## Glossary

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<th>Term</th>
<th>Definition</th>
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<tr>
<td>AJAX (Asynchronous JavaScript and XML)</td>
<td>A set of technologies enabling the client-side development of interactive Web applications. In particular, it enables the exchange of data with a server, and updates to parts of a Web page without reloading the whole page.</td>
</tr>
<tr>
<td>AI (Artificial Intelligence)</td>
<td>An area of computer science focusing on creating machines that can engage on behaviors that humans consider intelligent. AI is the study and design of intelligent agents, which are capable of perceiving their environment and intelligently reacting to it. Artificial intelligence developments include systems which can mimic human thought, understand speech, and beat the best human chess players.</td>
</tr>
<tr>
<td>Backward chaining (or backward reasoning)</td>
<td>A reasoning method based on inference rules and logical implications, used in automated theorem provers and artificial intelligence applications. Backward chaining starts with a list of goals (or a hypothesis) and works backward from the consequent to the antecedent to see if there is data available that will support any of these consequents.</td>
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<tr>
<td>BPEL (Business Process Execution Language)</td>
<td>An OASIS standard execution language for specifying executable business processes based on Web services.</td>
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<tr>
<td>Closed-world assumption</td>
<td>A fundamental presumption in logic and logic reasoning stating that what is not known to be true is considered to be false. Opposite to the open-world assumption (see below).</td>
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<tr>
<td>CSS (Cascading Style Sheets)</td>
<td>A style-sheet language used to describe the visual appearance and format of Web sites and Web applications. CSS enables the separation of document content from document presentations, so that multiple pages can share formatting and also one document can be visualized in a multitude of different ways by simply replacing the style-sheets.</td>
</tr>
<tr>
<td>DAML (DARPA Agent Markup Language)</td>
<td>A markup language based on RDF aiming to support the creation of machine-readable representations for the Web. An early combination of the DAML and OIL languages (see above and below). A syntax, layered on RDF and XML, that could be used to describe sets of facts making up an ontology. DAML + OIL was a starting point for the development of OWL (see below).</td>
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<tr>
<td>Term</td>
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<tr>
<td>Datalog</td>
<td>A first-order-logic query and rule language for deductive databases. Datalog is a subset of Prolog where query evaluation is carried out using bottom-up approaches.</td>
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<tr>
<td>DBpedia</td>
<td>A project aiming to create a dataset based on extracting linked data from articles available in Wikipedia. The resulting structured RDF data can be queried for relationships and properties associated with Wikipedia resources.</td>
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<tr>
<td>DNS (Domain Name System)</td>
<td>A distributed hierarchical naming system for computers, services, and resources connected in a network such as the Internet or private networks. DNS maps domain names meaningful to humans into the numerical identifiers (IP addresses) associated with networking equipment for the purpose of locating and addressing these devices globally.</td>
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<tr>
<td>DOM (Document Object Model)</td>
<td>An interface-oriented representation of documents in terms of nodes and a treelike structure. A DOM document can be created by a parser, or can be generated manually by users.</td>
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<tr>
<td>Dublin Core</td>
<td>Dublin Core usually refers to the Simple Dublin Core Metadata Element Set which has 15 metadata elements which have proven useful for describing a variety of resources. Example elements include title, creator, and date. Dublin Core Metadata Initiative (DCMI) communities are where people interested in any topic related to Dublin Core metadata can come together. Anyone who subscribes to the open mailing list can participate in a DCMI Community. There are communities for the following topics: Accessibility, Collection Description, Education, Environment, Government, Identifiers, Kernel, Knowledge Management, Libraries, Localization and Internationalization, Preservation, Registry, Scholarly Communications, Science and Metadata, Social Tagging, Standards, and Tools.</td>
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<tr>
<td>EAI (Enterprise Application Integration)</td>
<td>The integration of the computer applications of an enterprise so as to maximize their utility throughout the organization. The process of linking distributed applications within an enterprise in order to realize a better financial and operational competitiveness.</td>
</tr>
<tr>
<td>Endpoint (Web service endpoint)</td>
<td>An endpoint indicates a specific location for accessing a service using a specific protocol and data format. An association between a binding and a network address, specified by a URI that may be used to communicate with an instance of an online service.</td>
</tr>
<tr>
<td>Flickr</td>
<td>An image hosting and video-hosting Web site, Web services suite, and online community. A very popular Web site for...</td>
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sharing photos and currently hosts 5 billion images; the Web site is http://www.flickr.com/.

**F-Logic (Frame Logic)**
F-Logic is an ontology language which is based on first-order logic, where classes and properties are modeled as terms rather than predicates. Features include, object identity, complex objects, inheritance, polymorphism, query methods, and encapsulation.

**Folksonomy**
A system of classification derived from the practice and method of collaboratively creating and managing tags to annotate and categorize content.

**Forward chaining**
A reasoning method based on inference rules and logical implications, used in expert systems, production rule systems, and artificial intelligence applications. The opposite of forward chaining is backward chaining. Forward chaining starts with the available data and uses inference rules to extract more data until a goal is reached.

**FOAF (Friend Of A Friend)**
A project aiming to create a Web of machine-readable pages describing people, the links between them and the things they create and do. An individual person’s description is based on the FOAF ontology.

**FTP (File Transfer Protocol)**
FTP supports the copying of files from one host to another over the Internet (or any TCP-IP network).

**GATE (General Architecture for Text Engineering)**
An open source toolkit that is used for a range of natural language processing (NLP) tasks such as information extraction. The toolkit includes a desktop client for developers, a workflow-based Web application, and a Java library. GATE was originally developed at the University of Sheffield.

**GRDDL (Gleaning Resource Descriptions from Dialects of Languages)**
A W3C Recommendation that enables developers to extract RDF triples from an XML document.

**HTML (HyperText Markup Language)**
The publishing language of the Web. It is a markup language, which means that it is used to annotate a given document, in this case to describe the structure of the document (i.e., the title, headings, paragraphs, lists, quotes, and links). HTML also allows images and other objects to be embedded in the document, and can be used to create interactive forms. The last HTML specification published by W3C is the HTML 4.01 Recommendation.

**HTML5**
The forthcoming fifth major revision of HTML which is currently in W3C Working Draft status. HTML5 will have improvements such as native support for video playback,
which currently depends on third-party browser plug-ins such as Adobe Flash.

**HTTP (HyperText Transfer Protocol)**

HTTP supports remote access to Web content over a network layer (TCP-IP – see below). HTTP functions as a request–response protocol in a client–server computing model. In HTTP, a Web browser typically acts as a client, while an application running on a computer host acts as a server.

**Inference**

“Inferencing” refers to the process of deriving new facts in a knowledge base on the basis of two sources: (a) other facts that have already been represented in the knowledge base, and (b) inference rules that are specified as part of the ontology underpinning the knowledge base.

**Information extraction**

A natural language processing (NLP) task that aims to obtain structured information from unstructured text.

**Information retrieval**

The science of searching for documents and searching for information within documents that match a given user query.

**IP (Internet Protocol) address**

A number that is assigned to any device connected to an IP network. The Internet Protocol is used to route data packets between networks and IP addresses are used to specify the locations of the source and destination nodes in the respective networks.

**IRI (Internationalized Resource Identifier)**

A generalization of the Uniform Resource Identifier (URI), which in turn is a generalization Uniform Resource Locator (URL). Unlike URIs, which are limited to the English-language-only ASCII character set, IRIs may contain characters from the Universal Character Set (also known as Unicode), which covers many of the world’s languages.

**JSON (JavaScript Object Notation)**

A lightweight, text-based data-interchange format. It is primarily used to transmit data between a server and Web application, serving as an alternative to XML. Note that, despite its origins as a derivative of the JavaScript programming language, JSON is language independent.

**Knowledge Acquisition**

The process of obtaining knowledge from a subject-matter expert, which is then used in developing an expert or knowledge-based system. This knowledge can be represented as a set of IF-THEN style rules or in some other common knowledge representation format.

**Knowledge base**

A database of the knowledge (e.g., basic facts and IF-THEN rules) of a particular subject domain that forms part of an expert or knowledge-based system.
<table>
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<tr>
<th><strong>Knowledge engineering</strong></th>
<th>The process of building an expert or knowledge-based system. More narrowly, it can refer to the process of translating the knowledge of a subject-matter expert into the knowledge base of the expert or knowledge-based system.</th>
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<tr>
<td><strong>Knowledge representation</strong></td>
<td>The technique of formally coding knowledge in a knowledge base. Knowledge representation can also refer to formally coded knowledge.</td>
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<tr>
<td><strong>LarKC (Large Knowledge Collider)</strong></td>
<td>A platform for massive distributed incomplete reasoning that aims to remove the scalability barriers of current existing reasoning systems for the Semantic Web. It is being developed within an EU FP7 project of the same name (<a href="http://www.larkc.eu/">http://www.larkc.eu/</a>).</td>
</tr>
<tr>
<td><strong>Linked Open Data (also “Linked Data”)</strong></td>
<td>A recommended best practice for exposing, sharing, and connecting pieces of data, information, and knowledge on the Semantic Web using URIs and RDF (see <a href="http://linkeddata.org/">http://linkeddata.org/</a>).</td>
</tr>
<tr>
<td><strong>Logic</strong></td>
<td>Logic is formally a branch of mathematics, which explores the expressive power of formal systems and the deductive power of formal proof systems. In computer science, research focuses on logic systems that are computationally feasible.</td>
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<tr>
<td><strong>Mashup</strong></td>
<td>A graphical lightweight process (composite service) description, described as an aggregation of individual graphical services, including both WSDL (see below) and RESTful (see below), connected through a simple data flow which implicitly offers a basic workflow as well.</td>
</tr>
<tr>
<td><strong>Materialisation</strong></td>
<td>Total materialization involves computing all entailed statements at load time. While this introduces additional reasoning cost when loading statements into a repository, the desirable consequence is that query evaluation can proceed extremely quickly.</td>
</tr>
<tr>
<td><strong>Meta Content Framework (MCF)</strong></td>
<td>MCF is a specification of a format for structuring metadata about Web sites and other data, developed by Ramanathan V. Guha between 1995 and 1997.</td>
</tr>
<tr>
<td><strong>MetaData</strong></td>
<td>MetaData is structured data about data. MetaData is used to facilitate the machine understanding, use, and management of data.</td>
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| **Microformats** | Microformats are a set of simple, open data formats built upon existing and widely adopted standards. This approach allows software to process information intended for end-users such as contact information (hCard), geographic coordinates (geo), and calendar events (hCalendar) automatically. Microformats take advantage of the class and rel
attributes of (X)HTML to embed metadata in a machine consumable way.

Natural Language Processing (NLP) is a range of computational techniques for analyzing and representing naturally occurring text (free text) at one or more levels of linguistic analysis (e.g., morphological, syntactic, semantic, and pragmatic) for the purpose of achieving humanlike language processing for knowledge-intensive applications.

NeOn (NEtworked ONtologies) is a project aimed to advance the state of the art in using ontologies for large-scale semantic applications in distributed organizations, particularly, improving the capability to handle multiple networked ontologies that exist in a particular context, are created collaboratively, and might be highly dynamic and constantly evolving. NeOn provides methodological and tool support for developing and managing a new generation of semantic applications: the NeOn toolkit, which is an open source multi-platform ontology engineering environment providing comprehensive support for the ontology engineering life cycle. See http://www.neon-project.org/ for more details.

OASIS (Organization for the Advancement of Structured Information Standards) is a not-for-profit consortium that drives the development, convergence, and adoption of open standards for the global information society. The consortium has produced Web services standards such as WS-BPEL (Web Services Business Process Execution Language) along with standards for security and e-business XDI (XRI Data Interchange) and ebXML (Electronic Business using eXtensible Markup Language) respectively.

OIL (Ontology Inference Layer or Ontology Interchange Language) was an ontology language based on concepts developed in Description Logic (DL) and frame-based systems and was compatible with RDFS. Much of the work in OIL was subsequently incorporated into DAML+OIL (see above) and the Web Ontology Language (OWL) (see below).

Ontology is the artificial intelligence community, the most agreed definition of ontology is due to Gruber who defines an ontology as: “a formal, explicit specification of a shared conceptualization.” A functional definition that defines ontologies by what they are for, rather than what they are: “An ontology defines (specifies) the concepts, relationships, and other distinctions that are relevant for modelling a domain.”

Ontology population is the process of adding new instances of concepts/relations into an ontology, usually based on information related to terms and synonyms.
OpenID
An open, decentralized standard for authenticating users which can be used for access control, allowing users to log on to different services with the same digital identity where these services trust the authentication body.

Open Graph
A Facebook technology, which enables any Web page to become a rich object in a social graph. For instance, this is used on Facebook to enable any Web page to have the same functionality as a Facebook Page. Open Graph is based on RDFa.

Open-world assumption
Open-world assumption is the assumption that the truth-value of a statement is independent of whether or not it is known by any single observer or agent to be true. It is the opposite of the closed-world assumption (see above), which holds that any statement that is not known to be true is false.

OWL (Web Ontology Language)

OWL2 (Web Ontology Language 2)
A new version of OWL based on the experiences in using OWL. OWL2 introduces a number of new profiles: OWL2 EL is a fragment that has polynomial time reasoning complexity; OWL2 QL is designed to enable easier access and query to data stored in databases; and OWL2 RL is a rule subset of OWL2. OWL2 has been a W3C recommendation since October 2009.

OWL-S (Ontology Web Language for Services)
OWL-S aims to provide building blocks for encoding rich semantic service descriptions that builds naturally upon OWL. The OWL-S approach consists of an upper ontology for services with three interrelated sub-ontologies. Firstly, the profile is an ontology for describing the service functionalities in order to advertise the service and match it with the requests. Secondly, the process model is an ontology supporting behavioral descriptions incorporating service invocation, enactment, composition, monitoring, and recovery. Lastly, the grounding ontology bonds the process model with detailed specifications of the service encoded in WSDL (see below).

N3 (Notation 3)
N3 is a shorthand non-XML serialization of RDF models, designed with human-readability in mind. Moreover, N3 is far more compact and readable than XML RDF notation.

Peer to Peer (P2P)
A flat network hierarchy in which clients interact directly without the intervention of mediating servers.
Powerset
A Microsoft-owned company that is developing a natural language search engine for the Internet.

Prolog
A general purpose logic programming language associated with artificial intelligence and computational linguistics.

Protégé
Protégé is a free, open source ontology editor and knowledge base framework. The Protégé platform supports two main ways of modeling ontologies: via the Protégé-Frames and Protégé-OWL editors. Within Protégé-Frames, an ontology consists of a set of classes organized in a subsumption hierarchy to represent a domain’s salient concepts, a set of slots associated to classes to describe their properties and relationships, and a set of instances of those classes. Protégé-OWL is an extension of Protégé that supports OWL where an OWL ontology may include descriptions of classes, properties and their instances. Given such an ontology, the OWL formal semantics specifies how to derive its logical consequences, that is, facts not literally present in the ontology, but entailed by the semantics.

R2RML (RDB2RDF mapping language)
A language for mapping relational data and relational database schemas into RDF and OWL.

Racer
A core inference engine for the Semantic Web. In particular, Racer is a description logics inference engine.

RDF (Resource Description Framework)
A general-purpose language for representing information in the Web. The RDF data model consists of a set of statements, each containing a subject, a predicate, and an object.

RDFa (RDF in attributes)
A W3C Recommendation that adds a set of attribute level extensions to XHTML for embedding RDF triples within Web documents.

RDQL (RDF Data Query Language)
A query language for extracting information from RDF graphs. RDQL provides a way of specifying a graph pattern that is matched against the graph to yield a set of matches.

Reasoning
The process of drawing inferences and conclusions from available information or data. These inferences can be:
(a) Deductive determining a conclusion, for example, using a rule and its precondition to infer a conclusion.
(b) Inductive determining a rule, that is, learning a rule after numerous examples of conclusions following a specific precondition. (c) Abductive determining the precondition. It is using the conclusion and the rule to support that the precondition could explain the conclusion.

Reification
Reification is the ability in RDF to treat a statement as a Resource, and hence to make assertions about that statement.
Repository (RDF Repository)  A purpose-built database for the storage and retrieval of RDF triples. Unlike a relational database, an RDF Repository is optimized for the storage and retrieval of triples (subject, relation, and object).

REST (Representational State Transfer)  REST is a style of software architecture for distributed hypermedia systems such as the World Wide Web. The term Representational State Transfer was introduced and defined in 2000 by Roy Fielding in his doctoral dissertation.

RIF (Rule Interchange Format)  A W3C standard that was developed to facilitate the sharing and reuse of rulesets. RIF comprises a set of interconnected dialects representing rule languages with various features. RIF became a W3C Recommendation in June 2010.

RSS feed (Really Simple Syndication or Rich Site Summary feed)  A simple format used to publish frequently updated content such as blog entries, news headlines, audio, and video, that a user can subscribe to using an RSS aggregator.

SameAs (OWL:SameAs)  A built-in OWL property that links an individual to an individual indicating that two URI references actually refer to the same thing: the individuals have the same “identity.” This property is used to link datasets that form Linked Open Data.

SAWSDL (Semantic Annotations for WSDL and XML Schema)  SAWSDL defines how to add semantic annotations to various parts of a WSDL document such as input and output message structures, interfaces, and operations.

Schema  Schema is used to define the structure for data. XML Schemas define the structure of XML documents through languages such as the Document Type Definition (DTD) or XML Schema languages. Database schemas define the structure of the data contained in a database. For a relational database, the schema definition will include a specification of a database’s table, fields, and relationships.

SearchMonkey  A Yahoo! service, which allows developers and site owners to use structured data to make Yahoo! Search results more useful and visually appealing, and to drive more relevant traffic to their sites.

Semantic Annotation  A piece of semantic metadata added to a document; for example, in WSDL semantic annotations contain semantic information about Web services.

Semantic Web Layer Cake  A diagram that shows the technologies of the Semantic Web, represented as blocks layered as one technology builds on another; the layer cake shows not only the existing technologies but also a roadmap for more advanced technologies, especially leading toward technologies for trust; see http://en.wikipedia.org/wiki/Semantic_Web_Stack.
Serialization
A transfer format for an abstract data model such as RDF, intended for interoperable communication in a computer network; for example, the RDF data model can be serialized in RDF/XML or in Turtle.

SESAME
An open-source framework enabling the storage, inferencing, and querying of RDF data in the programming language Java; currently hosted at http://www.openrdf.org/.

Sindice
An infrastructure to process, consolidate, and query the Web of Data, which collects data and metadata especially from RDF, RDFa, and Microformat documents and allows searching by text or other metadata; currently located at http://sindice.com/.

SIOC (Semantically-Interlinked Online Communities)
An ontology for data from online communities (e.g., message boards, wikis, and weblogs), commonly used in conjunction with FOAF (see above); submitted to the W3C at http://www.w3.org/Submission/sioc-spec/ and hosted at http://sioc-project.org/.

SKOS (Simple Knowledge Organization System)
A common data model for sharing and linking knowledge organization systems (such as thesauri, taxonomies, classification schemes, and subject heading systems) via the Web; defined at http://www.w3.org/TR/skos-reference/.

SNOMED (Systematized Nomenclature of Medicine)
A hierarchical classification system and a collection of medical terminology covering most areas of clinical information such as diseases, findings, procedures, microorganisms, pharmaceuticals, etc.; owned by the International Health Terminology Standards Development Organisation at http://www.ihtsdo.org/.

SOA (Service-Oriented Architecture)
A loosely defined IT architecture that focuses on decomposing systems into Web services (see below) usually according to a set of business requirements.

SPARQL
A query language for RDF data that supports querying diverse data sources, with results in the form of a variable-binding table, or an RDF graph; also a protocol built on top of HTTP that enables the sending of queries to external servers; defined at http://www.w3.org/TR/rdf-sparql-query/.

SWOOGLE
A Semantic Web search engine (a portmanteau of Semantic Web and Google) that allows textual and metadata queries to find ontologies or Semantic Web documents; currently located at http://swoogle.umbc.edu/.

SWOOP
A tool for creating, editing, and debugging OWL ontologies that employs a Web-browser metaphor for its design and usage; currently available via http://www.mindswap.org/2004/SWOOP/.
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<td>SWRL (Semantic Web Rule Language)</td>
<td>A rule language for the Semantic Web, submitted to the W3C. Most SWRL rules can now be exchanged via RIF (see above). SWRL is defined at <a href="http://www.w3.org/Submission/SWRL/">http://www.w3.org/Submission/SWRL/</a>.</td>
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<tr>
<td>Triple</td>
<td>In RDF, the ordered 3-tuple of <code>&lt;subject, predicate, object&gt;</code>, where a subject is a URI or a blank node; a predicate is a URI, an object is a URI, a blank node or a literal; and a blank node is an unnamed resource, commonly used to represent a structured value that need not be individually addressable. An example use of a blank node would be a postal address (with separate properties for street, city, country, and so on) attached as the mailing address of a person or an organization.</td>
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<tr>
<td>Triple Store</td>
<td>A software system for the storage and retrieval of RDF data, often in “named graphs” – sets of RDF triples collectively identified with a single URI. Retrieval is often carried using the SPARQL and protocol (see above). Triple stores additionally often provide inference capabilities.</td>
</tr>
<tr>
<td>Turtle</td>
<td>A serialization syntax for RDF that forms a subset of the N3 syntax (see above). Turtle is defined at <a href="http://www.w3.org/TeamSubmission/turtle/">http://www.w3.org/TeamSubmission/turtle/</a>.</td>
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<tr>
<td>Twitter</td>
<td>A microblogging system (every “tweet” is up to 140 characters) with optimized search through the mentions of users (who write about me or to me) and by mentions of topics or tags. Twitter is currently located at <a href="http://twitter.com/">http://twitter.com/</a>.</td>
</tr>
<tr>
<td>UDDI (Universal Description Discovery and Integration)</td>
<td>A business-oriented registry of Web services, tying business entities to the Web services they provide. There was also a public UDDI registry but this is no longer in use. Currently defined at <a href="http://uddi.xml.org/">http://uddi.xml.org/</a>.</td>
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<tr>
<td>UML (Unified Modeling Language)</td>
<td>A standard graphical modeling language for software engineering, including the modeling of use cases, components, activities, processes, and data schemas. UML is currently defined at <a href="http://www.uml.org/">http://www.uml.org/</a>.</td>
</tr>
<tr>
<td>URI (Uniform Resource Identifier)</td>
<td>A string with a defined format that is used to identify a resource. A resource may be on a Web (e.g., a Web page,</td>
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</table>
an image, or a data source) or it may be something more abstract (e.g., a person or an e-mail address). URIs are current defined by http://tools.ietf.org/html/rfc3986.

**URL (Uniform Resource Locator)**
A URL is a URI that serves the purpose of both identifying a resource and also describing its network location so that it can be found and accessed. URLs are defined together with URIs (see above).

**URN (Uniform Resource Name)**
A URN is a URI that serves predominantly as a stable resource name, without direct ties to a location of the resource. URNs are defined together with URIs (see above).

**WATSON**
A gateway for the Semantic Web that crawls and analyzes semantic content on the Web and provides efficient query and keyword search. WATSON is currently located at http://watson.kmi.open.ac.uk/.

**W3C (World Wide Web Consortium)**
A standardization consortium formed by industrial and research organizations to create technology standards for the Web. Among the standards that W3C has produced are HTML, XML, RDF, OWL, and WSDL.

**Web 2.0**
Web 2.0 introduces no real technologies over the Web but emphasizes the notion of prosumers. Prosumers both produce and consume content. Prime examples of Web 2.0 sites include Wikipedia, YouTube (see below), and social networking sites such as Facebook.

**Web APIs**
A Web Service (see below) implemented using native Web technologies (especially HTTP, JSON, and XML (all also in this glossary)) that gives programmatic access to the functionalities of a Web site, in addition to the human access through the HTML pages.

**Web of Data**
A term that groups the data sources on the World Wide Web, available in machine-processible formats (see XML, JSON, RDF) rather than in a human-oriented form such as presented in HTML. The Web of data is directly usable by programs that can download and process the data.

**Web Service**
A software system that makes a piece of business functionality available through standardized computer networks and protocols. The interface of a Web Service is often formally described using WSDL (see below), facilitating the creation of client programs. The definition of a Web Service can be found at http://www.w3.org/TR/ws-arch.

**Wiki**
A Web authoring system optimized for the simple authoring of Web content and hyperlinking between entries in a single system, with a special syntax that is simpler than HTML. A Wiki will often have features for collaborative authoring,
such as a page history and change notifications. Wikipedia (below) is the most famous example of a Wiki.

**Wikipedia**
A free, multi-language, hyperlinked online encyclopedia created and managed by volunteers. By default, everybody is allowed to edit Wikipedia entries (in comparison to traditional encyclopedias edited by small teams of experts), resulting in a wide breadth of topics and coverage. Wikipedia is currently located at [http://wikipedia.org/](http://wikipedia.org/).

**Wordnet**
A lexical database for the English language, containing basic information about English words, including synonyms and is-a relationships (hyponyms). Wordnet is often used in conjunction with ontologies to provide breadth. It is currently hosted at [http://wordnet.princeton.edu/](http://wordnet.princeton.edu/).

**WSDL (Web Services Description Language)**
An XML language for describing the interfaces and endpoints of Web services. Currently defined at [http://www.w3.org/TR/wsdl20](http://www.w3.org/TR/wsdl20).

**WSMO (Web Service Modeling Ontology)**
An ontology supporting the semantic description of Web services. Among the top-level concepts of WSMO in addition to services are goals, to capture the client perspective, and mediators, to resolve heterogeneities. WSMO is currently defined at [http://wsmo.org/TR/d2](http://wsmo.org/TR/d2).

**XML (Extensible Markup Language)**
A standard representation for structured and semi-structured data. XML is widely deployed supporting data exchange and storage. XML is currently defined at [http://www.w3.org/TR/xml](http://www.w3.org/TR/xml).

**XSLT (XSL Transformations)**
A functional language supporting transformations between XML languages. XSLT is closely tied with XPath (a language for addressing and retrieving nodes from XML documents) and is currently defined at [http://www.w3.org/TR/xslt20](http://www.w3.org/TR/xslt20).

**YouTube**
A video-hosting, sharing, and discussion Web site launched in 2005 and reported in May 2010 to serve over two billion video views daily. It is now owned by Google and is located at [http://youtube.com/](http://youtube.com/).

**Acknowledgments**

We would like to thank the following for their support in creating this glossary: Neil Benn, Jacek Kopecky, Bassem Makni, and Maria Maleshkova.
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