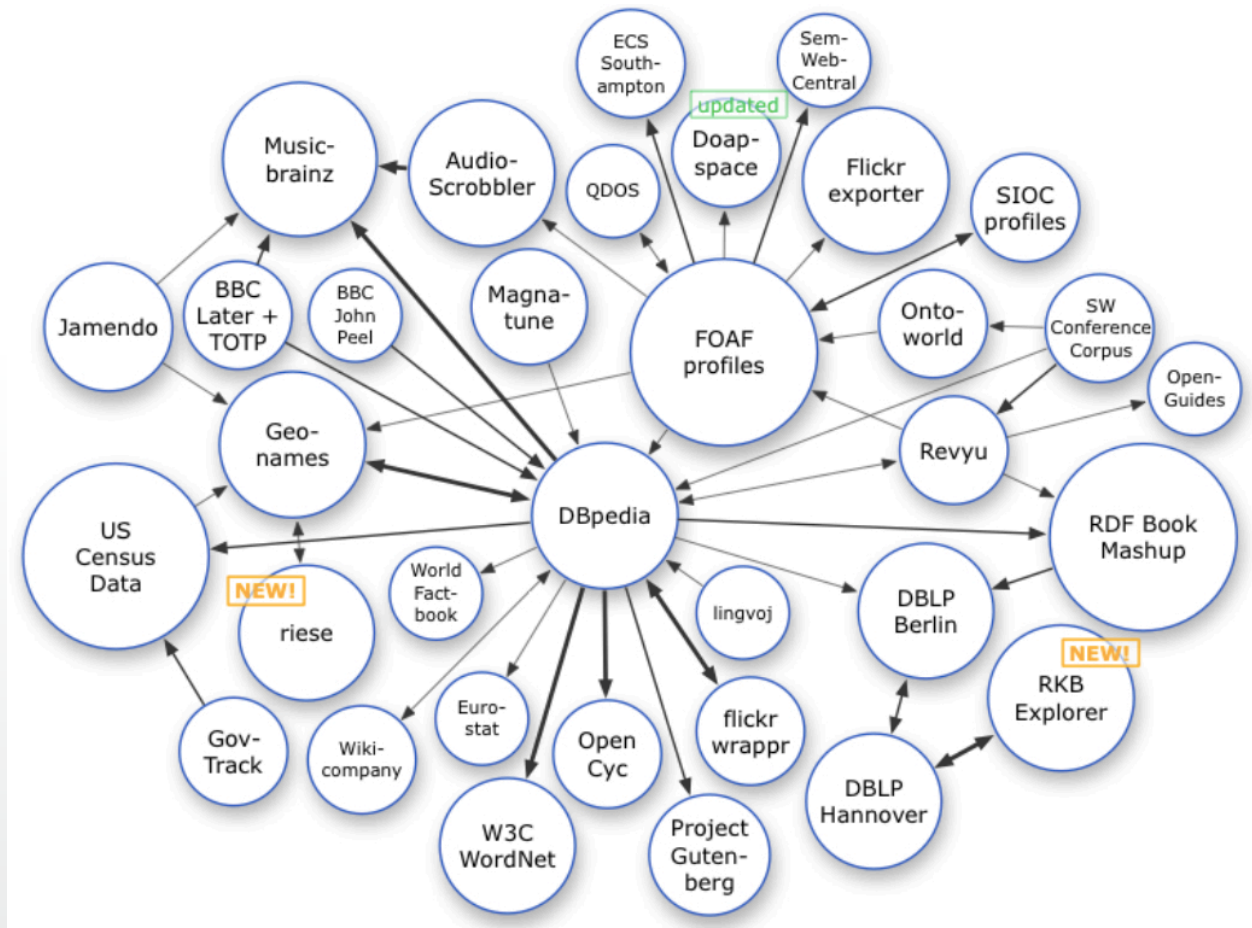
Linked Data on the Web:

May 2007

500 Million RDF Triples
120,000 RDF links
between data sets

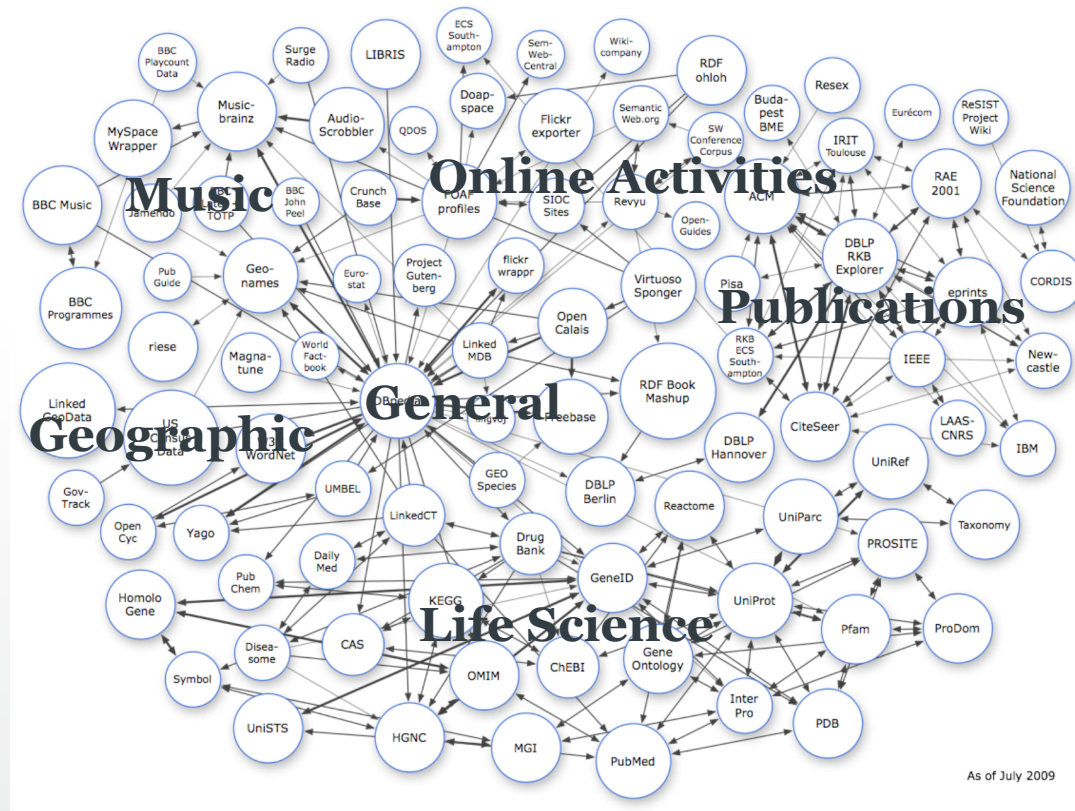


Linked Data on the Web: April 2008



Linked Data on the Web: July 2009

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and Computer Science

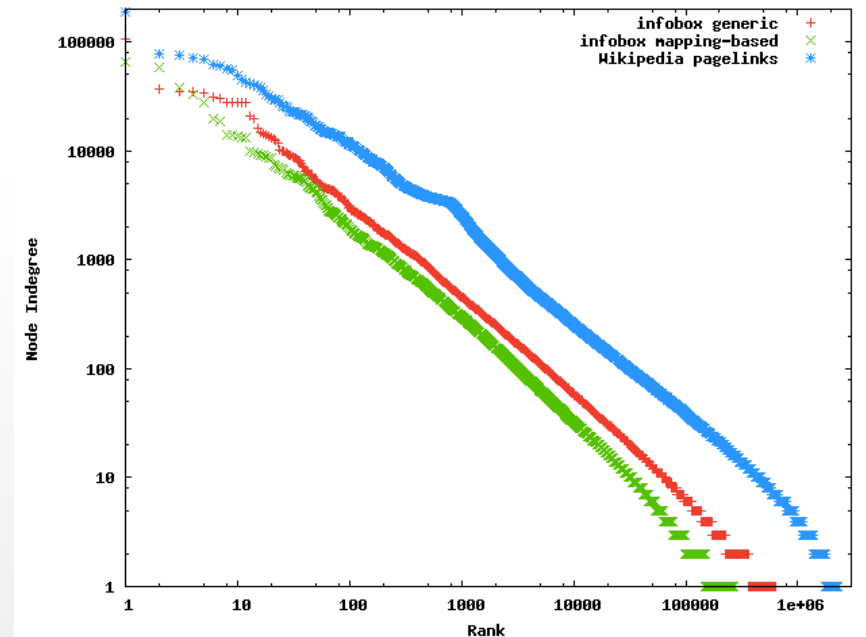


Richard Cyganiak

**Open Linked Data on the Web:
July 2009
Billions of triples and hundreds
of millions of links**

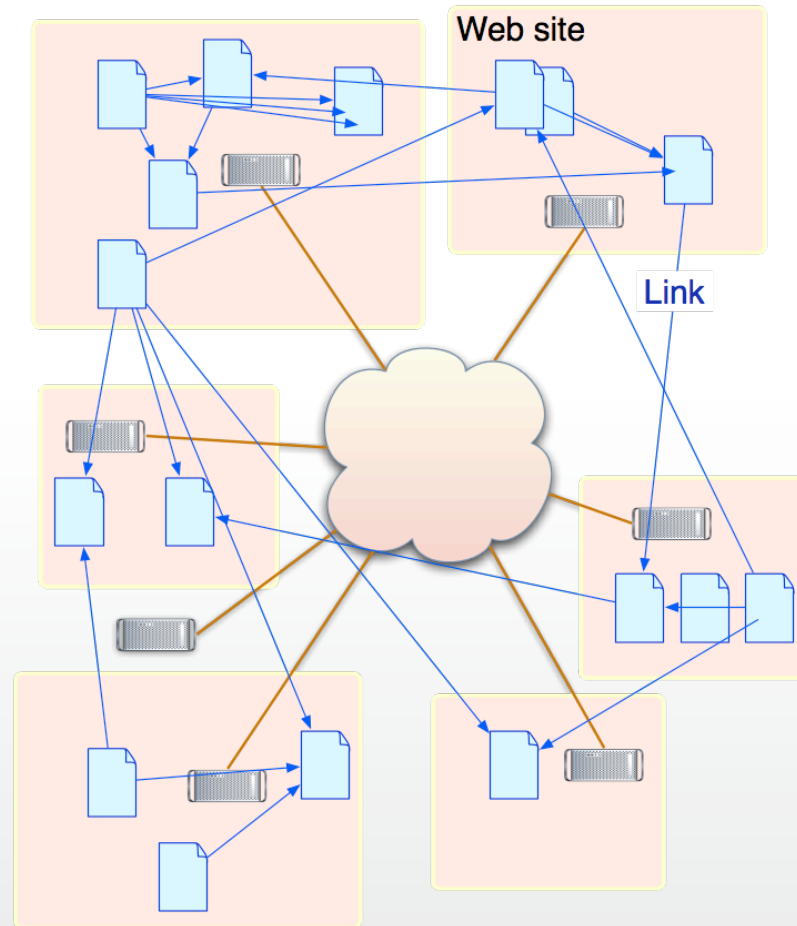
The Shape of Linked Data

- Micro principles to macro phenomena
- Shape and structure
- Scale free
- Preferential attachment
- Communities
- Values and obligations
- Incentives

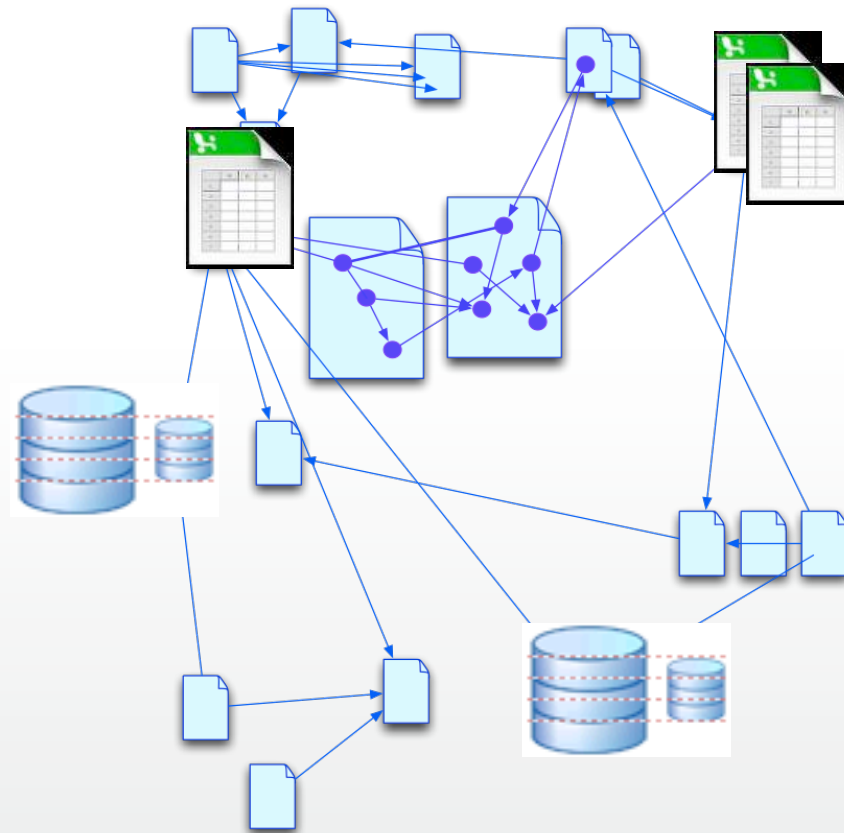


From documents to data

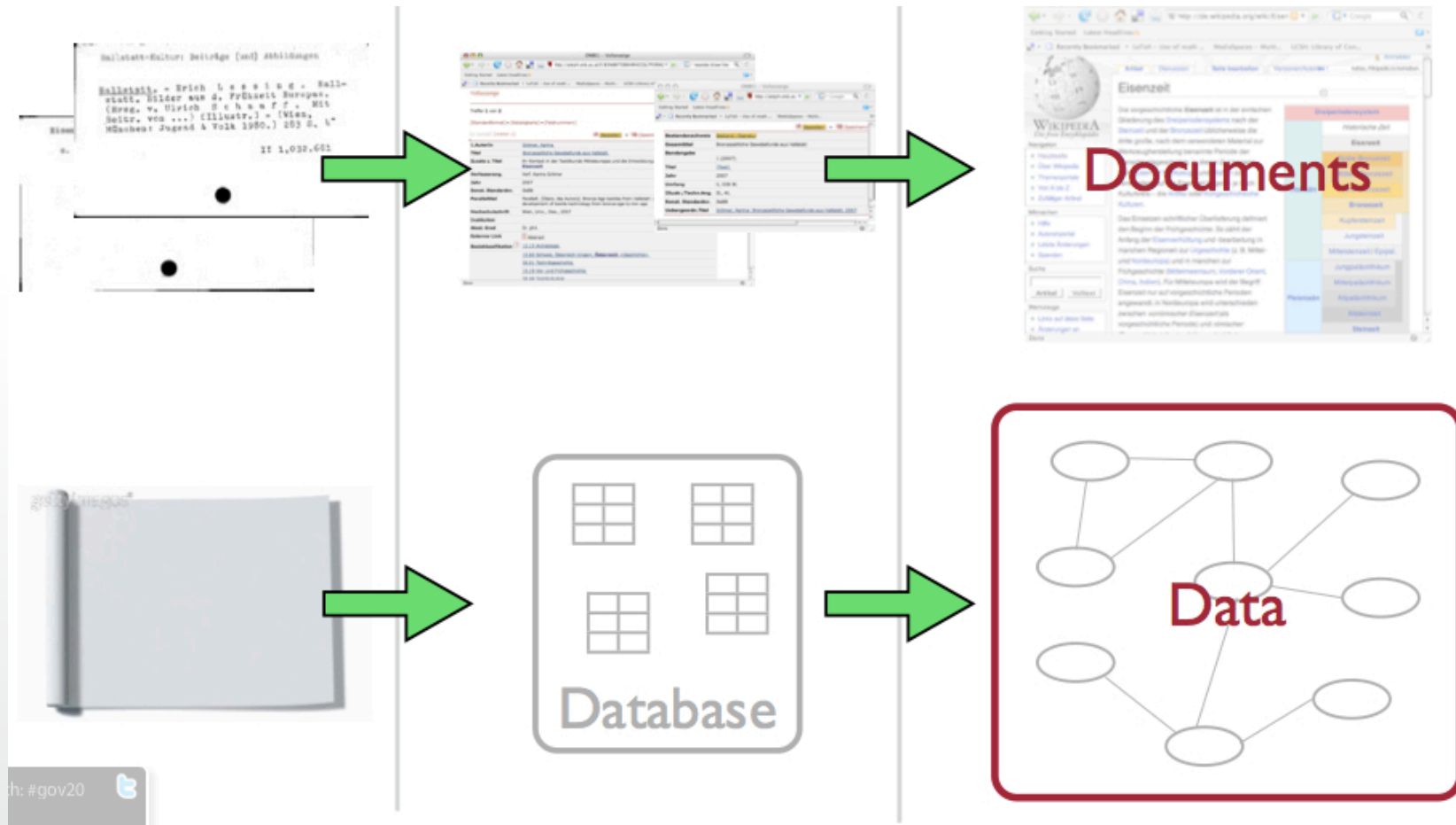
From a Web of documents...



To a Web of data...



An Evolution



<http://www.slideshare.net/bhaslhofer/linked-data-tutorial>

Babel

OAI-PMH REST CD-ROM FTP

OAI-ORE SRU/SRQ Web Services SOAP

Atom RSS WSDL UDDI

JSON CD-ROM RPC

Z39.50 DCOM RMI CORBA

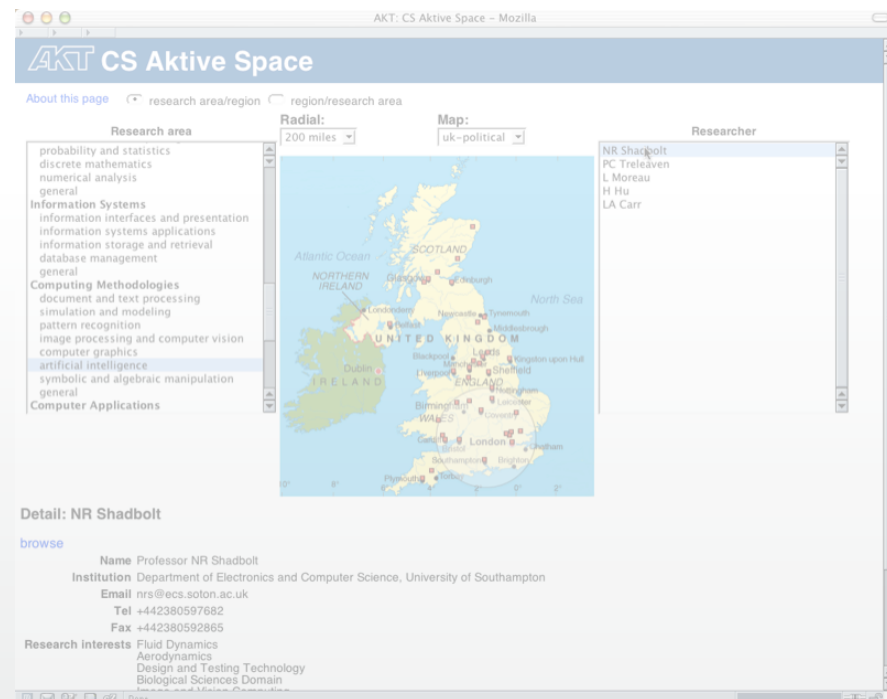
Aim

- Get into the data silos
 - Move from a view dominated by the repository
 - Publish data of interest on the Web in a way that
 - other applications can access and interpret the data
 - using common Web technologies
-
- BTW you can use Linked Data for Intranets too

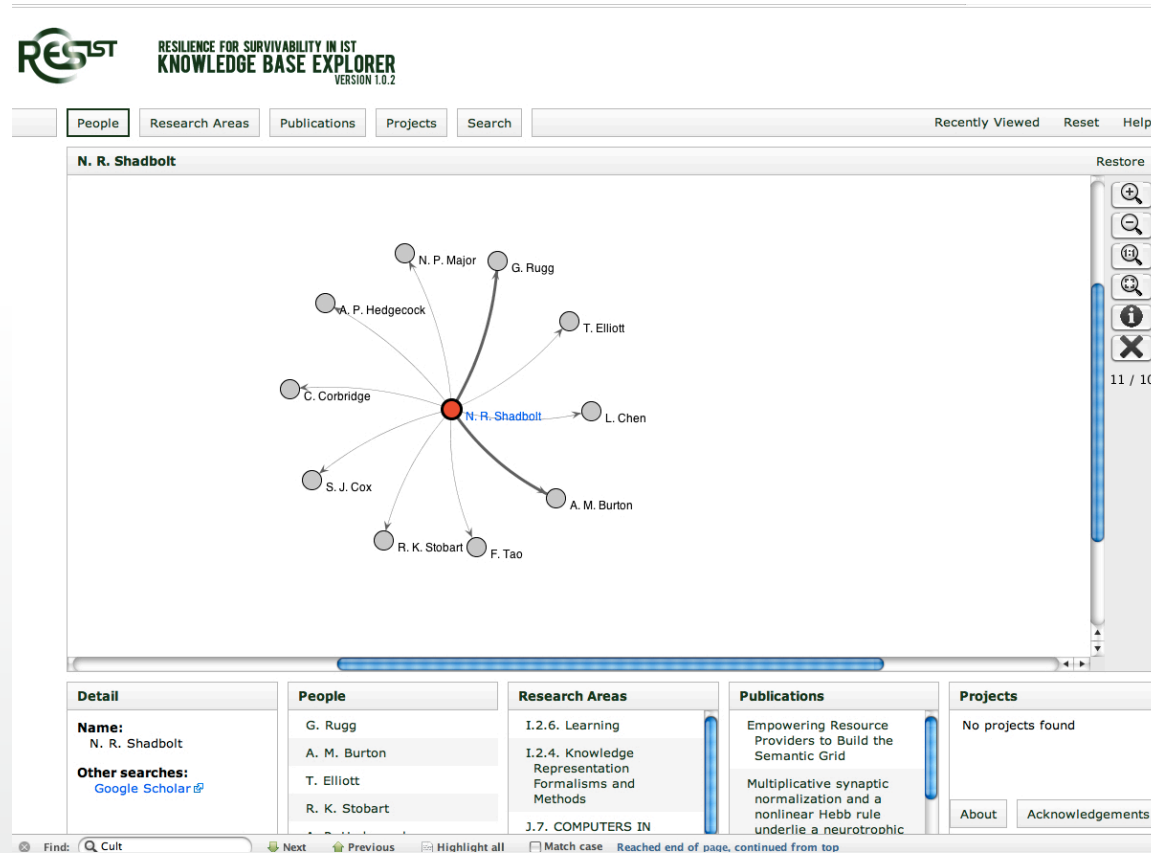
CS AKTive: Pioneering Linked Data

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- Content harvested and published from multiple different sources
- Higher Education directories
- 2001 RAE submissions
- UK EPSRC project database
- Personnel, projects and publications UK CS Web sites



RKBExplorer: Linked Data today



Searching for Linked Data

sig.ma

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and Computer Science

The screenshot shows the sig.ma web application interface. The browser address bar displays the URL: `http://sig.ma/search?q=http%3A%2F%2Fsouthampton.rkbexplorer.com%2Fid%2Fpers...`. The page header includes the sig.ma logo and navigation links for Help, About, and Forum. A search bar contains the URL `http://southampton.rkbexplorer.com/id/person`, with buttons for 'Add More Info', 'Start New', 'Options', 'Use It', and 'Order'. The main content area displays the profile for 'N R Shadbolt', including fields for 'given name' (Nigel R) and 'family name' (Shadbolt). Below these, a list of works is shown, including 'AKT Selected Papers 2004', 'INSTRUCTA-Phase II', 'Techniques of Temporal Representation', 'Research & Development in Expert Systems VI', 'Expert Systems - A Natural History', 'Report of the 8th Workshop of the Planning Special Interest Group', 'Processing Reference', 'Expert Systems in the Financial Industries', 'Intelligent Interfaces', 'Preliminary Report of the Workshop on Teaching AI in Departments of Psychology', 'A Framework for Research in Cognitive Science', 'Living Documents', 'Tempus Fugit I: Representing Time and Change', 'Hypermedia for knowledge engineering', 'Human Sciences Technology Audit', 'Final Report of the 9th Workshop of The UK Planning Special Interest Group', 'Knowledge Technologies', 'Education and Human-Computer Interaction', and 'Knowledge Technologies and the Semantic Web'. A button 'show 282 more values' is visible. The right sidebar shows a list of sources, including 'Nigel R Shadbolt', 'AKT Selected Papers 2004', 'INSTRUCTA-Phase II', 'Techniques of Temporal Representation', 'Expert Systems - A Natural History', 'Research and Development...', 'Report of the 8th Worksh...', 'Processing Reference', 'Expert Systems in the Fi...', 'Intelligent Interfaces', 'Preliminary Report of th...', 'A Framework for Research...', 'Living Documents', 'Tempus Fugit I: Represen...', and 'Hypermedia for knowledge...'. At the bottom, there is a search bar with 'Find: paul' and buttons for 'Next', 'Previous', 'Highlight all', 'Match case', and 'Phrase not found'.

The Principles of Linked Data

The four micro principles of the Semantic Web

1. All entities of interest, such as information resources, real-world objects, and vocabulary terms should be identified by URI references.
2. URI references should be dereferenceable, meaning that an application can look up a URI over the HTTP protocol and retrieve RDF data about the identified resource.
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The Semantic Web Revisited

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Principle 1: URIs

Web addresses for data

- Uniform Resource identifier
- Names for the things of interest
- A Web based identifier
- You can dereference them – get something back
- Information about objects, relations, properties and values

<http://rdf.ecs.soton.ac.uk/person/2686>

<http://rdf.ecs.soton.ac.uk/project/464>

<http://rdf.ecs.soton.ac.uk/publication/11065>

<http://education.data.gov.uk/doc/school/120805>

[http://southampton.rkbexplorer.com/id/
person-02686](http://southampton.rkbexplorer.com/id/person-02686)

[http://dbpedia.org/resource/Nigel Shadbolt](http://dbpedia.org/resource/Nigel_Shadbolt)

Principle 2: Dereferencable

- Uniform Resource identifier
- Names for the things of interest
- A Web based identifier
- You can dereference them – get something back
- Information about objects, relations, properties and values

| ▼ Southampton ECS People: Professor Nigel R Shadbolt | | |
|--|--------------|---|
| Southampton ECS People: Professor Nigel R Shadbolt | Description | This rdf document contains information about a person in the Department of Electronics at Southampton. |
| Nigel Shadbolt | Source | http://www.ecs.soton.ac.uk/people/nrs |
| | Title | Southampton ECS People: Professor Nigel R Shadbolt |
| | Date Created | 2009-11-26T10:53:20Z |
| | type | Ontology |
| | label | Southampton ECS People: Professor Nigel R Shadbolt |
| | Appellation | Professor |
| | Family Name | Shadbolt |
| | Full Name | Professor Nigel R Shadbolt |
| | Given Name | Nigel R |
| | Role | http://id.ecs.soton.ac.uk/role/2686 |
| | member Of | http://id.ecs.soton.ac.uk/project/221 http://id.ecs.soton.ac.uk/project/293 http://id.ecs.soton.ac.uk/project/312 http://id.ecs.soton.ac.uk/project/353 http://id.ecs.soton.ac.uk/project/361 http://id.ecs.soton.ac.uk/project/381 http://id.ecs.soton.ac.uk/project/395 http://id.ecs.soton.ac.uk/project/443 http://id.ecs.soton.ac.uk/project/44 http://id.ecs.soton.ac.uk/project/45 http://id.ecs.soton.ac.uk/project/463 http://id.ecs.soton.ac.uk/project/464 http://id.ecs.soton.ac.uk/project/465 http://id.ecs.soton.ac.uk/project/466 http://id.ecs.soton.ac.uk/project/467 http://id.ecs.soton.ac.uk/project/508 http://id.ecs.soton.ac.uk/project/623 http://id.ecs.soton.ac.uk/project/629 http://id.ecs.soton.ac.uk/project/630 |
| | type | Person |
| | family name | Shadbolt |
| | givenname | Nigel R |
| | homepage | http://users.ecs.soton.ac.uk/nrs/ |
| | img | http://www.ecs.soton.ac.uk/image.php?id=person_2686&checksum=75b0a0c2158b33a0c10e328ec62f9ed1cc732 http://www.ecs.soton.ac.uk/image.php?id=person_2686&checksum=6c2158b33a0c10e328ec62f9ed1cc732 |
| | mbox | mailto:nrs@ecs.soton.ac.uk |
| | name | Professor Nigel R Shadbolt |

Principle 3: RDF back

- Uniform Resource identifier
- A Web based identifier
- You can dereference them – get something back
- Information about objects, relations, properties and values

▼ Southampton ECS Projects: MIMEX: Multivariant Information Management and Exploitation

| | | |
|---|---|--|
| Southampton ECS Projects: MIMEX: Multivariant Information Management and Exploitation | Description | This rdf document contains information about a project in the Department of Electronics and Computer Science, University of Southampton. http://www.ecs.soton.ac.uk/research/projects/443 Southampton ECS Projects: MIMEX: Multivariant Information Management and Exploitation 2009-11-26T10:58:31Z Ontology Southampton ECS Projects: MIMEX: Multivariant Information Management and Exploitation http://id.ecs.soton.ac.uk/UoS |
| http://id.ecs.soton.ac.uk/project/443 | Source Title Date Created type label associated With | General Dynamics UK Limited Organization University of Cardiff Organization Ministry of Defence Organization http://id.ecs.soton.ac.uk/UoS/ECS MIMEX: Multivariant Information Management and Exploitation http://id.ecs.soton.ac.uk/theme/106 http://id.ecs.soton.ac.uk/theme/127 http://id.ecs.soton.ac.uk/theme/130 http://id.ecs.soton.ac.uk/theme/38 http://id.ecs.soton.ac.uk/theme/66 https://www.edefence.org/mimex http://id.ecs.soton.ac.uk/group/iam |
| | associated With Unit Name Theme | in Calendar Clock day hour minute month year type 2006-07-03T00:00:00Z Instant |
| | Web Page run By Group begins | in Calendar Clock day hour minute month year type 2009-03-31T00:00:00Z Instant |
| | ends | in Calendar Clock day hour minute month year type 2009-03-31T00:00:00Z Instant |

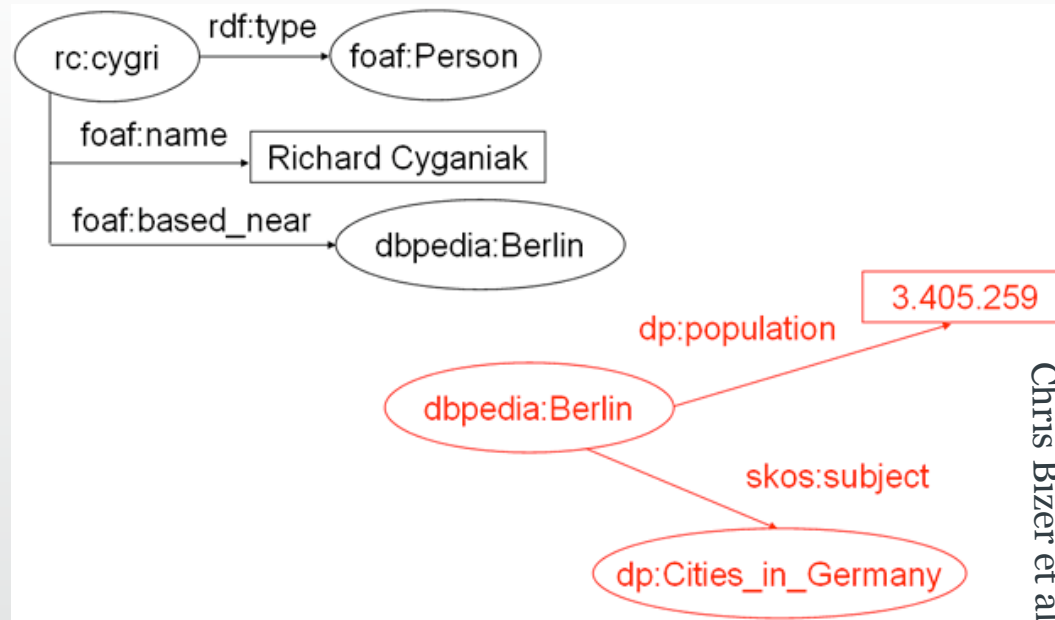
Essential RDF – a simple way to represent information

- Statements about resources in the form of subject-predicate-object
- A knowledge representation language for the Web
- Represents information as sets of triples – subject verb object
- Every element of a triple can be a URI or a concrete value (literal)
- Sets of RDF triples can be represented as graphs

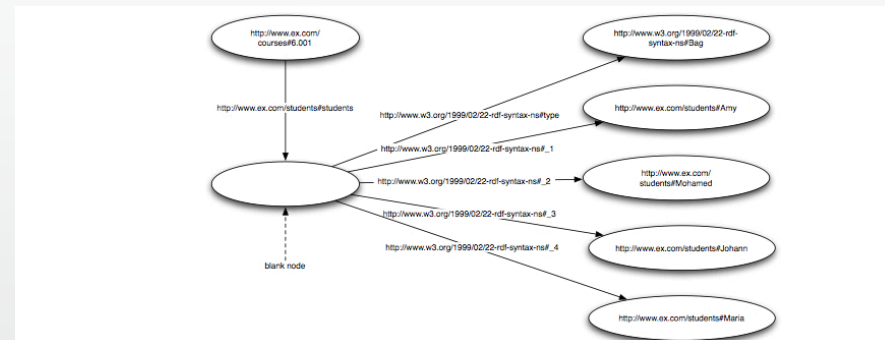
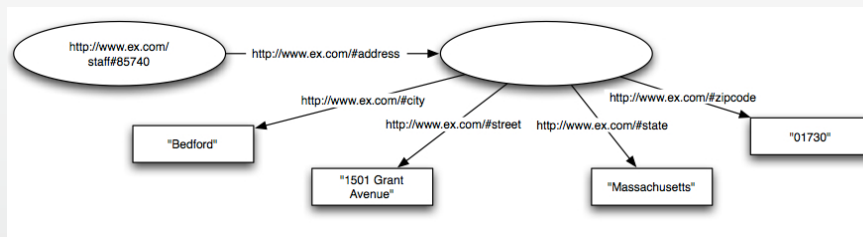
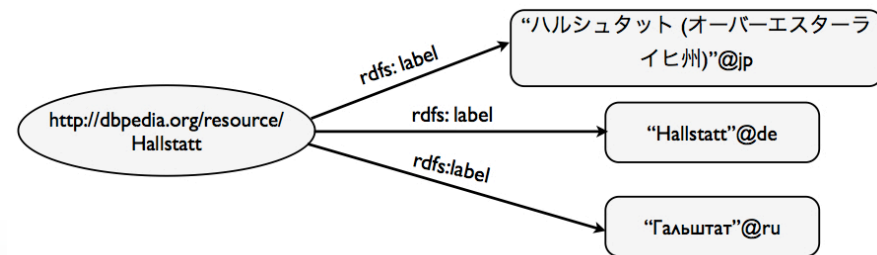
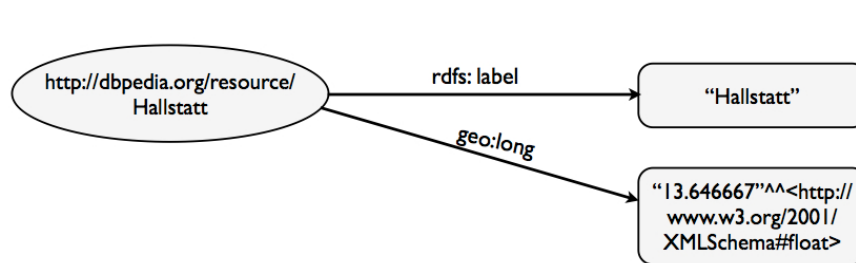
| | | |
|----------------|-----------------|-----------------------|
| rc:cygri | rdf:type | foaf:Person. |
| rc:cygri | foaf:name | "Richard Cyganiak" . |
| rc:cygri | foaf:based_near | dbpedia:Berlin . |
| dbpedia:Berlin | dp:population | "3,405,259" |
| dpedia:Berlin | skos:subject | dp:Cities_in_Germany. |

Essential RDF

- Statements about resources in the form of subject-predicate-object
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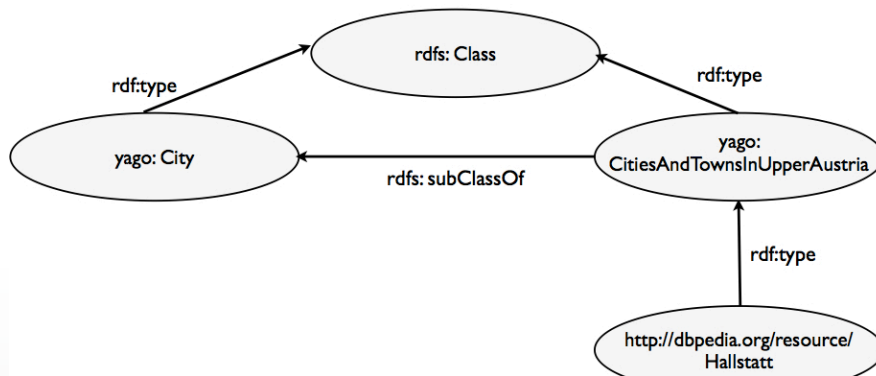


More on RDF

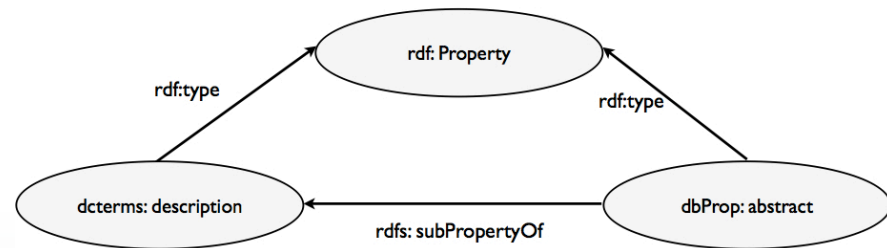


<http://www.slideshare.net/bhaslhofer/linked-data-tutorial>

RDF Schema



- classes and subclass relationships
- properties and subPropertyOf relationships

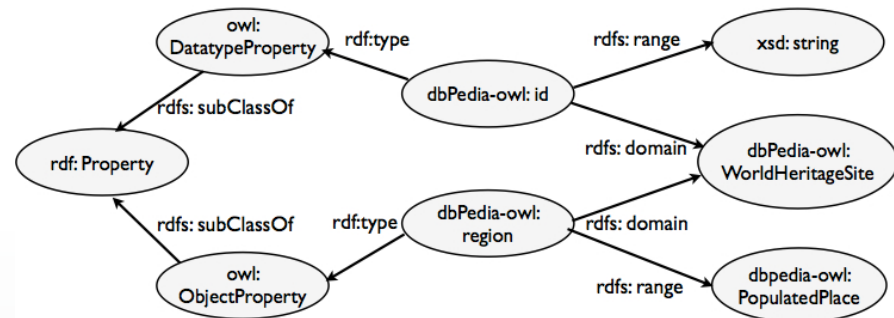
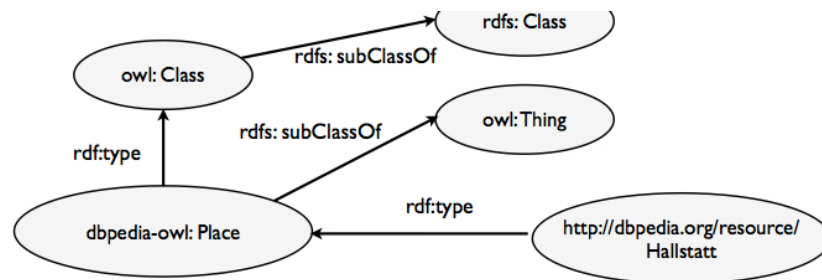


- no cardinality constraints on properties
- no inverse / transitive / symmetric properties
- no union / disjoint / enumeration classes

<http://www.slideshare.net/bhaslhofer/linked-data-tutorial>

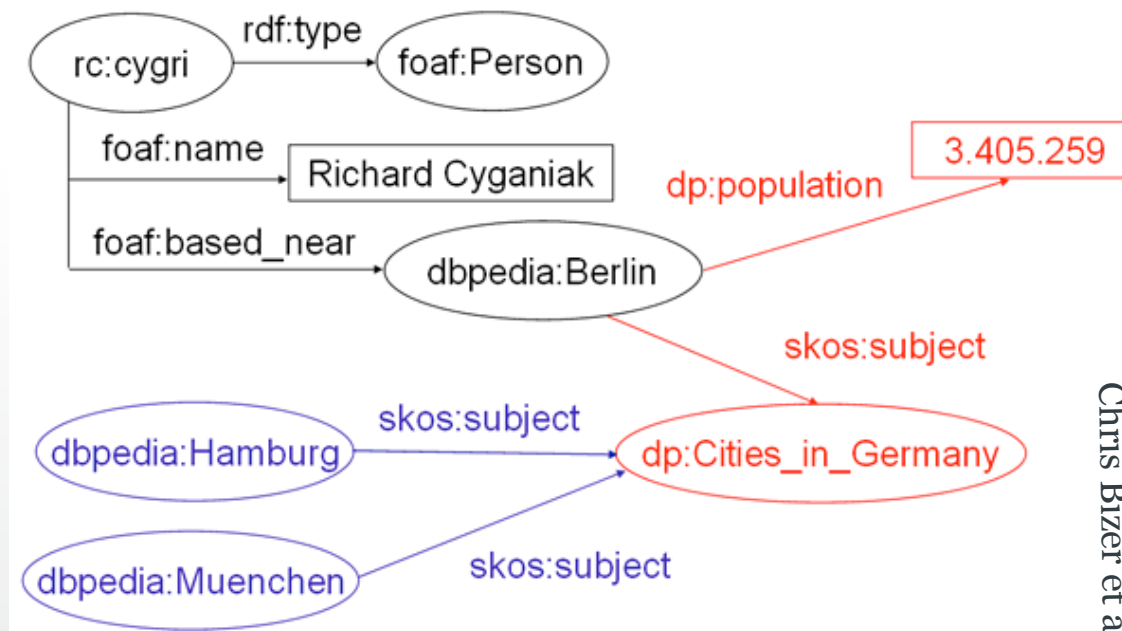
Web Ontology Language

OWL – more expressive



- Plus additional logical relations
- owl: inverseOf (e.g., hasChild inverseOf hasParent)
- owl: transitiveProperty (e.g., hasAncestor)
- owl: symmetricProperty (e.g., knows)
- :
- owl: intersectionOf (e.g., EmployedPerson = Person Intersection CorporateResources)
- owl: unionOf (e.g., NorthAmericanCitizen = USCitizen Union CanadaCitizen)
- owl: disjointWith (e.g., Woman Intersection Man = 0)
- :

Principle 4: Link data



Principle 4: Link data

<http://rdf.ecs.soton.ac.uk/person/2686>

SameAs

<http://southampton.rkbexplorer.com/id/person-02686>

SameAs

http://dbpedia.org/resource/Nigel_Shadbolt

The image displays two screenshots of the SIG.MA Semantic Informa Mashup interface, showing the profiles of Nigel Shadbolt and N R Shadbolt.

Top Screenshot: Nigel Shadbolt

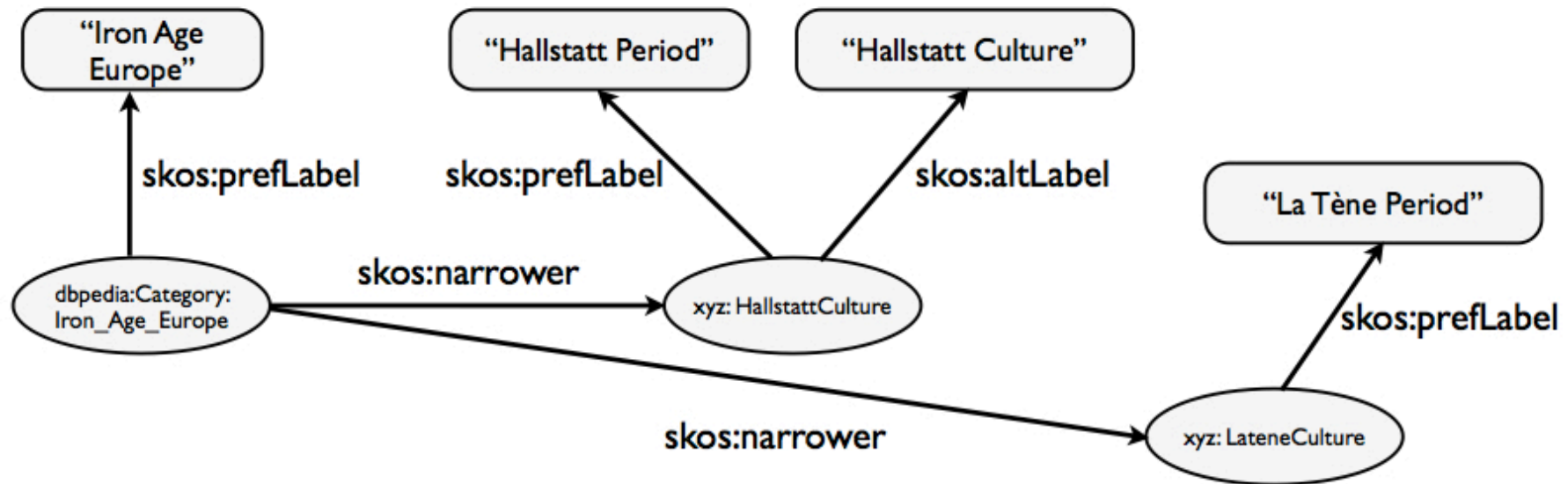
- URL:** http://sig.ma/search?q=http%3A%2F%2Fdbpedia.org%2Fresource%2FNigel_Shadbolt
- Identifier:** http://dbpedia.org/resource/Nigel_Shadbolt
- Known for:** Semantic Web [8,16]
- Label:** Nigel Shadbolt [1]
- Sources (20):**
 - 1 Nigel Shadbolt 10 facts | 2009-09-20 http://dbpedia.org/resource/Nigel_Shadbolt
 - 2 Untitled document 1 facts | 2009-08-25 http://dbpedia.org/resource/Professor_Nigel_Shadbolt...
 - 3 Untitled document 1 facts | 2009-08-24 http://dbpedia.org/resource/Web_Science_Research_In...
 - 4 Untitled document 1 facts | 2009-08-27 http://dbpedia.org/resource/Daniel_Weltzner
 - 5 Untitled document 1 facts | 2009-08-27 http://dbpedia.org/resource/Web_Science
 - 6 English computer scienti... 2 facts | 2009-09-22 http://dbpedia.org/resource/Category:English_comput...

Bottom Screenshot: N R Shadbolt

- URL:** <http://sig.ma/search?q=http%3A%2F%2Fsouthampton.rkbexplorer.com%2Fid%2Fperson-02686>
- Given name:** Nigel R [1]
- Family name:** Shadbolt [1]
- Is creator of:**
 - AKT Selected Papers 2004 [2]
 - INSTRUCTA-Phase II [3]
 - Techniques of Temporal Representation [4]
 - Research & Development in Expert Systems VI [5,6]
 - Expert Systems - A Natural History [5]
 - Report of the 8th Workshop of the Planning Special Interest Group [7]
 - Processing Reference [8]
 - Expert Systems in the Financial Industries [9]
 - Intelligent Interfaces [10]
 - Preliminary Report of the Workshop on Teaching AI in Departments of Psychology [11]
 - A Framework for Research in Cognitive Science [12]
 - Living Documents [13]
 - Tempus Fugit I: Representing Time and Change [14]
 - Hypermedia for knowledge engineering [15]
 - Human Sciences Technology Audit [16]
 - Final Report of the 9th Workshop of The UK Planning Special Interest Group [17]
 - Knowledge Technologies [18]
 - Education and Human-Computer Interaction [19]
 - Knowledge Technologies and the Semantic Web [20]
- Appellation:** <http://www.aktors.org/ontology/portal#Prof> [1]
- Sources (20):**
 - 1 Nigel R Shadbolt 316 facts | 2009-09-17 <http://southampton.rkbexplorer.com/id/person-02686>
 - 2 AKT Selected Papers 2004 4 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-12485>
 - 3 INSTRUCTA-Phase II 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2408>
 - 4 Techniques of Temporal R... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2409>
 - 5 Expert Systems - A Natur... 5 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2374>
 - 6 Research and Development... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2272>
 - 7 Report of the 8th Worksh... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2388>
 - 8 Processing Reference 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2314>
 - 9 Expert Systems in the Fi... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2401>
 - 10 Intelligent Interfaces 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2402>
 - 11 Preliminary Report of th... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2403>
 - 12 A Framework for Research... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2405>
 - 13 Living Documents 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2407>
 - 14 Tempus Fugit I: Represent... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-2410>
 - 15 Hypermedia for knowedge... 3 facts | 2009-09-17 <http://southampton.rkbexplorer.com/d/prints-4177>

Ontologies and Vocabularies

e.g. SKOS



Wikipedia as Data: DBpedia

- 2.9 million things
- > 282,000 persons
- 339,000 places
- 88,000 music albums
- 44,000 films
- 15,000 video games
- 119,000 organizations
- 130,000 species
- 4400 diseases.



About / News
Applications
Use Cases
Datasets
Online Access
Downloads
ChangeLog
Interlinking
Framework
Publications
Community
Blog
Credits
Contact / Imprint

DBpedia is a community effort to extract structured information from Wikipedia and to make this information available on the Web. DBpedia allows you to ask sophisticated queries against Wikipedia, and to link other data sets on the Web to Wikipedia data. We hope this will make it easier for the amazing amount of information in Wikipedia to be used in new and interesting ways, and that it might inspire new mechanisms for navigating, linking and improving the encyclopaedia itself.

News

[Open Knowledge Conference 2010](#)

OKCon, now in its fifth year, is the interdisciplinary conference that brings together individuals from across the open knowledge spectrum (such as also DBpedia in particular and Linked Open Data in general) for a day of presentations and workshops. Open knowledge promises significant social and economic benefits in a wide range of areas from governance [...]

[DBpedia in ReadWriteWeb's Top 10 Semantic Web Products of 2009](#)

The new year is slowly approaching and people start compiling their top x lists of 2009, with x usually ranging between 10 and 365. The popular Web technology blog ReadWriteWeb has chosen x with value 10 and picked DBpedia as one of their top Semantic Web products of 2009. Its actually the only non-commercial [...]

[German government proclaims Faceted Wikipedia/DBpedia Search one of the 365 most innovative ideas in Germany](#)

The German federal government has proclaimed Faceted Wikipedia Search as one of the 365 most innovative ideas in Germany in the context of the Deutschland ? Land der Ideen competition. The competition showcases innovative ideas in areas such as science and technology, business, education, art and ecology. The patron of the competition is the German President Horst Köhler. Faceted [...]

The DBpedia Knowledge Base

Knowledge bases are playing an increasingly important role in enhancing the intelligence of Web and enterprise search and in supporting information integration. Today, most knowledge bases cover only specific domains, are created by relatively small groups of knowledge engineers, and are very cost intensive to keep up-to-date as domains change. At the same time, Wikipedia has grown into one of the central knowledge sources of mankind, maintained by thousands of contributors. The DBpedia project leverages this gigantic source of knowledge by extracting structured information from Wikipedia and by making this information accessible on the Web under the terms of the [Creative Commons Attribution-ShareAlike 3.0 License](#) and the [GNU Free Documentation License](#).

SPARQL

- A data access language for the Web
- Queries across diverse data sources
- SPARQL contains capabilities for querying required and optional patterns

The screenshot shows a web browser window titled "Virtuoso SPARQL Query Form". The address bar shows "http://dbpedia.org/sparql". The page has a blue header with the text "OpenLink Virtuoso SPARQL Query". Below the header, there is a paragraph of text: "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](#)." Below this text is a form with a "Query" section. It includes a "Default Graph URI" field with "http://dbpedia.org" entered. Below that is a dropdown menu with "Use only local data (including data retrieved before), but do not retrieve more" selected. The "Query text" field contains the SPARQL query: "select distinct ?URI where {?URI skos:subject <http://dbpedia.org/resource/Category:Iron_Age_Europe> .} limit 50". At the bottom of the form, there is a "Display Results As:" dropdown with "HTML" selected, a checkbox for "Rigorous check of the query" which is checked, and a text input field. Below these are two buttons: "Run Query" and "Reset". At the very bottom of the page, there is a small line of text: "OpenLink Virtuoso version 06.01.3127, on Linux (x86_64-generic-linux-glibc25-64), Cluster Edition (4 server processes)".

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

```
select distinct ?URI where {?URI skos:subject <http://dbpedia.org/resource/Category:Iron_Age_Europe> .} limit 50
```

Display Results As: HTML Rigorous check of the query

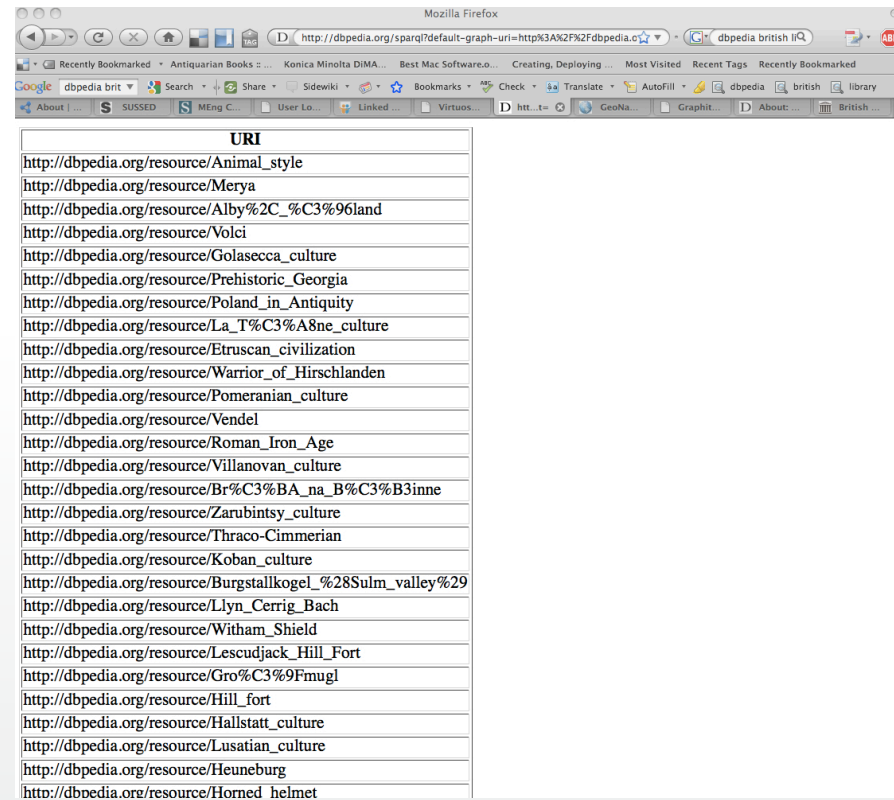
Execution timeout, in milliseconds, values less than 1000 are ignored

Run Query Reset

OpenLink Virtuoso version 06.01.3127, on Linux (x86_64-generic-linux-glibc25-64), Cluster Edition (4 server processes)

SPARQL

- A data access language for the Web
- Queries across diverse data sources
- SPARQL contains capabilities for querying required and optional patterns



| URI |
|---|
| http://dbpedia.org/resource/Animal_style |
| http://dbpedia.org/resource/Merya |
| http://dbpedia.org/resource/Alby%2C_%C3%96land |
| http://dbpedia.org/resource/Volci |
| http://dbpedia.org/resource/Golasecca_culture |
| http://dbpedia.org/resource/Prehistoric_Georgia |
| http://dbpedia.org/resource/Poland_in_Antiquity |
| http://dbpedia.org/resource/La_T%C3%A8ne_culture |
| http://dbpedia.org/resource/Etruscan_civilization |
| http://dbpedia.org/resource/Warrior_of_Hirschlanden |
| http://dbpedia.org/resource/Pomeranian_culture |
| http://dbpedia.org/resource/Vendel |
| http://dbpedia.org/resource/Roman_Iron_Age |
| http://dbpedia.org/resource/Villanovan_culture |
| http://dbpedia.org/resource/Br%C3%BAna_B%C3%B3inne |
| http://dbpedia.org/resource/Zarubintsy_culture |
| http://dbpedia.org/resource/Thraco-Cimmerian |
| http://dbpedia.org/resource/Koban_culture |
| http://dbpedia.org/resource/Burgstallkogel_%28Sulm_valley%29 |
| http://dbpedia.org/resource/Llyn_Cerrig_Bach |
| http://dbpedia.org/resource/Witham_Shield |
| http://dbpedia.org/resource/Lescudjack_Hill_Fort |
| http://dbpedia.org/resource/Gro%C3%9Fmugl |
| http://dbpedia.org/resource/Hill_fort |
| http://dbpedia.org/resource/Hallstatt_culture |
| http://dbpedia.org/resource/Lusatian_culture |
| http://dbpedia.org/resource/Heuneburg |
| http://dbpedia.org/resource/Horned_helmet |

SPARQL

- A data access language for the Web
- Queries across diverse data sources
- SPARQL contains capabilities for querying required and optional patterns

Browser window showing the DBpedia page for **Thracio-Cimmerian**.

URL: <http://dbpedia.org/page/Thracio-Cimmerian>

About: Thracio-Cimmerian
An Entity of Type : [culture](#), from Named Graph : [http://dbpedia.org](#), within Data Space : [dbpedia.org](#)

Thracio-Cimmerian is a historiographical and archaeological term, composed of the names of the Thracians and the Cimmerians. It refers to 8th to 7th century BC cultures that are linked in Eastern Central Europe and in the area north of the Black Sea.

| Property | Value |
|---|---|
| dbpedia:owl:abstract | <ul style="list-style-type: none">Thracio-Cimmerian is a historiographical and archaeological term, composed of the names of the Thracians and the Cimmerians. It refers to 8th to 7th century BC cultures that are linked in Eastern Central Europe and in the area north of the Black Sea. Cimmerians are known from historical records to have invaded Anatolia around this period, while the Thracians are mentioned as far back as the Iliad and Odyssey, where they participate in the Trojan War; Thracologists and archaeologists generally trace back the Thracians to the Balkan/Carpatho-Danubian Chalcolithic period (Hoddinott et al.). It is sometimes assumed that the migration of the Cimmerians was triggered by an Iranian expansion, from the area of the former Sarmatian culture, into the steppes of what is now the Ukraine. Virtually nothing is known about the Cimmerian language, but they are usually speculated to belong to the Satem group on the basis of royal names such as Sandrakshata. The Thracian language is poorly attested, but available vocabulary suggests a Satem branch, though theories of a Thracian-Iranian branch have been all but discarded, and no close link between Thracian and Iranian has been demonstrated. The Sarmatians, reported by classical authors as a tribe of the Black Sea steppes related to the Medes, may have invaded the area about the time of the Cimmerian expansion. Archaeologically, Thracio-Cimmerian artifacts are metal (usually bronze) items, particularly parts of horse tacks, found in a late Urnfield context, but without local Urnfield predecessors for their type. They appear rather to spread from the Koban culture of the Caucasus and northern Georgia, which together with the Sarmatian culture, blends into the 8th to 7th centuries pre-Sarmatian Chernogorovka and Novocherkassk cultures, and by the 7th century, Thracio-Cimmerian objects are spread further west over most of Eastern and Central Europe, locations of finds reaching to Denmark and eastern Prussia in the north and to Lake Zürich in the west. Together with these bronze artifacts, earliest iron items appear, ushering in the European Iron Age, corresponding to the Proto-Celtic expansion from the Hallstatt culture. The artifacts labelled Thracio-Cimmerian all belong to a category of upper class, luxury objects, like weapons, horse tacks and jewelry, and they are recovered only from a small percentage of graves of the period. From this it is assumed that the Thracio-Cimmerian migration did not consist of large populations, but rather of relatively small groups who installed themselves as ruling class over the indigenous Urnfield/Hallstatt population. |
| dbpedia:owl:thumbnail | <ul style="list-style-type: none">http://upload.wikimedia.org/wikipedia/en/thumb/7/75/Thracio-Cimmerian.png/200px-Thracio-Cimmerian.png |
| dbprop:hasPhotoCollection | <ul style="list-style-type: none">http://www4.wiwi.fu-berlin.de/flickrwrapp/photos/Thracio-Cimmerian |
| dbprop:reference | <ul style="list-style-type: none">http://apar.archaeology.ro/ids_artja.htmhttp://apar.archaeology.ro/ids_artjaeng.htmhttp://www.kimmerer.de/kap02100.htm |
| rdf:type | <ul style="list-style-type: none">yago:ArchaeologicalCultures |
| rdfs:comment | <ul style="list-style-type: none">Thracio-Cimmerian is a historiographical and archaeological term, composed of the names of the Thracians and the Cimmerians. It refers to 8th to 7th century BC cultures that are linked in Eastern Central Europe and in the area north of the Black Sea. |
| rdfs:label | <ul style="list-style-type: none">Thracio-Cimmerian |
| owl:sameAs | <ul style="list-style-type: none">ibase:Thracio-Cimmerian |
| skos:subject | <ul style="list-style-type: none">category:Iron_Age_Europecategory:Indo-Europeancategory:Iron_Age_Anatoliacategory:Archaeological_culturescategory:Ancient_Thrace |
| foaf:depiction | <ul style="list-style-type: none">http://upload.wikimedia.org/wikipedia/en/7/75/Thracio-Cimmerian.png |
| foaf:page | <ul style="list-style-type: none">http://en.wikipedia.org/wiki/Thracio-Cimmerian |
| is dbprop:redirect of | <ul style="list-style-type: none">dbpedia:Thracio-Cimmerians |
| is owl:sameAs of | <ul style="list-style-type: none">yago-res:Thracio-Cimmerian |
| is foaf:primaryTopic of | <ul style="list-style-type: none">http://en.wikipedia.org/wiki/Thracio-Cimmerian |

Wikipedia as a searchable KB

Virtuoso SPARQL Query Form

http://dbpedia.org/sparql

OpenLink Virtuoso SPARQL Query Form

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: [dsparql](#).

Query

Default Graph URI
http://dbpedia.org

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

Query text

```
SELECT DISTINCT ?concept
WHERE {
  ?s a ?concept .
}
LIMIT 50
```

Display Results As: HTML ☐ ☒ Rigorous check of the query Execution timeout, in milliseconds, values less than 1000 are ignored

Run Query Reset

http://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org%2F+pt+%0D%0A%2D+LIMIT+50%0D%0A&format=text%2Fhtml&debug=on&timeout=

http://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&should-sponge=&query=SELECT

| concept |
|---|
| http://www.w3.org/2002/07/owl#Thing |
| http://www.w3.org/2002/07/owl#Class |
| http://xmlns.com/foaf/0.1/Person |
| http://dbpedia.org/ontology/Place |
| http://dbpedia.org/ontology/Area |
| http://dbpedia.org/ontology/City |
| http://dbpedia.org/ontology/River |
| http://dbpedia.org/ontology/Canal |
| http://dbpedia.org/ontology/Road |
| http://dbpedia.org/ontology/Lake |
| http://dbpedia.org/ontology/LunarCrater |
| http://dbpedia.org/ontology/ShoppingMall |
| http://dbpedia.org/ontology/Park |
| http://dbpedia.org/ontology/SiteOfSpecialScientificInterest |
| http://dbpedia.org/ontology/Cave |
| http://dbpedia.org/ontology/Band |
| http://dbpedia.org/ontology/Actor |
| http://dbpedia.org/ontology/IceHockeyPlayer |
| http://dbpedia.org/ontology/RadioStation |
| http://dbpedia.org/ontology/Saint |
| http://dbpedia.org/ontology/FigureSkater |
| http://dbpedia.org/ontology/Boxer |
| http://dbpedia.org/ontology/PlayboyPlaymate |
| http://dbpedia.org/ontology/Philosopher |
| http://dbpedia.org/ontology/NascarDriver |
| http://dbpedia.org/ontology/PokerPlayer |
| http://dbpedia.org/ontology/Model |
| http://dbpedia.org/ontology/Pope |
| http://dbpedia.org/ontology/FictionalCharacter |
| http://dbpedia.org/ontology/Non-ProfitOrganisation |
| http://dbpedia.org/ontology/Legislature |
| http://dbpedia.org/ontology/Work |
| http://dbpedia.org/ontology/Album |
| http://dbpedia.org/ontology/Song |
| http://dbpedia.org/ontology/Film |

Wikipedia as a searchable KB

About: Ice Hockey Player

An Entity in Data Space: dbpedia.org

| Property | Value |
|---------------------------------|--|
| rdf:type | <ul style="list-style-type: none"> owl:Class |
| rdfs:label | <ul style="list-style-type: none"> Ice Hockey Player |
| rdfs:subClassOf | <ul style="list-style-type: none"> dbpedia-owl:Athlete |
| owl:sameAs | <ul style="list-style-type: none"> http://sw.opencyc.org/concept/Mx4rvVJL0JwpEbGdrcN5Y29ycA |
| is first of | <ul style="list-style-type: none"> nodeID://b29404 nodeID://b29407 nodeID://b29411 nodeID://b29414 |
| is rdf:type of | <ul style="list-style-type: none"> dbpedia:Bobby_Orr dbpedia:Brett_Hull dbpedia:Pavel_Bure dbpedia:Chris_Simon dbpedia:Ed_Belfour dbpedia:Guy_Hebert dbpedia:Jan_Kurr dbpedia:Jaromír_Jágr dbpedia:Keith_Tkachuk dbpedia:Martin_Brodeur dbpedia:Matti_Hagman dbpedia:Adam_Mair dbpedia:Adam_Foote dbpedia:Adam_Hall dbpedia:Alexander_Mogilny dbpedia:Aleš_Hemský dbpedia:Antero_Nittymäki dbpedia:Brian_Pothier dbpedia:Börje_Salming dbpedia:Chris_Drury dbpedia:Craig_Adams_(ice_hockey) dbpedia:David_Booth_(ice_hockey) dbpedia:David_Výborný dbpedia:Derian_Hatcher dbpedia:Erik_Cole dbpedia:Filip_Kuba dbpedia:František_Kaberle dbpedia:František_Cerník dbpedia:Fredrik_Modin dbpedia:Glen_Sather dbpedia:Gordie_Howe dbpedia:Gus_Adams dbpedia:Ivan_Huml dbpedia:Jan_Bulís dbpedia:Jan_Hejda dbpedia:Jan_Hrdina dbpedia:Jan_Marek dbpedia:Jan_Novák_(ice_hockey) dbpedia:Jan_Suchý dbpedia:Jaroslav_Balaščík dbpedia:Jaroslav_Hlinka |

About: Bobby Hull

An Entity in Data Space: dbpedia.org

Robert Marvin "Bobby" Hull OC (born January 3, 1939) is a retired Canadian ice hockey player. He is regarded as one of the greatest ice hockey players of all time and perhaps the greatest left winger to ever play the game. Hull was famous for his blonde hair, blinding skating speed, and having the fastest shot, earning him the nickname "the Golden Jet". He possessed the most feared slapshot of his day.

| Property | Value |
|---|--|
| dbpedia-owl:Athlete/currentPosition | <ul style="list-style-type: none"> Left wing |
| dbpedia-owl:Athlete/formerTeam | <ul style="list-style-type: none"> dbpedia:World_Hockey_Association dbpedia:Chicago_Blackhawks dbpedia:Winnipeg_Jets dbpedia:National_Hockey_League dbpedia:Hartford_Whalers |
| dbpedia-owl:IceHockeyPlayer/hallOfFame | <ul style="list-style-type: none"> 1983 |
| dbpedia-owl:IceHockeyPlayer/shoots | <ul style="list-style-type: none"> Left |
| dbpedia-owl:Person/activeYearsEndDate | <ul style="list-style-type: none"> 1980-01-01 00:00:00 (xsd:date) |
| dbpedia-owl:Person/activeYearsStartDate | <ul style="list-style-type: none"> 1957-01-01 00:00:00 (xsd:date) |
| dbpedia-owl:Person/birthDate | <ul style="list-style-type: none"> 1939-01-03 (xsd:date) |
| dbpedia-owl:Person/birthPlace | <ul style="list-style-type: none"> dbpedia:Belleville,_Ontario dbpedia:Canada dbpedia:Ontario |
| dbpedia-owl:Person/height | <ul style="list-style-type: none"> 152.4000 |
| dbpedia-owl:Person/weight | <ul style="list-style-type: none"> 94.3488 |
| dbpedia-owl:activeYearsEndDate | <ul style="list-style-type: none"> 1980-01-01 00:00:00 (xsd:date) |
| dbpedia-owl:activeYearsStartDate | <ul style="list-style-type: none"> 1957-01-01 00:00:00 (xsd:date) |
| dbpedia-owl:birthDate | <ul style="list-style-type: none"> 1939-01-03 (xsd:date) |
| dbpedia-owl:birthPlace | <ul style="list-style-type: none"> dbpedia:Belleville,_Ontario dbpedia:Canada dbpedia:Ontario |
| dbpedia-owl:currentPosition | <ul style="list-style-type: none"> Left wing |
| dbpedia-owl:formerTeam | <ul style="list-style-type: none"> dbpedia:World_Hockey_Association dbpedia:Chicago_Blackhawks dbpedia:Winnipeg_Jets dbpedia:National_Hockey_League dbpedia:Hartford_Whalers |
| dbpedia-owl:hallOfFame | <ul style="list-style-type: none"> 1983 |
| dbpedia-owl:height | <ul style="list-style-type: none"> 152.4000 |
| dbpedia-owl:shoots | <ul style="list-style-type: none"> Left |
| dbpedia-owl:thumbnail | <ul style="list-style-type: none"> http://upload.wikimedia.org/wikipedia/commons/thumb/c/ca/Bobby_Hull.jpg/200px-Bobby_Hull.jpg |
| dbpedia-owl:weight | <ul style="list-style-type: none"> 94.3488 |
| dbprop:abstract | <ul style="list-style-type: none"> Robert Marvin "Bobby" Hull ist ein ehemaliger kanadischer Eishockeyspieler, der von 1957 bis 1980 für die Chicago Black Hawks, Winnipeg Jets und Hartford Whalers in der National Hockey League und ebenfalls für die Winnipeg Jets in der World Hockey Association spielte. Robert Marvin "Bobby" Hull OC (born January 3, 1939) is a retired Canadian ice hockey player. He is regarded as one of the greatest ice hockey players of all time and perhaps the greatest left winger to ever play the game. Hull was famous for his blonde hair, blinding skating speed, and having the fastest shot, earning him the nickname "the Golden Jet". He possessed the most feared slapshot of his day. In his 23 years in the National Hockey League and World Hockey Association, he played for the Chicago Black Hawks, Winnipeg Jets and Hartford Whalers. |

Wikipedia as a searchable KB

The screenshot shows the OpenLink Virtuoso SPARQL Query Form interface. The browser address bar displays the URL: `http://dbpedia.org/sparql`. The page title is "OpenLink Virtuoso SPARQL Query Form".

Below the title, there is a text area for the query. The query text is as follows:

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX type: <http://dbpedia.org/class/yago/>
PREFIX prop: <http://dbpedia.org/property/>
SELECT ?country_name ?population
WHERE {
  ?country a type:LandlockedCountries ;
    rdfs:label ?country_name ;
    prop:populationEstimate ?population .
  FILTER (?population > 15000000) .
}
```

Below the query text, there are options for "Display Results As:" (HTML) and a checkbox for "Rigorous check of the query". There are also buttons for "Run Query" and "Reset".

On the right side of the interface, a table displays the results of the query:

| country_name | population |
|--------------|------------|
| Ethiopia | 82825000 |
| Uganda | 32710000 |
| Nepal | 29331000 |
| Afghanistan | 28150000 |
| Uzbekistan | 27606007 |
| Burkina Faso | 15757000 |
| Niger | 15290000 |
| Malawi | 15263000 |

Wikipedia as a searchable KB

- A data access language for the Web
- Queries across diverse data sources
- SPARQL contains capabilities for querying required and optional patterns

The screenshot shows a web browser window with the URL `http://dbpedia.org/sparql/?query=PREFIX+dbo%3A+<http%3A%2F%2Fdbpedia.org%2F>`. The page title is "SPARQL Explorer for http://dbpedia.org/sparql".

SPARQL:

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfa: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX doi: <http://purl.org/dc/elements/1.1/>
PREFIX : <http://dbpedia.org/resource/>
PREFIX dbpedia2: <http://dbpedia.org/property/>
PREFIX dbpedia: <http://dbpedia.org/>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX dbo: <http://dbpedia.org/ontology/>

SELECT ?name ?birth ?death ?person WHERE {
  ?person dbpedia2:birthPlace <http://dbpedia.org/resource/London> .
  ?person dbo:birthDate ?birth .
  ?person foaf:name ?name .
  ?person dbo:deathDate ?death
  FILTER (?birth < "1800-01-01"^^xsd:date) .
}

ORDER BY ?name
```

Results:

SPARQL results:

| name | birth | death | person |
|--|--|--|---|
| " small>Countess of Chatham " | "1720-11-08"^^xsd:date | "1803-04-09"^^xsd:date | :Hester_Pitt%2C_Countess_of_Chatham |
| "Aaron Hart" | "1724-08-16"^^xsd:date | "1800-12-28"^^xsd:date | :Aaron_Hart_%28businessman%29 |
| "Alexander Pope" | "1688-05-21"^^xsd:date | "1744-05-30"^^xsd:date | :Alexander_Pope |
| "Alexander Schomberg" | "1720-01-01T00:00:00-05:00"^^xsd:gYear | "1804-01-01T00:00:00-05:00"^^xsd:gYear | :Alexander_Schomberg |
| "Anne Killigrew" | "1660-01-01T00:00:00-05:00"^^xsd:gYear | "1685-06-16"^^xsd:date | :Anne_Killigrew |
| "Aubrey George Spencer" | "1795-02-12"^^xsd:date | "1872-02-24"^^xsd:date | :Aubrey_George_Spencer |
| "Ben Jonson" | "1572-06-11"^^xsd:date | "1637-08-06"^^xsd:date | :Ben_Jonson |
| "Benjamin Aislable" | "1774-01-01T00:00:00-05:00"^^xsd:gYear | "2" | :Benjamin_Aislable |
| "Benjamin Aislable" | "1774-01-01T00:00:00-05:00"^^xsd:gYear | "6" | :Benjamin_Aislable |
| "Benjamin Aislable" | "1774-01-01T00:00:00-05:00"^^xsd:gYear | "1842-01-01T00:00:00-05:00"^^xsd:gYear | :Benjamin_Aislable |
| "Benjamin Aislable" | "1784-03-18"^^xsd:date | "1809-01-01T00:00:00-05:00"^^xsd:gYear | :Benjamin_Bathurst_%28diomat%29 |

Find: ☒ Match case ☐ Phrase not found

Linked Data at Scale

Public Sector Information

MPDP

Making Public Data Public

- Berners-Lee and Shadbolt
- HMG Information Advisors
- Context - Pol Taskforce
- Previous work with OPSI
- Strategic Drivers
 - Transparency and accountability
 - Economic and Social Value
 - Public Service Improvement
 - New Industries New Jobs



The Power of Public Data



**Cholera
cases**



**Bicycling traffic
accidents**

Key Elements of our ToR

1. Establish single point of access for all public UK datasets - data.gov.uk
2. Specific proposals to implement and extend to wider public sector PSI principle
 - Select and implement common standards for release of public data
 - Select, develop and implement common terms for data where necessary
 - Develop licenses - CC variants

Accomplishments

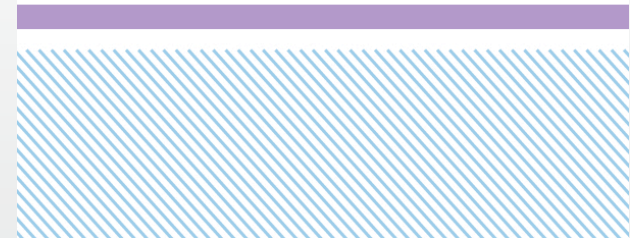
- Embodied Public Data Principles in Government
- Beta service launched data.gov.uk - Jan 2010
 - Currently >3200 datasets including linked data
 - 2500 developer community
 - Open source and open standards
 - Self describing Catalogue
- Key data sets released and applications emerging
- New Crown Commons data licence
- Local Data Panel

UK Public Data Principles

1. Public data will be published in reusable, machine readable form
2. Public data will be available and easy to find through a single easy to use online access point data.gov.uk
3. Public data will be published using open standards and following the recommendations of the World Wide Web Consortium
4. Any 'raw' dataset will be represented in linked data form
5. More public data will be released under an open licence which enables free reuse, including commercial reuse
6. Data underlying the Government's own websites will be published in reusable form for others to use
7. Personal, classified, commercially sensitive and third-party data will continue to be protected.




**PUTTING THE
FRONTLINE FIRST:**
smarter government



Coalition Government's Commitment

- Prime Minister's letter on to Ministers on Transparency and Open Data
- Established Public Sector Transparency Board under Francis Maude – members including Tom Steinberg, Tim Berners-lee and Nigel Shadbolt
- creating a powerful new right to government data, enabling the public to request and receive government datasets
- publishing data in open and standardised formats
- transforming the culture of the public sector from one that presumes secrecy to one that presumes datasets should be open and shared with the public on an ongoing basis.
- bringing in new measures to enable to public to scrutinise the government's accounts
- requiring public bodies to publish online job titles, salaries and expenses of senior staff
- publishing in full government contracts for good and services worth over £25,000
- making the performance of the NHS transparent by publishing information about the results that healthcare providers are achieving.
- applying these transparency principles to local government

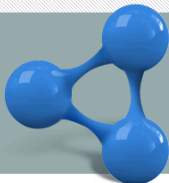
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Home Blog Data SPARQL Apps Ideas Forum Wiki Resources About

Unlocking innovation
Working with UK Public
Sector information and data



Advised by Sir Tim Berners-Lee and Professor Nigel Shadbolt and others, government is opening up data for reuse. This site seeks to give a way into the wealth of government data and is under constant development. We want to work with you to make it better.

We're very aware that there are more people like you outside of government who have the skills and abilities to make wonderful things out of public data. These are our first steps in building a collaborative relationship with you.

Latest news:

- [Read about our latest site changes](#)
- [information about the Local Data Panel](#)
- [applications in the news](#)

Search Data

Enter keyword(s) **Search**

e.g. education, NHS, crime, transport, environment

Powered by: [CKAN](#)

Browse for Data


[List all datasets](#)


[By Public Body](#)


[Common tags](#)


Most Recent Apps

[View all apps](#) +

 **SaferMK**
This is a crime reduction application that has two key functions: 1. simple-
three interface


 **EnAKTing UK Public Sector Information Data Mashup**
Map application that using OpenSpace


 **OpenGeoscience**
Discover if you live on rocks from an extinct volcano, in the middle of an ancient river or deep under a

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Local Data Panel

 **What is the Semantic Web?**
Combining different data sources has never been easy but the Semantic Web will enable data to be joined easily across boundaries.
[Read more](#)

Digital Engagement Twitter stream
 RT
[@stephentimms](#):
#digitalbritain Announced in House today establishment of Broadband Delivery UK, chief executive Adrian Kamellard
[Follow us on Twitter](#)

Tell us your idea

data.gov.uk

 HM Government

data.gov.uk

Home Blog **Data** SPARQL Apps Ideas Forum Wiki Resources About

Home

Search Data Feeds

Your search returned 2879 records

2008 Injury Road Traffic Collisions in Northern Ireland

Name: 2008_injury_road_traffic_collisions_in_northern_ireland
Description: Calender Year statistics on Injury Road Traffic Collisions in Northern Ireland. Source agency: Police Service of Northern Ireland (PSNI) Designation...
Tags: injury-road-traffic-collisions health-well-being-and-care travel-and-transport transport-accidents-and-casualties safety roads road-safety casualties traffic road

Abandoned vehicles

Name: abandoned_vehicles_2003-04_to_2005-06
Description: Number of abandoned vehicles Source: Department for Environment Food and Rural Affairs (DEFRA): Municipal Waste Management Survey Publisher: DCLG FI...
Tags: waste

Abortions

Name: abortions_2003-05_2007
Description: The abortion rate is the number of abortions (NHS and private) per 1,000 women aged 11-49. Source: Department of Health (DoH) Publisher: Information...
Tags: health

Abortions Statistics

Name: abortions_statistics
Description: The Abortion update contains information on notifications, to the Chief Medical Officer for Scotland, of terminations of pregnancy under the Abortion ...
Tags: well-being-and-care specialist-health-services maternity-and-pregnancy-services scotland health health-and-social-care

Abortion Statistics

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Combining different data sources has never been easy but the Semantic Web will enable data to be joined easily across boundaries.

Read more

Digital Engagement Twitter stream

 RT @edent I've enjoyed testing data.gov.uk

data.gov.uk

The screenshot shows the data.gov.uk website interface. At the top, there is a header with the HM Government logo and the text 'data.gov.uk'. Below this is a navigation bar with links: Home, Blog, Data (highlighted), SPARQL, Apps, Ideas, Forum, Wiki, Resources, and About. A search bar is located to the right of the navigation bar.


The main content area is titled 'Browse Common tags' and lists various tags with their respective counts:

- accident (47)
- accommodation (25)
- alcohol (35)
- anti-social-behaviour (9)
- asylum (14)
- benefit (157)
- births (33)
- burglary (8)
- business (79)
- cancer (49)
- carbon-dioxide (1)
- care (450)
- census (198)
- child (410)
- child-protection (13)
- children (305)
- communities (161)
- crime (84)
- criminal-damage (2)
- deaths (73)
- disability (36)
- disease (16)
- drug (40)
- earnings (46)
- economic (71)
- education (185)
- electricity (17)
- emissions (25)
- employment (114)
- energy (47)
- ethnicity (43)
- export (38)
- finance (18)
- fire (32)
- fisheries (3)
- fishing (4)

The sidebar on the right contains several sections:

- Subscribe by RSS** with an RSS icon.
- SHARE** with social media icons for Twitter, Facebook, and LinkedIn.
- User login** section with fields for Username and Password, a Log In button, and a link to Request new password.
- What is the Semantic Web?** section with a brief explanation and a Read more button.
- Digital Engagement Twitter stream** section showing a tweet from @edent: 'RT @edent I've enjoyed testing data.gov.uk -'.

data.gov.uk

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Home Blog Data **SPARQL** Apps Ideas Forum Wiki Resources About

Home

SPARQL search

Enter your [SPARQL](#) query against a datasource

Datasources:
Analytics

Please select a datasource

Data format:
XML

Please select a data format

Enter your SPARQL query:

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
SELECT DISTINCT ?type
WHERE {
  ?thing a ?type
}
LIMIT 10
```

Submit

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 **What is the Semantic Web?**


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Home

Show us what you can do [Submit your app](#)

Subscribe by RSS

SHARE

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Applications – extracting information from data


Here you will find applications that others have already created and submitted. You can view, comment on and rate all published applications.


It would be great if you could submit your applications and mashups so they can be shared back with the community.

[Submit your app](#)


RECENT APPS [View all apps](#)

**Clear Books - Companies House Data**
An accounting software app that allows you to efficiently search and store data from over 2 million companies through the Companies House WebCheck service.
By Nick Braithwaite
21/01/2010 - 11:33


**Scottish Index of Multiple Deprivation**
Rich interactive map describing areas of concentrated deprivation across Scotland from 2009. Makes comparative use of previous data sets from 2006 and 2004.
By Dan Moss
21/01/2010 - 11:20

**mycounciltax.org.uk**
mycounciltax.org.uk is an unofficial mash-up, which was built using publicly available government information. mycounciltax.org.uk makes it easier to find out how much...
By Don Riden
21/01/2010 - 10:56

What is the Semantic Web?
Combining different data sources has never been easy but the Semantic Web will enable data to be joined easily across boundaries.
[Read more](#)

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Home

Wouldn't it be good if...? [Submit your idea](#)


Ideas – the seeds of innovation

Got a great idea you'd like to see realised?

Wouldn't it be good if, for example, you could see a map that showed all the local schools, alongside their performance ratings for instant comparison? You might not be able to create such a map but you know it would be useful. Submit your ideas here and the chances are high that someone with the know-how, who shares your interest, will pick up your suggestion.


[Submit your idea](#)

Most Recent Ideas [View all Ideas](#)

**County Court Judgement Data**

County Court Judgement data is a matter of public record, anyone willing to pay per search is welcome to the data.

By Phil
21/01/2010 - 11:32


**Fuel prices vs public transport provision by area**


It would be useful to see how the cost of fuel affects people in rural or remote areas where public transport may not be as prevalent or useful as in urban areas.




Showing...

By Lauro
21/01/2010 - 11:24

Do you have a great idea?



Subscribe by RSS 

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Password: *

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Combining different data sources has never been easy but the Semantic Web will enable data to be joined easily across boundaries.

[Read more](#)

Digital Engagement Twitter stream

 RT @edent I've enjoyed testing data.gov.uk -

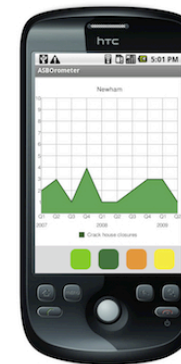
ASBOrometer



ASBOrometer is a mobile application that measures levels of anti-social behaviour at your current location (within England and Wales) and gives you access to key local ASB statistics.

ASBOrometer is available for iPhone and Android phones. Get it FREE from the iTunes App Store or Android Market now!

This app was created by [Jeff Gilfelt](#) and made possible by the [data.gov.uk](#) initiative, which is opening up UK government data for public reuse.



Put the data out applications will come

Home

News

Apps

Find GPs

Find
Pharmacies

Find Postboxes

Find Pubs

Find Toilets

SF Trees

UK Dentists

Support

Contact



UK Dentists



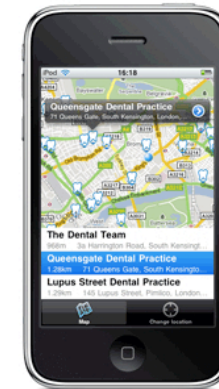
Find your nearest NHS dentist quickly and easily!

The National Health Service has over 7,500 dental surgeries across England but finding one can be a difficult and time consuming task. This app is based on data provided by the UK's Health and Social Care Information Centre (HSCIC)* and covers 99.4% of all registered NHS dental surgeries in England.

Search for an NHS dentist around your current location, or look for one in another area (where you may be moving to, or for a friend) via a simple place name or postcode search. Distances can be displayed in metric or imperial units (configured in the application preferences).

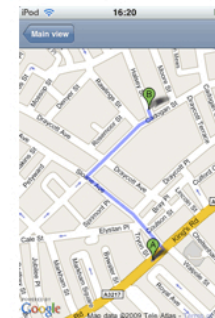
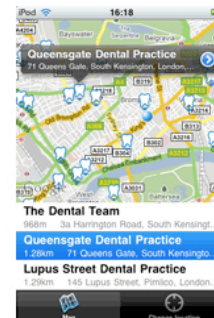
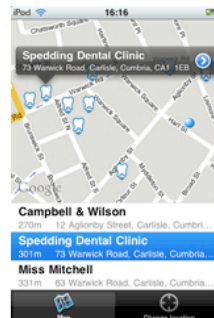
UK Dentists uses the built in GPS on the iPhone to get your current location, but can also locate an iPod Touch in built-up WiFi areas. If your location cannot be determined automatically then you can always enter your post code to get started. Please note that an internet connection is required to get location and map data.

* Data reproduced under the terms of the Office of Public Sector Information (OPSI) Click-Use Licence.



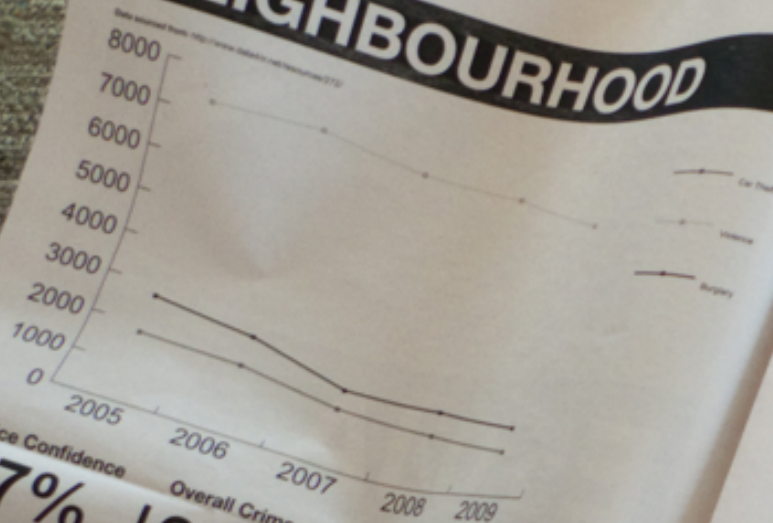
Application Screenshots

Click on any of the images to see a larger version



Buy on iTunes

NEIGHBOURHOOD



Police Confidence
77%

Overall Crime
↓39%

Gun Crime
↓37%

Knife Crime
↓17%

Robbery
↓14%

Theft
↓13%

Woundings
↑220%

10000
fewer crime victims

Summary

Hackney Police and the Council work very closely to tackle and prevent crime in the borough. Seventy seven per cent of residents now have confidence in Hackney's Police, according to the British Crime Survey, a rise of 55 per cent in less than two years.

The survey also reveals that crime in Hackney has dropped 36.5 per cent over five years, the second largest drop of all London boroughs. Last year, there were ten thousand fewer victims of crime in Hackney than five years ago.

In 2008/09, gun crime was reduced by over 37 per cent and knife crime by 17 per cent. Youth crime also fell by 10 per cent. Satisfaction with the Police and the Fire Brigade are six per cent above the London average.

-- Hackney Council

ALLOTMENTS

- 1 St John's Road
Entrance at rear of 57 St John's Road
- 2 Asher Terrace
Entrance at North end of Clarendon Crescent
- 3 Springdale Road
Entrance between 40 and 44 Springdale Road
- 4 Church Walk
Entrance at South end of Church Walk
- 5 Queensbridge Road
At rear of 208 Queensbridge Road
- 6 Manor Gardens
Station Road
- 7 Queensbury Street
Corner of Queensbury Street and Russell Road
- 8 Leaside Road
Entrance at West side of railway bridge over Leaside Road
- 9 Spring Lane
Entrance on Spring Lane at side of River Lea
- 10 Spring Hill
North West corner of sports field



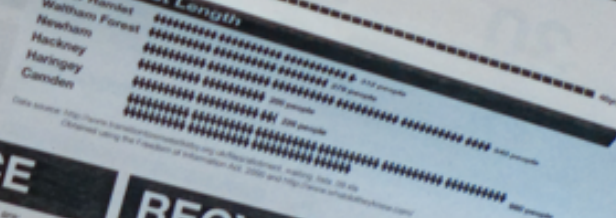
Allotment Plots

| | | | |
|--------------|-------|----------------|-------|
| Tower Hamlet | 282 | Waltham Forest | 1,382 |
| Newham | 415 | Hackney | 113 |
| Haringey | 1,715 | Camden | 195 |

Waiting List Time

| | |
|----------------|--------------|
| Tower Hamlet | 18 1/2 years |
| Waltham Forest | 18 1/2 years |
| Newham | 18 1/2 years |
| Hackney | 18 1/2 years |
| Haringey | 18 1/2 years |
| Camden | 18 1/2 years |

Waiting List Length



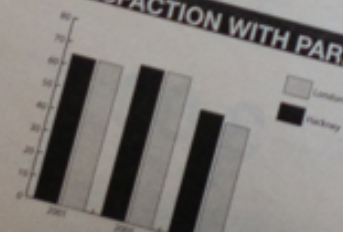
GREEN SPACE

23%
by land area in Hackney

Your nearest parks are:

- Hackney Marshes (10 mins east)
- Victoria Park (15 mins south west)
- London Fields (20 mins south west)

% SATISFACTION WITH PARKS



RECYCLING

Your nearest Recycling and Reuse Center is on South Access Road, Walthamstow, E17 (via Marsh House Avenue, near Low Hall Manor Business Centre).

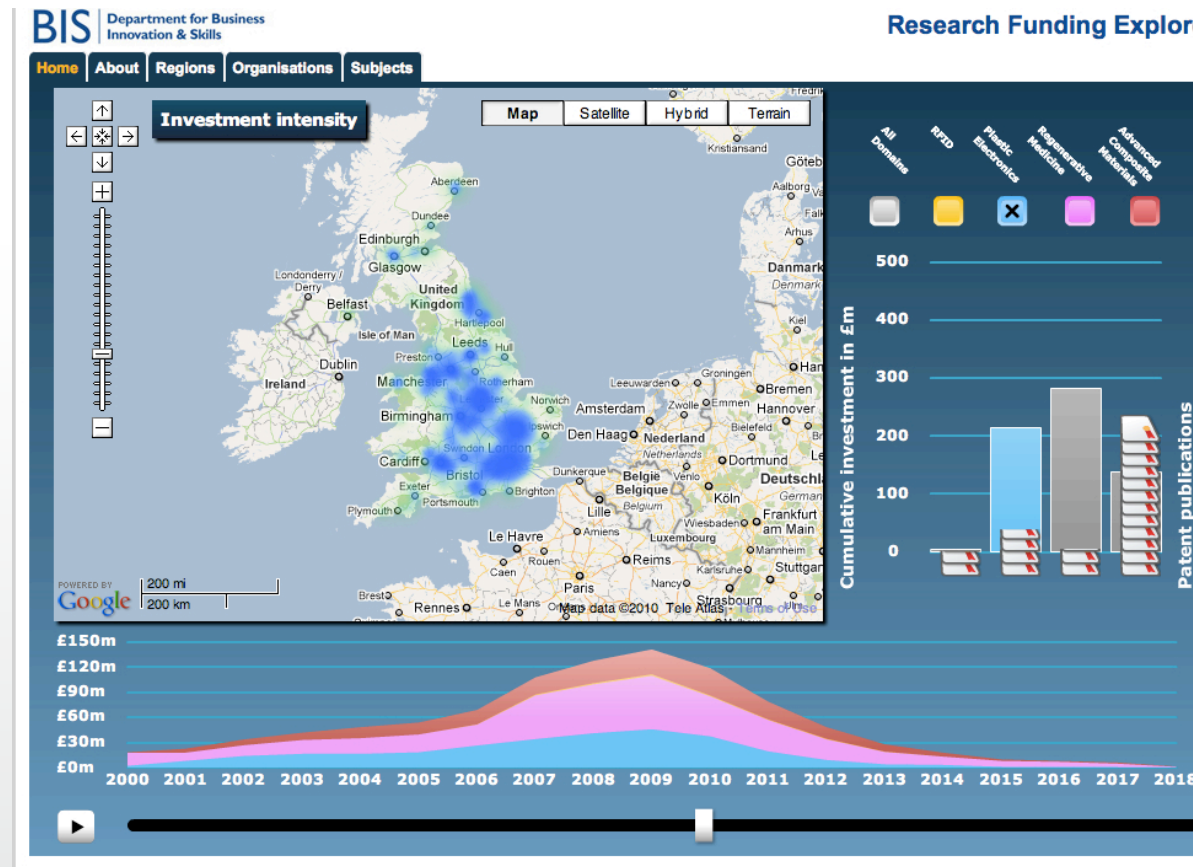
Open every day of the year, except on 25 December, 26 December and 1 January. Open from 8.30am to 5.15pm. South Access Road is for most, bulky household waste and trade waste. This site does not accept:

If you intend to use a van to bring your waste please call 020 8509 3664 at least 24 hours prior to visiting the site. Vans are only allowed to the site between 8.30am and 4pm Monday to Saturday.

You can recycle the following items at this site:


- Bicycles
- Car batteries
- Cardboard
- Computers and printers
- Cooking oil
- Electrical items
- Engine oil
- Food/drink cans and foil
- Furniture in good condition
- Garden waste
- Gas bottles
- Glass bottles and jars
- Hardcore/rubble
- Household batteries
- Long life light bulbs
- Metal
- Mobile telephones
- Paper
- Plasterboard
- Plastic bottles
- Pneumatic paint
- Tetra packs
- Textiles and shoes
- Tools for reuse

Linked data at data.gov.uk



Linked data at data.gov.uk

Ordinance Survey – Great Britain's national mapping agency See all our sites [Login](#)

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Burghclere, Highclere and St. Mary Bourne

A description of the resource identified by <http://data.ordnancesurvey.co.uk/id/7000000000017789>

| | |
|--------------------|---|
| Label | Burghclere, Highclere and St. Mary Bourne |
| Name | Burghclere, Highclere and St. Mary Bourne |
| Type | District Ward |
| Area | 11445.724 |
| Area code | DIW |
| Census code | 24UBKE |
| Unit i d | 17789 |
| Borders | Harewood Bourne Valley Kingsclere Overton, Laverstoke and Steventon Alamein Greenham St. Mary's Whitchurch Falkland East Woodhay Kintbury |
| Contains | Litchfield and Woodcott St. Mary Bourne Ecchinswell, Sydmonton and Bishops Green Burghclere Highclere Ashmansworth Newtown |

The data for this description was obtained from the SPARQL service at <http://api.talis.com/stores/ordnance-survey/services/sparql>. This data is also available as: [RDF/XML](#), [Turtle](#) and [JSON](#). A free text search service is available at <http://api.talis.com/stores/ordnance-survey/items>

View this data using these other browsers:

- [Marbles](#)
- [Zitgist Data Viewer](#)
- [Disco](#)
- [Dipper](#)
- [OpenLink Data Explorer](#)

[Top of page](#)

Ordinance Survey is Great Britain's national mapping agency, providing the most accurate and up-to-date geographic data, relied on by government, business and individuals.

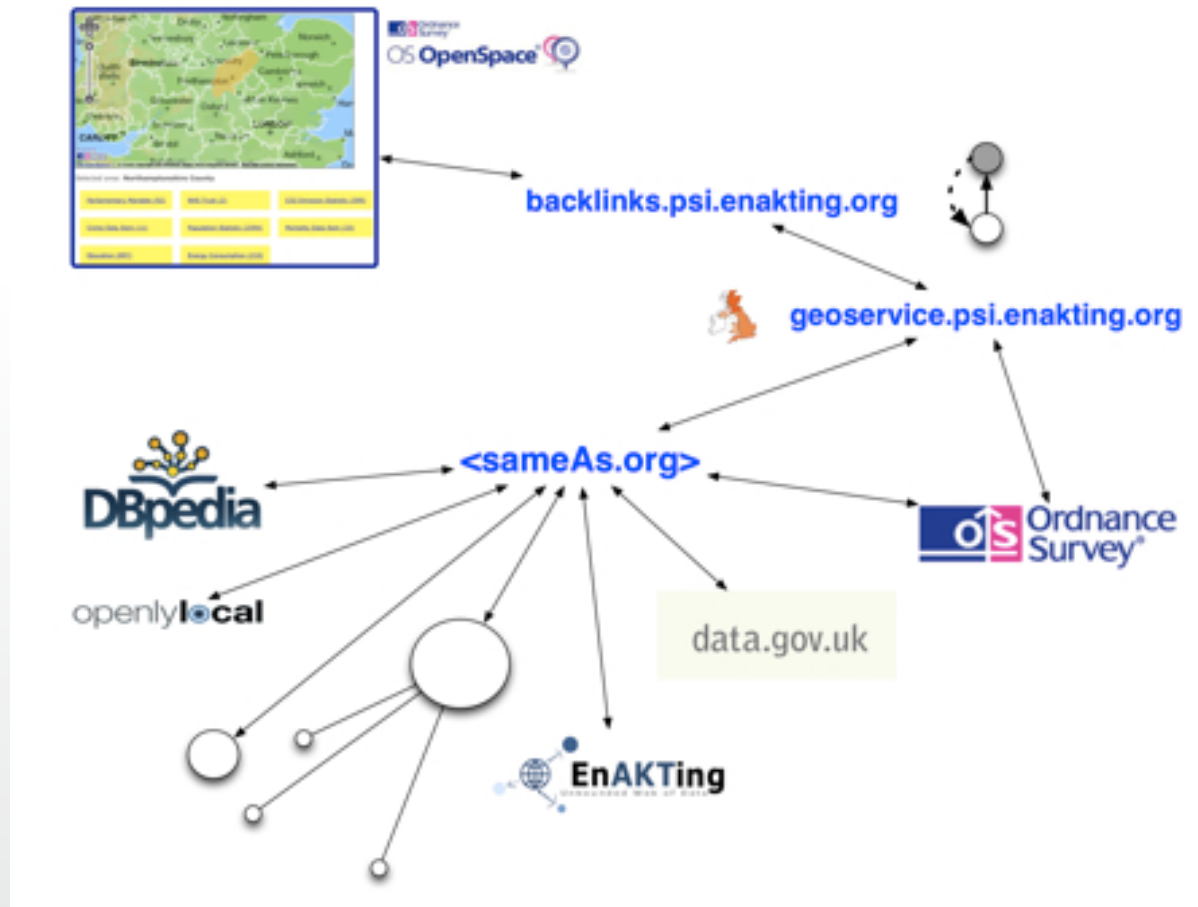
Ordinance Survey © Crown copyright 2009
[Jobs](#) | [Help](#) | [Accessibility](#) | [Contact Us](#) | [Sitemap](#) | [Legal & Privacy](#)

Linked data at data.gov.uk

▼ <http://data.ordnancesurvey.co.uk/doc/7000000000017789.rdf>

| | | |
|---|-------------|---|
| Litchfield and Woodcott | label | Litchfield and Woodcott |
| Burghclere, Highclere and St. Mary Bourne | Area | 11445.724 |
| | Area Code | DIW |
| | Census Code | 24UBKE |
| | Unit ID | 17789 |
| | borders | Greenham |
| | | Falkland |
| | | Kintbury |
| | | Overton, Laverstoke and Steventon |
| | | Harewood |
| | | St. Mary's |
| | | Whitchurch |
| | | Kingsclere |
| | | East Woodhay |
| | | Bourne Valley |
| | | Alamein |
| | contains | St. Mary Bourne |
| | | Ecchinswell, Sydmonton and Bishops Green |
| | | Newtown |
| | | Burghclere |
| | | Highclere |
| | | Litchfield and Woodcott |
| | | Ashmansworth |
| | | District Ward |
| | | Burghclere, Highclere and St. Mary Bourne |
| | | Burghclere, Highclere and St. Mary Bourne |
| | | Highclere |
| | | Harewood |
| | | Alamein |
| | | Ecchinswell, Sydmonton and Bishops Green |
| | | Burghclere |
| | | Greenham |
| | | St. Mary Bourne |
| | | Newtown |
| | | Bourne Valley |
| | | District Ward |
| | | East Woodhay |
| | | Falkland |
| | | Kingsclere |
| | | Kintbury |
| | | St. Mary's |
| | | Whitchurch |
| | | Ashmansworth |
| | | Overton, Laverstoke and Steventon |
| | | http://data.ordnancesurvey.co.uk/doc/7000000000017789.html |
| | | http://data.ordnancesurvey.co.uk/doc/7000000000017789.json |
| | | http://data.ordnancesurvey.co.uk/doc/7000000000017789.rdf |
| | | http://data.ordnancesurvey.co.uk/doc/7000000000017789.ttl |
| | | Linked Data for Burghclere, Highclere and St. Mary Bourne |
| | | http://purl.org/dc/dcmitype/Text |
| | | Document |
| | | Burghclere, Highclere and St. Mary Bourne |
| | | application/rdf+xml |
| | | http://data.ordnancesurvey.co.uk/doc/7000000000017789 |
| | | Linked Data in RDF/XML format for Burghclere, Highclere and St. Mary Bourne |
| | | http://purl.org/dc/dcmitype/Text |
| | | Document |
| | | Burghclere, Highclere and St. Mary Bourne |
| | | text/html |

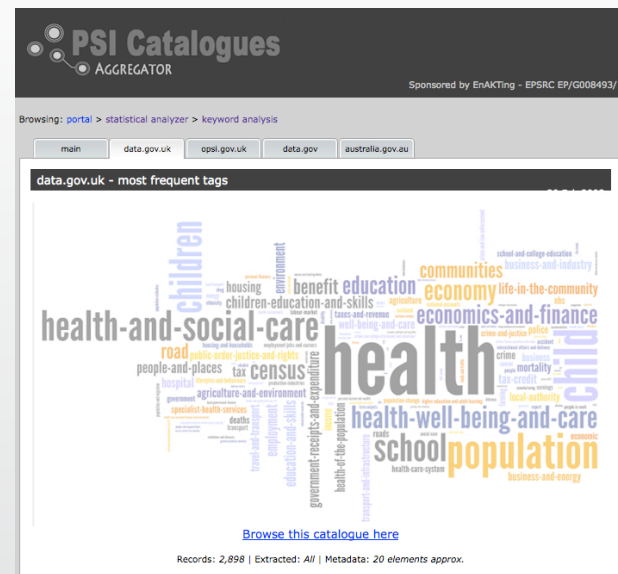
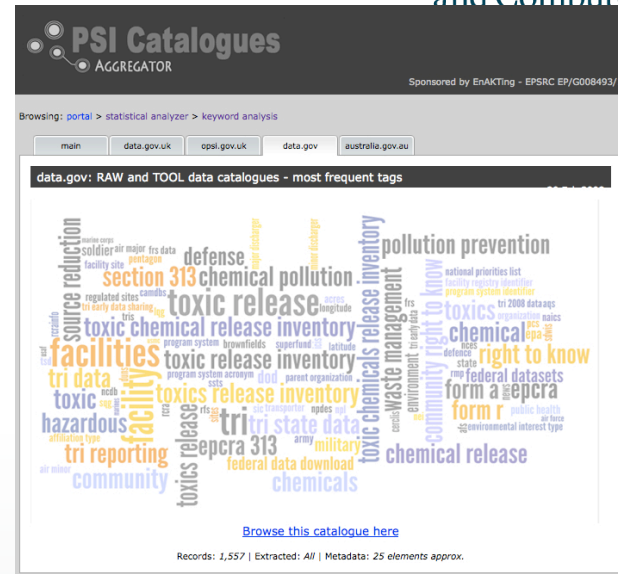
<http://map.psi.enakting.org/how>



New data?

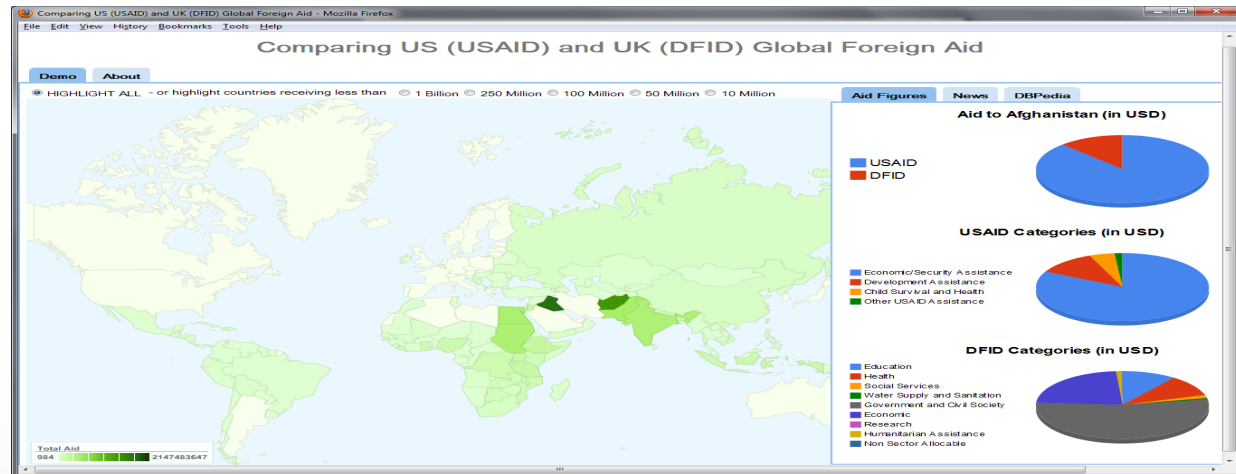
- Make data available for re-use.
- The data on data.gov.uk includes:
 - data not previously available at all
 - data previously only available in non-reusable form (e.g. PDF)
 - data previously only available with licensing restrictions on its reuse (there is a new, open licence for data on data.gov.uk)
 - data previously only available to a limited or specialist set of users
 - data previously not easy to find
- Invariably the case for any organisation

UNIVERSITY OF
Southampton
School of Electronics
and Computer Science



Global Linked Data

This application presents a mashup of foreign aid data (represented in US Dollars) from the United States Agency for International Development (USAID) and UK Department for International Development (DFID) for the 2007 US Fiscal Year.



Users may retrieve foreign aid data for specific countries by clicking on a provided world map (shaded based on total combined contributions for USAID and DFID). Upon clicking on a desired country, three kinds of information are presented: Aid Figures, New York Times news, and wikipedia description.

<http://data-gov.tw.rpi.edu/demo/linked/aidviz-1554-10030.html>

Aid Figures **News** **DBpedia**

Pakistani Refugees Pour Into Afghanistan
2008-09-30

Bush Administration Reviews Its Afghanistan Policy, Exposing Points of Contention
2008-09-23

In Afghanistan, British Leader Shows Support
2008-08-22

Donors Press Afghanistan On Corruption
2008-06-13

5 Dead in Attack on Mine-Clearing Team in Afghanistan
2008-03-25

Kidnapping Prompts Rally By 500 Women In Afghanistan
2008-01-30

4 Red Cross Workers Kidnapped in Afghanistan While Seeking Hostages' Release
2007-09-28

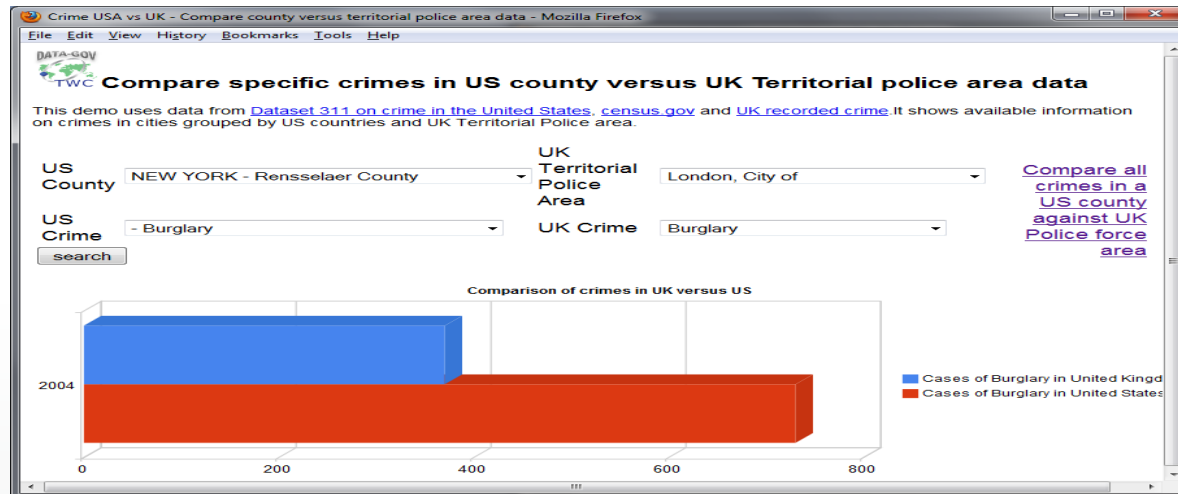
WORLD BRIEFING | ASIA: Afghanistan: German Hostage In Tv Plea
2007-08-24

WORLD BRIEFING | ASIA: Afghanistan: Kidnap Motive Was Ransom
2007-08-21

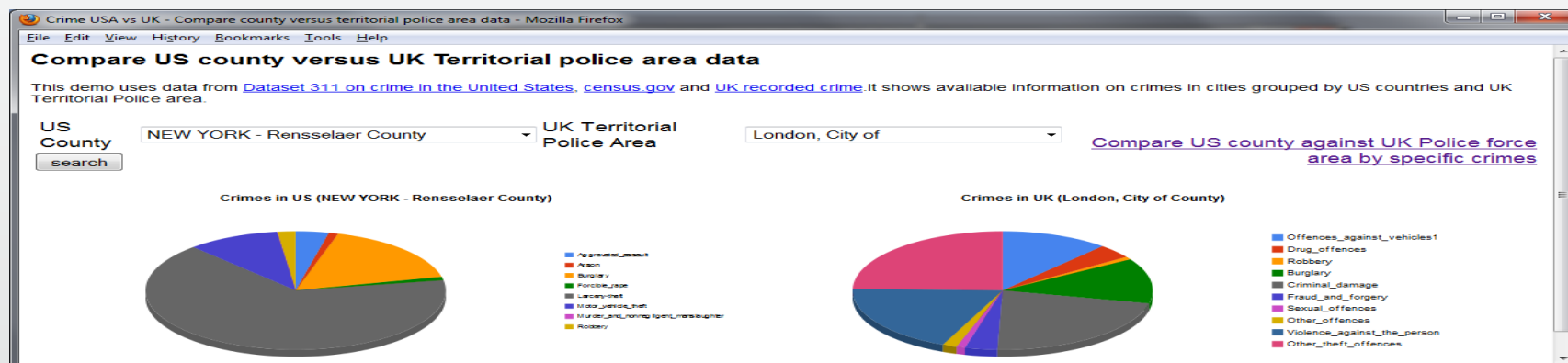
Aid Figures **News** **DBpedia**

About Afghanistan
The Islamic Republic of Afghanistan is a landlocked country in south central Asia. It is variously described as being located within Asia, South Asia, or the Middle East. It is bordered by Iran in the west, Pakistan in the south and east, Turkmenistan, Uzbekistan, Tajikistan in the north, and China in the far northeast. Afghanistan is a crossroads between the Eastern world and the Western world and was an ancient focal point of the Silk Road and Human migration. It has an important geostrategic location connecting South and Central Asia and Middle East. Because of this, it has been a target of various invaders and conquerors, as well as a from which local powers invaded surrounding regions to form their empires. Ahmad Shah Durrani created the Durrani Empire in 1747, considered the beginning of modern Afghanistan. Subsequently, the capital was shifted to Kabul and most of its territories ceded to former neighboring countries. In the late 19th century, Afghanistan became a buffer state in "The Great Game" played between the British Indian Empire and the Russian Empire. On August 19, 1919, following the European influence in Afghanistan, the Third Anglo-Afghan War and Independence, the country regained full independence from the United Kingdom. Since the late 1970s Afghanistan has suffered from brutal civil war in addition to foreign interventions of the 1979 Soviet war in Afghanistan, Soviet invasion and the 2001 Afghanistan (2001-present) U.S.-led invasion that toppled the Taliban government. In late 2001 the United Nations Security Council authorized creation of an International Security Assistance Force (ISAF) composed of NATO troops.

Global Linked Data



This demo uses data from [Dataset 311 on crime in the United States, census.gov](#) and [UK recorded crime](#). It shows available information on crimes in cities grouped by US countries and UK Territorial Police area.




Media Linked Data – BBC

BBC Home News Sport Weather iPlayer TV Radio More... Search

WILDLIFE FINDER

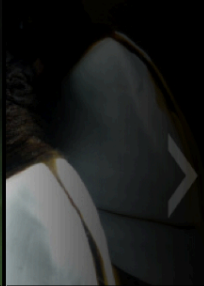
WATCH THE MOST AMAZING ANIMALS IN THE WORLD

LATEST WILDLIFE



Red panda ▶ 2 videos ◀ 1 sound ≡ 2 news stories ≡ 2 programmes
Red pandas were once thought to be closely related to the giant panda, but genetics has shown they are more closely allied with the raccoon and weasel families. They are secretive and gentle creatures, spending most of the day sleeping curled up with their tail wrapped around their head.

21 May 2010



Goose barnacles
Goose barnacles are odd-looking creatures that can be found on debris that has been washed up on beaches.


21 May 2010


◀ ▶

◻ ◻ ◻ ◻ ◻ ◻ ◻ ◻ ◻ ◻

COLLECTIONS


Collections offer a new perspective on the vast catalogue of clips showcasing presenter favourites, aspects of wildlife film-making, and gathering content together in illuminating ways.


BRILLIANT BEES

Bees are amazing - not only do they fulfil a vital role in our ecosystem, they are one of the most complex and sophisticated living things in the history of evolution.


Wildlife wind-ups

It's not only humans that like a good joke - animals


EDITOR'S CHOICE

Celebrate the UK's wonderfully diverse wildlife for International Biodiversity Day on May 22nd.

 **Dragonflies** 5 videos

 **Kingfisher** 7 videos

 **Water vole** 2 videos

 **Grass snake** 3 videos

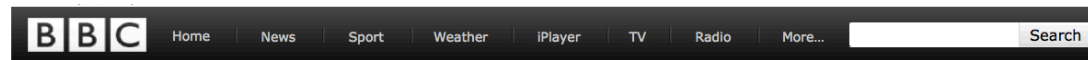
WELCOME TO WILDLIFE FINDER

Explore a wealth of video, sounds, stories and breaking news on your favourite animals, and find out more about how and where they live.

Wildlife Finder gives you access to an ever growing catalogue of BBC natural history programmes, with video clips from series such as: Planet Earth, Blue Planet, Life on Earth, Natural World, Life and many more.

WHAT'S NEW?

21 May 2010
Watch killer whale video clips from Gordon



Wildlife Ontology

Latest Version <http://purl.org/ontology/wo/>
Created 2010-01-04
Last Modified 2010-02-19
Authors [Leigh Dodds](#)
[Tom Scott](#)

Abstract

A simple vocabulary for describing biological species and related taxa. The vocabulary defines terms for describing the names and ranking of taxa, as well as providing support for describing their habitats, conservation status, and behavioural characteristics, etc
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This work is licensed under a [Creative Commons Attribution License](#). This copyright applies to the *Wildlife Ontology* and accompanying documentation in RDF. This ontology uses W3C's [RDF](#) technology, an open Web standard that can be freely used by anyone.



Introduction

The Wildlife Ontology is a simple lightweight ontology for publishing data about all forms of biological taxa, including phyla, families, and species. The terms in this ontology allow data to be published about:

The relationships between taxa
Their associations with specific habitats, their mode of life, as well as their specific behaviours
Whether a taxon is endangered according to the IUCN terms
Topic relations between web documents and multimedia objects that may feature a taxon
...etc

The Wildlife Ontology was originally designed to support the publishing of data from the BBC Wildlife Finder application. This application provides access to a rich set of information and data about biological species, as well as pointers to BBC broadcast output that relate to these topics. The ontology should therefore complement the existing [Programmes Ontology](#) for describing TV programmes.

BBC Home News Sport Weather iPlayer TV Radio More... Search

RED PANDA (AILURUS FULGENS)

Wildlife Finder > Animals > Red panda



Red pandas were once thought to be closely related to the giant panda, but genetics has shown they are more closely allied with the raccoon and weasel families. They are secretive and gentle creatures, spending most of the day sleeping curled up with their tail wrapped around their head.

WHAT DO THEY SOUND LIKE?

Red panda calls

00:00 / 00:00

Anup Shah / naturepl.com

INTRODUCTION

Red panda overview and 1 sound clip.



Bamboo eaters
Trials of Life
Red pandas and golden bamboo lemurs survive on indigestible bamboo.



The high life
Living Planet
The forested valleys of the Himalayas require special adaptations.

FEATURED IN THE FOLLOWING TV PROGRAMMES

SCIENTIFIC CLASSIFICATION

programmes: programme: 1. programa; emisión 2. programar; planear

| ▼ http://www.bbc.co.uk/nature/species/Red_Panda.rdf | | |
|---|-----------------|--|
| http://www.bbc.co.uk/nature/species/Red_Panda | seeAlso | http://www.bbc.co.uk/nature/species |
| Red panda | primary topic | Red panda |
| | Description | Red pandas were once thought to be closely related to the giant panda, but genetics has shown they are more closely allied with the raccoon and weasel families. They are secretive and gentle creatures, spending most of the day sleeping curled up with their tail wrapped around their head. |
| | adaptation | Helpless young Tree dweller Herbivorous Nocturnal Chemical communication Viviparous Mammalia |
| | class | animalia |
| | family | Ailuridae |
| | kingdom | animalia |
| | lives In | Broadleaf forest Coniferous forest |
| | name | Ailurus fulgens |
| | order | Carnivora |
| | phylum | Chordata |
| | type | http://purl.org/ontology/wo/Species |
| | label | Red panda |
| | sameAs | http://dbpedia.org/resource/Red_Panda |
| | depiction | http://open.live.bbc.co.uk/dynamic_images/naturelibrary_640_credits/downloads.bbc.co.uk/earth/naturelibrary/assets/r/re/red_panda/red_panda_1.jpg |
| Ailurus fulgens | class Name | Mammalia |
| | common Name | Firefox Lesser panda Red panda |
| | family Name | Ailuridae |
| | genus Name | Ailurus |
| | kingdom Name | animalia |
| | order Name | Carnivora |
| | phylum Name | Chordata |
| | scientific Name | Ailurus fulgens |
| | species Name | fulgens |
| | type | http://purl.org/ontology/wo/TaxonName |
| | label | Ailurus fulgens |
| | type | Image |
| | depicts | Red panda |
| http://open.live.bbc.co.uk/dynamic_images/naturelibrary_640_credits/downloads.bbc.co.uk/earth/naturelibrary/assets/r/re/red_panda/red_panda_1.jpg | thumbnail | http://open.live.bbc.co.uk/dynamic_images/naturelibrary_128/downloads.bbc.co.uk/earth/naturelibrary/assets/r/re/red_panda/red_panda_1.jpg |
| programme | Title | Bamboo eaters |
| | subject | Red panda |
| | type | http://purl.org/ontology/po/Clip |
| programme | Title | The high life |
| | subject | Red panda |
| | type | http://purl.org/ontology/po/Clip |
| programme | Title | Living Planet: Episode 1: THE BUILDING OF THE EARTH |
| | subject | Red panda |
| | type | http://purl.org/ontology/po/Episode |

Data Federation: EPSRC

Information Aggregation: UK Research Councils

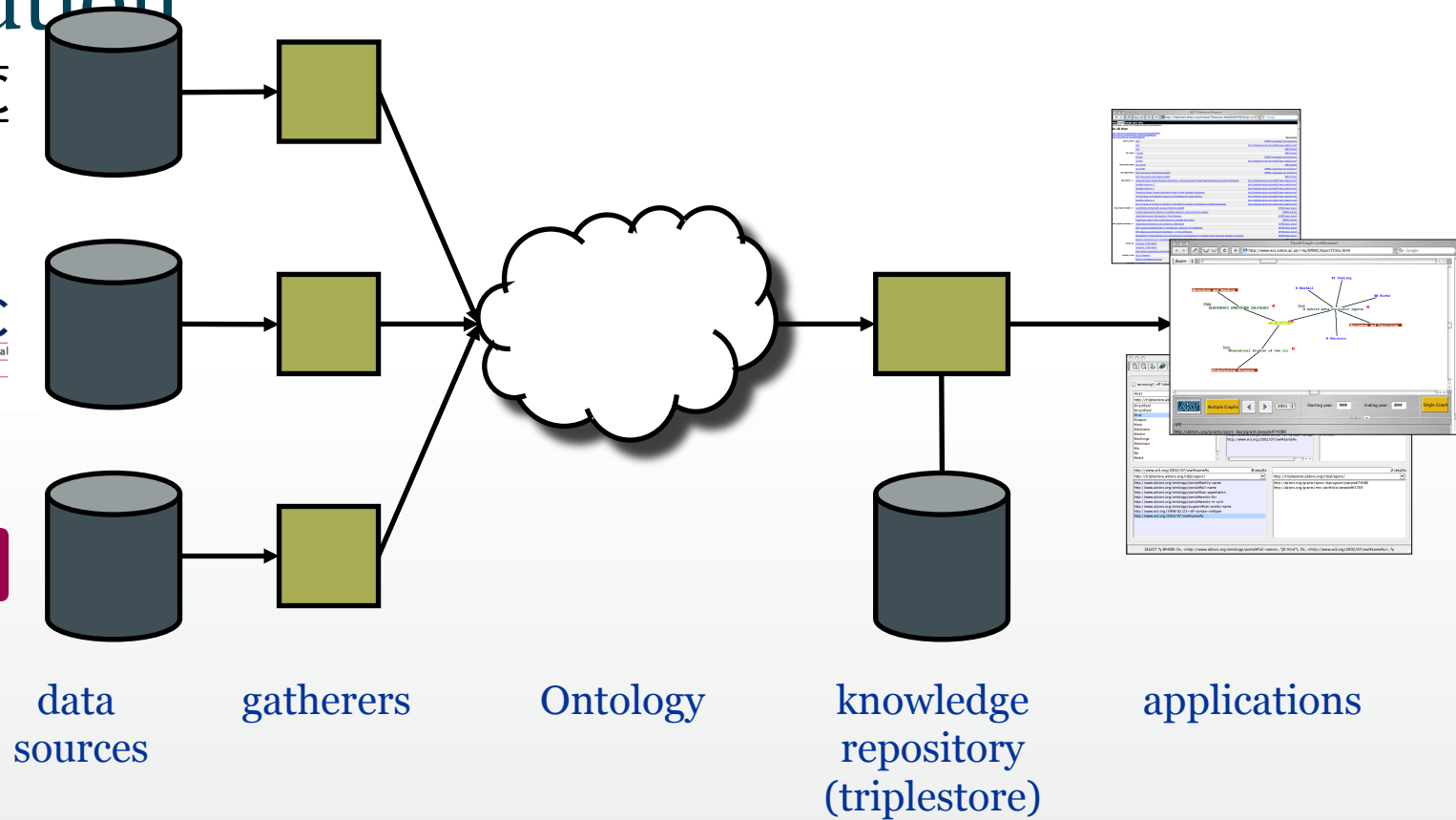


A Solution

EPSRC

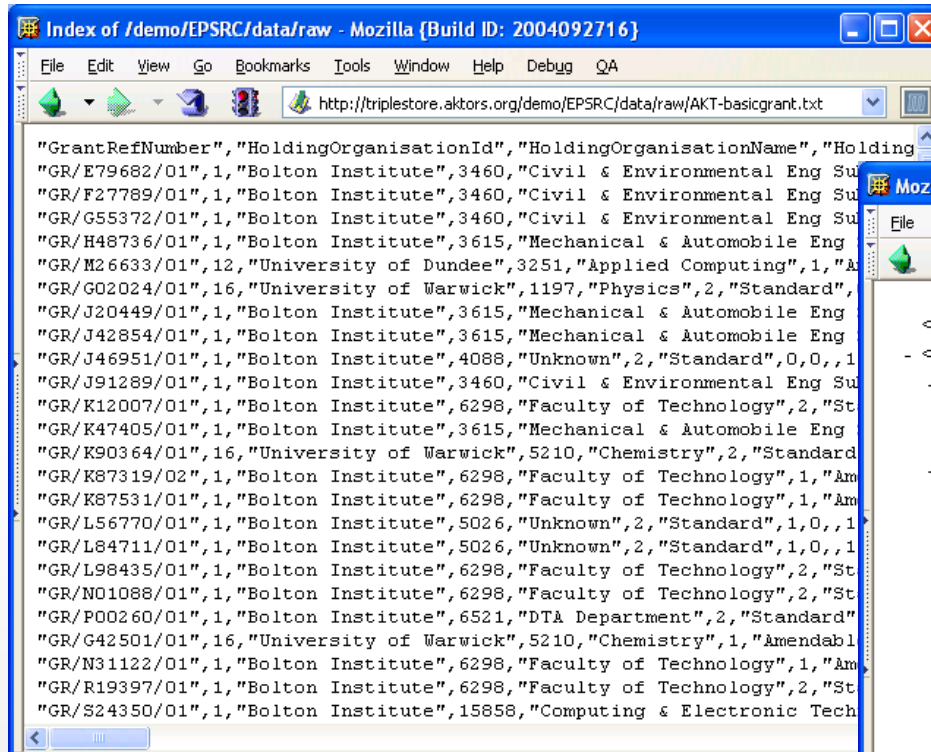
bbsrc
biotechnology and biological
sciences research council

MRC Medical
Research
Council



RDF Integration

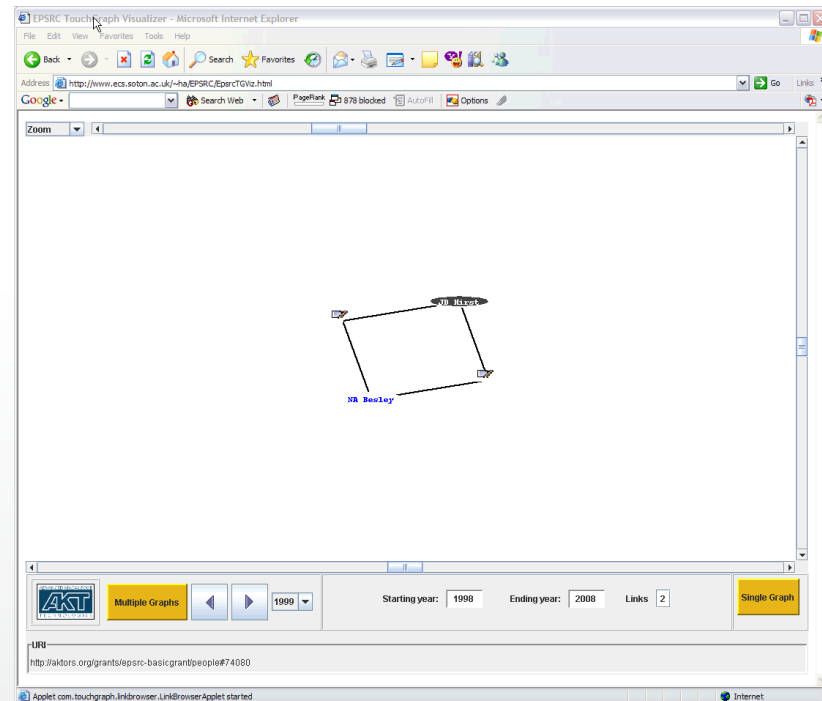
Raw CSV data
Heterogeneous tables



Processed RDF information
Uniform format for files

An Application Service

- Relatively simple could yield real information integration and interoperability benefits
- Reuse was real but again lightweight
- Ontology winnowing needed



What this means for you

Web of Linked Data

- The Web of Linked Data will change
 - Government
 - Business
 - Cities
 - Universities
 - Libraries
 - :
- Exploitation of
 - open data
 - open standards
- Can apply to data intranets as well as extranets



Your Data Environment

- What data do you hold?
- What form is it in?
- Are there licenses that restrict its use
- Do there need to be?
- Can you easily exchange it?
- Can you publish it so that machines can use directly as data?
- What data do your clients/users/collaborators/external agents hold?
- Is information flow efficient?
- What data could you exploit that is out there?

How could YOU exploit YOUR data?

- Transparency
- Accountability
- Efficiency
- Economic value
- Social capital
- Marketing
- Apps for your data



Next steps

- A data Web strategy
- Catalogue your data environment
- Build a prototype or proof of concept
- We are here to help