

Semantic Web Tools Tutorial

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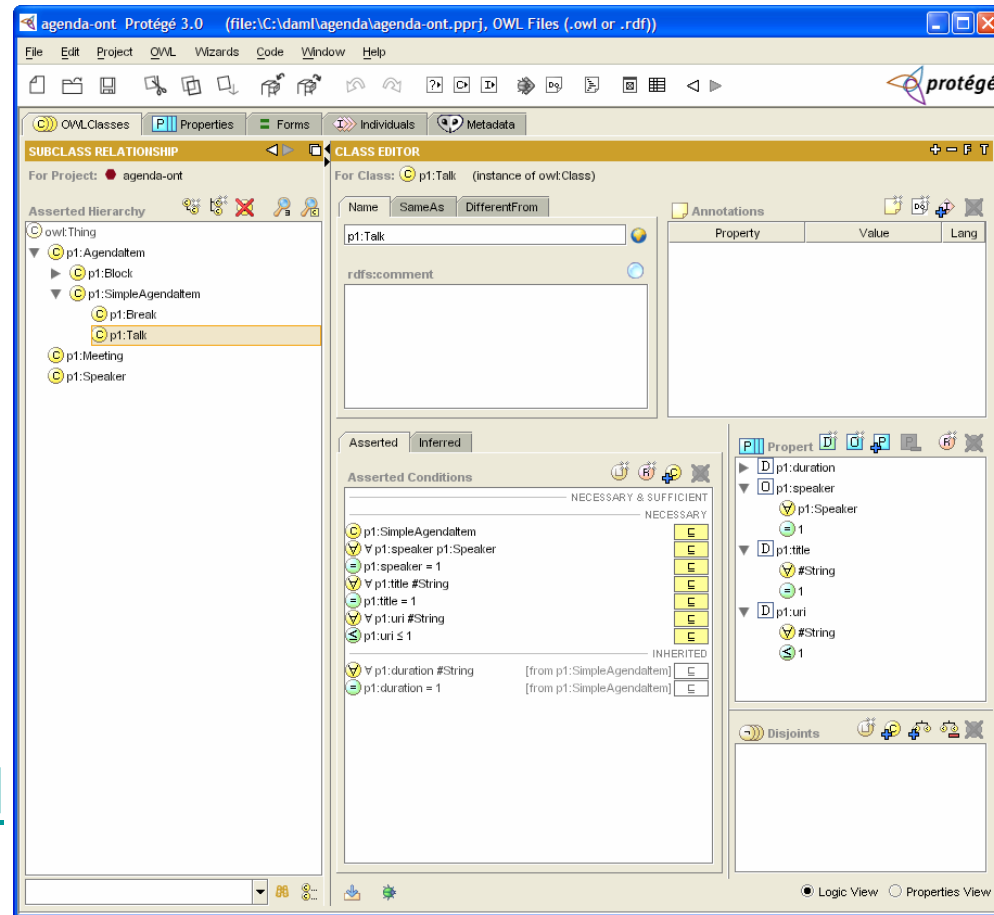
Semantic Web Applications for National Security
Arlington, VA
8 April 2005

Outline

- Types of tools
 - Ontology editors
 - APIs
 - Persistence and Query
- Focus on
 - Introductions
 - Discriminators
 - Demonstrations

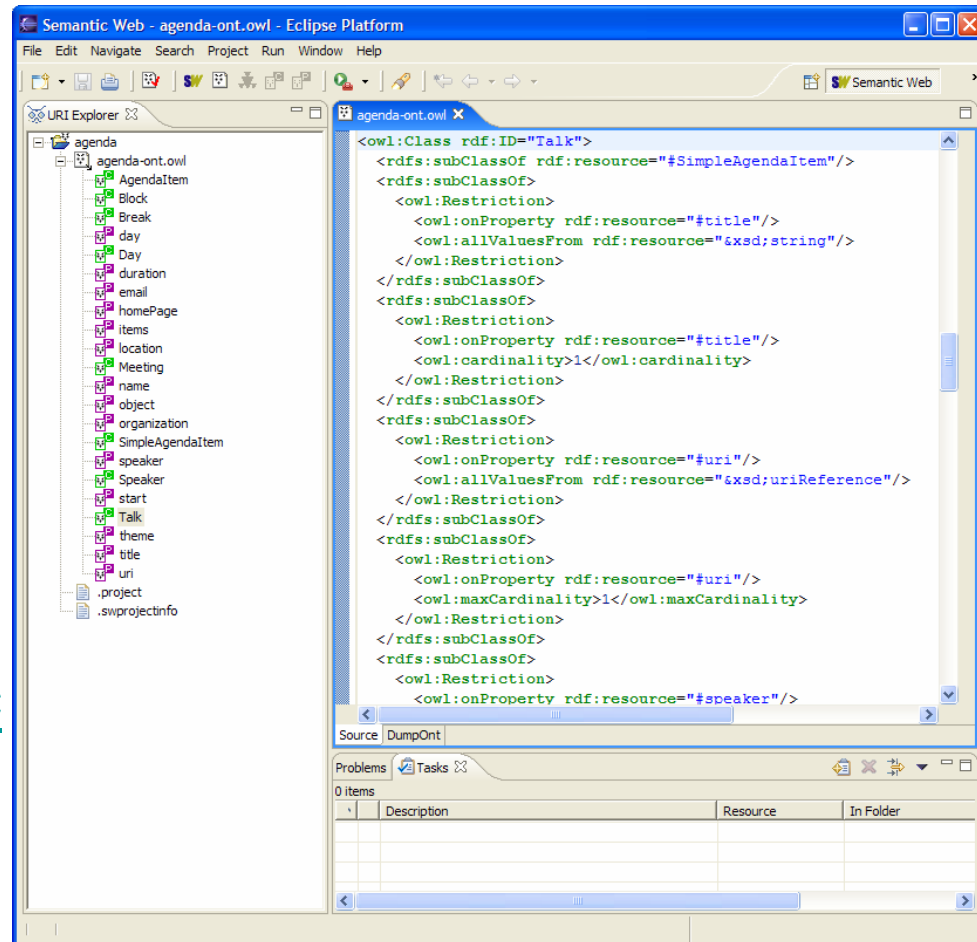
Protégé

- Open source ontology editor from Stanford Medical Informatics
 - Large user community
- Good GUI interface for subject-matter experts
- Extra features
 - SWRL support
 - PROMPT versioning
- <http://protege.stanford.edu>



SWeDE

- Open source Integrated Development Environment using Eclipse
- Oriented toward developers
 - Code generation facilities
- <http://owl-eclipse.projects.semwebcentral.org>



Jena

- Open source API from HP Labs UK
- Most popular Java API
 - Parser
 - Serializer
- Extra features
 - Persistence (RDBMS)
 - Query (RDQL)
 - Reasoning
 - Rule Engine
- <http://www.hpl.hp.com/semweb/>

Drive

- Open source C# API
 - Parser
- Works well with COM and .NET
- <http://www.driverdf.org>

cwm

- Open source API for Python from W3C
 - Parser
 - Serializer
- Extra features
 - Introduced N3 syntax alternative to RDF/XML
 - Rule language
 - Can be used with `–filter` mode as a sort of XSLT for Semantic Web content
 - <http://www.w3.org/2000/10/swap/doc/cwm.html>

Sesame

- Open source query engine developed by EU
- Supports several query languages
 - RQL
 - RDQL
 - SeRQL
- Supports several persistence mechanisms
 - RDBMS
 - Native
 - User-defined
- Tomcat-based server
- <http://openrdf.org>

Sesame: damldb - Microsoft Internet Explorer

Address: <http://localhost:8080/sesame/actionFrameset.jsp?repository=damldb>

Logged in: Combine User [log out] Read actions: SeRQL-S SeRQL-C RDQL RQL Extract Explore
Repository: DAML DB RDF Schema repository [select other] Modify actions: Add (file) Add (www) Add (copy-paste) Remove Clear

Evaluate a SeRQL-select query

Your query:

Response format:

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http://www.daml.org/2003/09/factbook/factbook-ont#climate	"mostly temperate, but tropical in Hawaii and Florida, arctic in Alaska, semiarid in the great west of the Mississippi River, and arid in the Great Basin of the southwest; low winter temperatures in the northwest are ameliorated occasionally in January and February by chinook winds from the eastern slopes of the Rocky Mountains"
http://www.daml.org/2003/09/factbook/factbook-ont#maritimeClaim	"12"
http://www.daml.org/2003/09/factbook/factbook-ont#territorialSea	"12"
http://www.daml.org/2003/09/factbook/factbook-ont#maritimeClaim	"200"
http://www.daml.org/2003/09/factbook/factbook-ont#exclusiveEconomicZone	"200"
http://www.daml.org/2003/09/factbook/factbook-ont#maritimeClaim	"24"
http://www.daml.org/2003/09/factbook/factbook-ont#contiguousZone	"24"
http://www.daml.org/2003/09/factbook/factbook-ont#coastline	"19924"
http://www.daml.org/2003/09/factbook/factbook-ont#landBoundaries	"12034"

Kowari

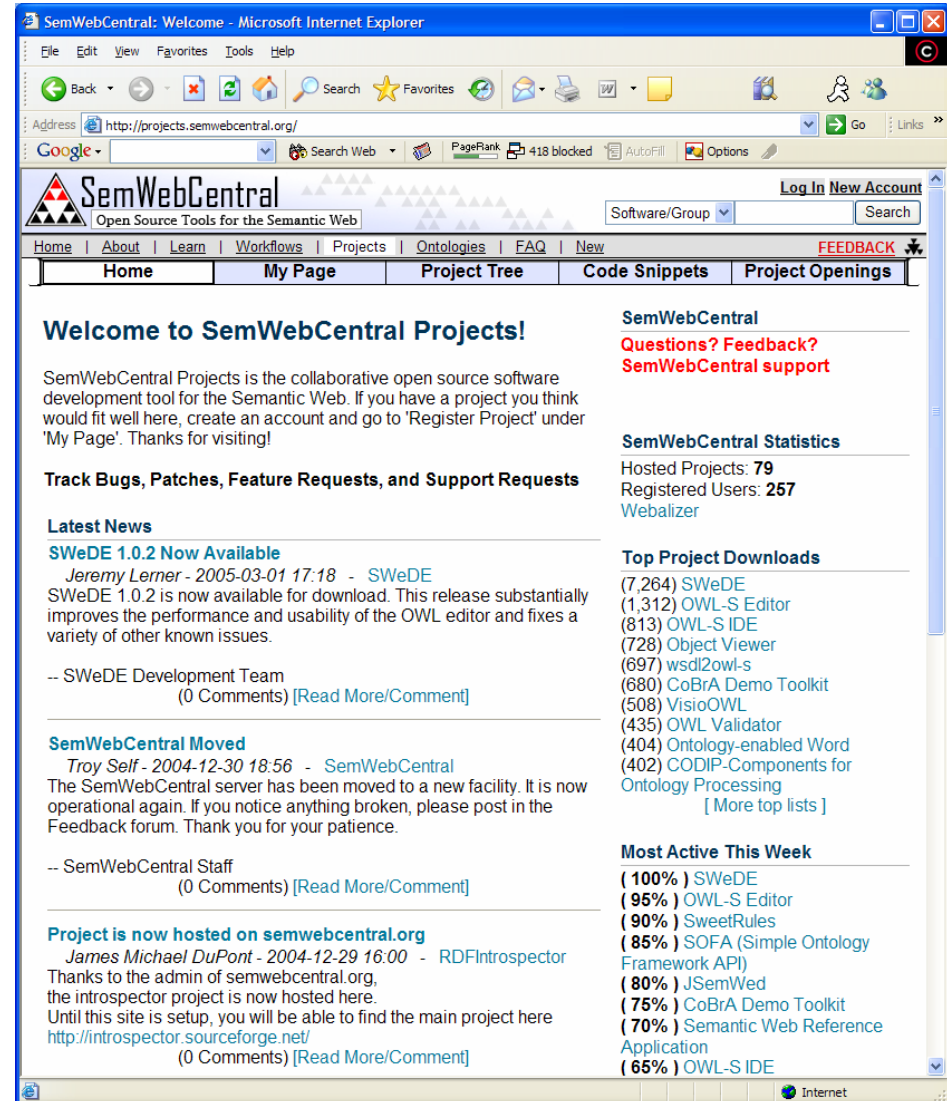
- Scalable open source persistence
 - 500 million+ statements
 - Transaction management
 - 100% Java
- Query language (ITQL)
- <http://www.kowari.org>

SweetRules

- Open source rule framework
- Executes [SWRL](#) and [RuleML](#) using a variety of rule engines
 - CommonRules
 - XSB Prolog
 - JESS
 - Jena 2
- Translates between various rule formats
- <http://sweetrules.projects.semwebcentral.org>

SemWebCentral

- Open source software development site dedicated to the Semantic Web
 - 79+ projects
 - 257+ developers
- Select projects by workflow or other attributes
- <http://semwebcentral.org>



The screenshot shows the SemWebCentral website in a Microsoft Internet Explorer browser window. The address bar displays <http://projects.semwebcentral.org/>. The website header includes the SemWebCentral logo, navigation links (Home, About, Learn, Workflows, Projects, Ontologies, FAQ, New), and a search bar. The main content area features a welcome message, a list of latest news items, and a sidebar with statistics and top project downloads.

Welcome to SemWebCentral Projects!

SemWebCentral Projects is the collaborative open source software development tool for the Semantic Web. If you have a project you think would fit well here, create an account and go to 'Register Project' under 'My Page'. Thanks for visiting!

Track Bugs, Patches, Feature Requests, and Support Requests

Latest News

- SWeDE 1.0.2 Now Available**
Jeremy Lerner - 2005-03-01 17:18 - SWeDE
SWeDE 1.0.2 is now available for download. This release substantially improves the performance and usability of the OWL editor and fixes a variety of other known issues.
-- SWeDE Development Team
(0 Comments) [\[Read More/Comment\]](#)
- SemWebCentral Moved**
Troy Self - 2004-12-30 18:56 - SemWebCentral
The SemWebCentral server has been moved to a new facility. It is now operational again. If you notice anything broken, please post in the Feedback forum. Thank you for your patience.
-- SemWebCentral Staff
(0 Comments) [\[Read More/Comment\]](#)
- Project is now hosted on semwebcentral.org**
James Michael DuPont - 2004-12-29 16:00 - RDFIntrospector
Thanks to the admin of semwebcentral.org, the introspector project is now hosted here. Until this site is setup, you will be able to find the main project here <http://introspector.sourceforge.net/>
(0 Comments) [\[Read More/Comment\]](#)

SemWebCentral Statistics

Hosted Projects: 79
Registered Users: 257
[Webalizer](#)

Top Project Downloads

- (7,264) SWeDE
- (1,312) OWL-S Editor
- (813) OWL-S IDE
- (728) Object Viewer
- (697) wsdI2owl-s
- (680) CoBrA Demo Toolkit
- (508) VisioOWL
- (435) OWL Validator
- (404) Ontology-enabled Word
- (402) CODIP-Components for Ontology Processing
[\[More top lists \]](#)

Most Active This Week

- (100%) SWeDE
- (95%) OWL-S Editor
- (90%) SweetRules
- (85%) SOFA (Simple Ontology Framework API)
- (80%) JSemWed
- (75%) CoBrA Demo Toolkit
- (70%) Semantic Web Reference Application
- (65%) OWL-S IDE

Other Resources

- SWANS Trade Show
 - Includes more commercial tools
- Dave Beckett's RDF Resource Guide
 - <http://www.ilrt.bris.ac.uk/discovery/rdf/resources/>
- Michael Denny's Survey of Ontology Tools
 - <http://www.xml.com/pub/a/2004/07/14/onto.html>