Protégé 4.1 and WebProtégé

Timothy Redmond and Tania Tudorache
Stanford Center for Biomedical Informatics Research

Ontolog call
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Protégé 4.1

- Protégé 4.1 is a comprehensive pluggable ontology development platform
- Java-Based (portability)
- Plugin Platform: OSGi + Eclipse Plugin Registry
- OWL API 3.0
  - OWL 2 Support

http://protege.stanford.edu
Protégé 4.1 – In Development

- Exist Working Versions for
  - Client-Server
  - Database Backend
- Planned
  - Collaborative Extensions
Protégé 4.1 Graphical Interface
Protégé 4.1 UI Principles

- Views show recently selected entities
- Based on familiar Protege 3.* UI
- Inference Built in to most views
- UI based on principles that follow the OWL 2.0 specification.
Protégé 4.1 Visualization
Protégé 4.1 Visualization
Protégé 4 Plugins

- Core System consists of over 140 plugins
- Visualization Plugins
  - Ontograf, OWLViz
- Inference Plugins
  - HermiT, FaCT++, Pellet, Snorocket, others
Protégé 4.1 Client-Server

- Server Interfaces
  - Checkout
  - Update
  - Commit
- Pluggable
  - Conflict Management
  - RPC
  - Server Backend
Protégé 4.1 Client-Server

- **Client modes:**
  - **Online**
    - Sees updates as they happen
    - Modifies ontology in real time
  - **Offline**
    - Can edit but edits must be committed later.
  - **Manual**
    - Updates and commits by user request
  - **Hybrid**
Protégé 4.1 Database

- Two OWL API database backends exist
- Integrated with Protege 4.1
- Some performance problems still exist
WebProtégé

- A **web-based client** for browsing and editing ontologies
- Support for **collaboration**:
  - Notes, discussions, proposals
  - Watching entities & notifications
  - Review
  - Access policies
- Highly **customizable user interface**
- **Extensible** by plug-ins
- **Backends**:
  - Protégé 3 OWL API (used in production setting) – OWL 1
  - OWL-API 3.0 (alpha stage) – OWL 1 & 2
  - Protégé frames, RDF(S), etc.

http://protegewiki.stanford.edu/wiki/WebProtege
WebProtégé – User Interface

Welcome to WebProtégé Demo!

My WebProtégé  NCI Thesaurus  W3C Translational Medicine Ontology

Classes  Properties  Individuals  Notes and Discussions

Classes

Create  Delete  Watch

Search: Type search str

Properties for Oncogene

Add property value  Delete property value

Property  Value  Lang

DEFINITION

A gene that normally directs cell growth. If mutated or overexpressed in a dominant fashion, it can release the cell from normal restraints on growth. It alone or in concert with other changes, converts the cell into a tumor cell. Alterations can be inherited or caused by an environmental exposure to carcinogens. NCI

Axioms for Oncogene

Superclasses (Necessary conditions)
Cancer_Gene
Gene_Found_In_Organism some Human
Gene_Plays_Role_In_Process some Oncogenesis

Notes Tree for Oncogene

New Topic  Expand All  Collapse All

Oncogene definition in Wikipedia

An oncogene is a gene that, when mutated or expressed at high levels, helps turn a normal cell into a tumor cell.

Direct link: http://en.wikipedia.org/wiki/Oncogene


Demo: http://webprotege.stanford.edu
Built as a **portal**: portlets provide pieces of functionality (similar to views in Protégé 4)

Build a new user interface by simply rearranging portlets in tabs

**Declarative user interface** in a XML file

Configurations can be for a particular user, or per user per project, or default

My WebProtégé page

Goal: *easily adjust* the user interface based on the user expertise and tasks
Form-based editing and configuration of the user interface for the development of ICD-11

http://icatdemo.stanford.edu
Other examples of form-based editing
WebProtégé pieces

WebProtégé User Interface (GWT)
- Portlets
  - Event manager
  - Other managers

WebProtégé Server (Java)
- Ontology Service
- Notes and changes Service
- Access policies service
  - Protégé 3 Impl.
  - OWL-API Impl.

... pluggable

Notes and changes Service
- Protégé 3 Impl.
- OWL-API Impl.

pluggable
WebProtégé: Current status and future directions

- WebProtégé (with Protégé 3 backend) is stable and used in production for the development of ICD-11
- We are finalizing the implementation of the WebProtégé with the OWL-API backend. Missing pieces: access policies, integration with Protégé 4 client-server
- Add features based on user requests
Dilvan Moreira provided a concurrent OWL-API implementation using the Clojure library (used currently in the WebProtégé backend).