Collaborative & WebProtégé

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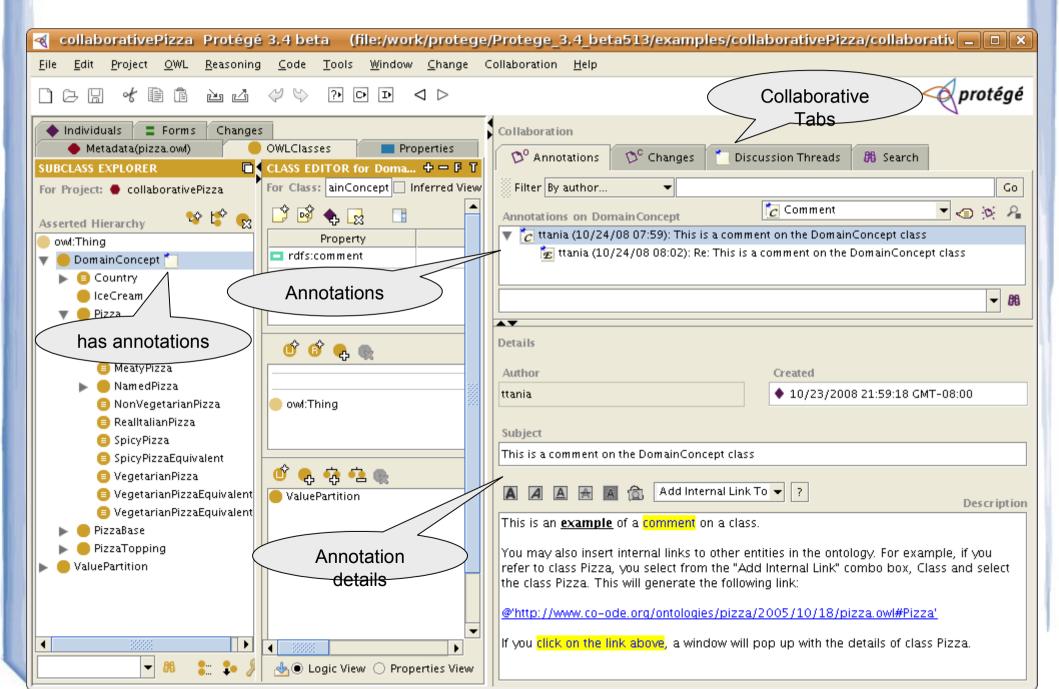
Collaborative Ontology Development

- Collaboration: several users contribute to the development of one ontology
 - Mechanisms for carrying out discussions, and
 - Reach consensus (e.g., polling, moderators)
 - Collaboration workflows no one-size fits all
- Social platform for developing ontologies
- Each community does it its own way

Collaborative Protégé Features

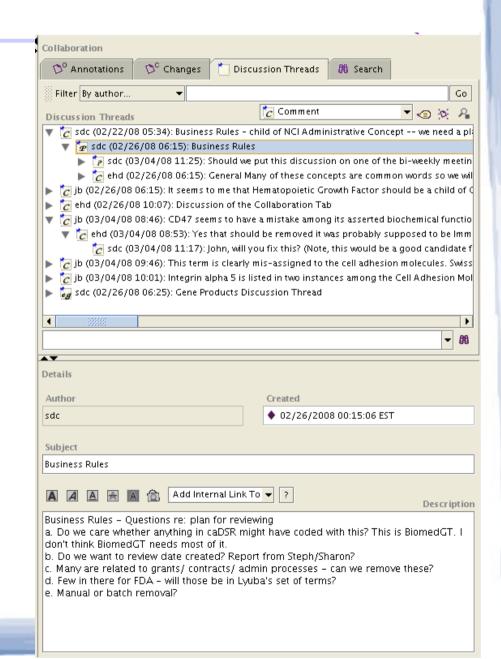
- Extension of existing Protégé system
- Support for:
 - annotating ontology components and changes in the ontology
 - discussion threads
 - proposals and voting
 - searching and filtering
 - defining users, groups, policies
- Works in Protégé 3.x OWL and Frames
- Available in multi-user and stand-alone modes
- Distributed with Protégé installation

Collaborative Protégé – Big brother of WebProtege



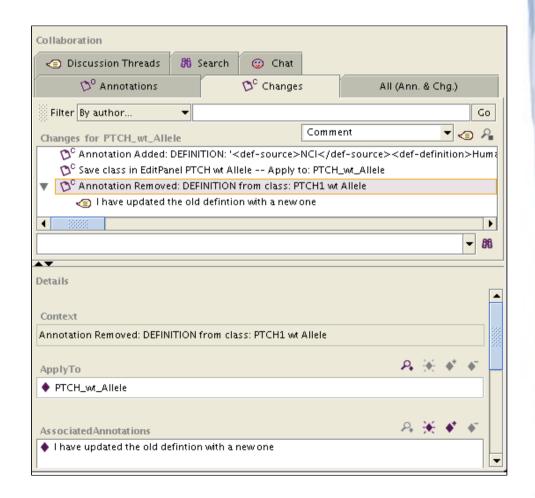
Annotations and Discussion Threads

- Annotations are linked to a specific ontology component
- Different types of annotations
- Annotations types can be extended with no extra coding
- Users may annotate:
 - classes
 - properties
 - individuals
 - the ontology as a whole
- Annotations may be filtered and searched based on different criteria



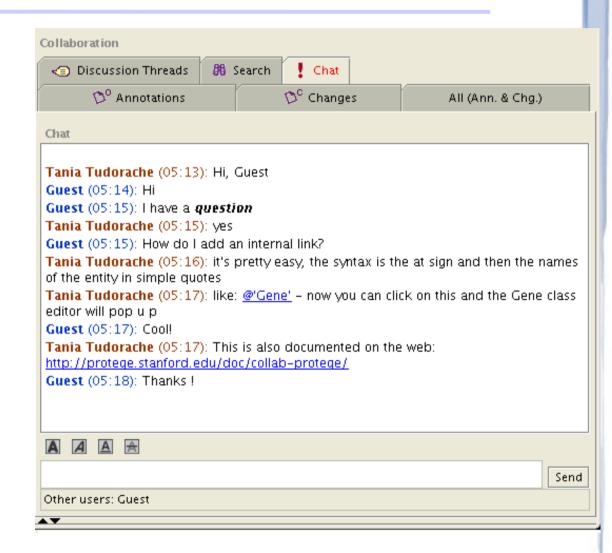
Changes Tab

- See the history of a concept
- Users may comment on changes; for example on a class rename operation or on a change of a domain property
- Browse the change details (e.g. author, creation date, subchanges, etc.)

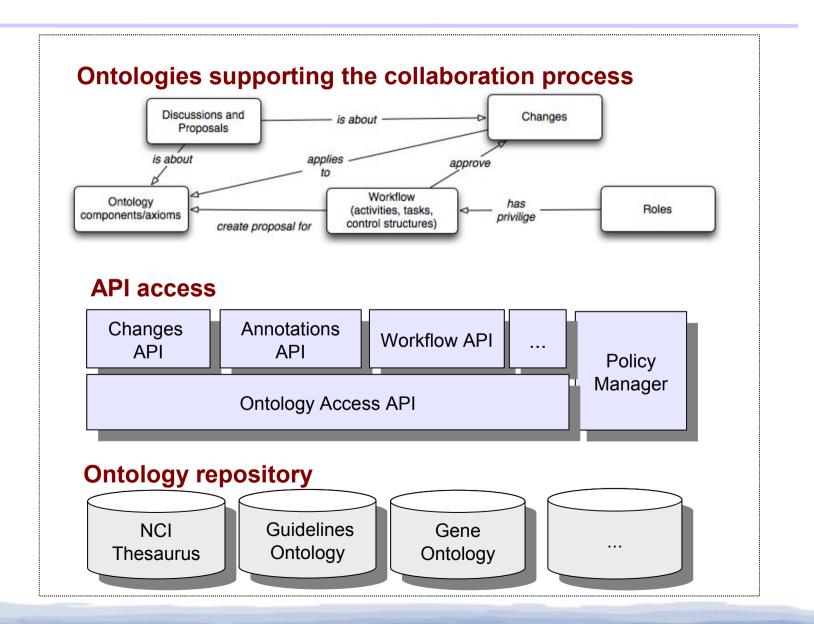


Chat Tab

- Exchange live messages between users connected to the same Protégé server
- Supports HTML formatting (hyperlinks, bold, italics, etc.)
- Internal links to ontology entities (e.g., @'Gene')
- Chat available also as a Tab plug-in



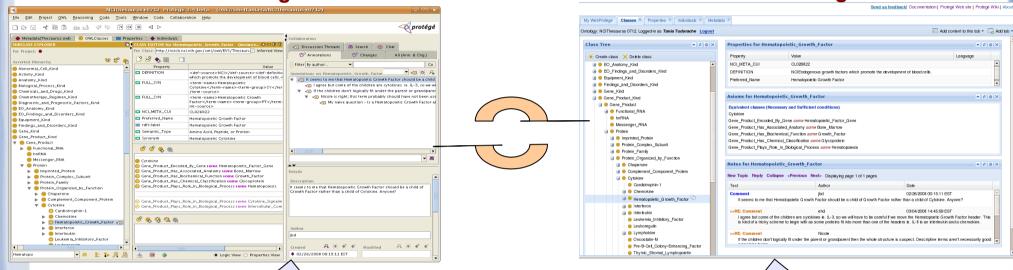
The Collaboration Framework

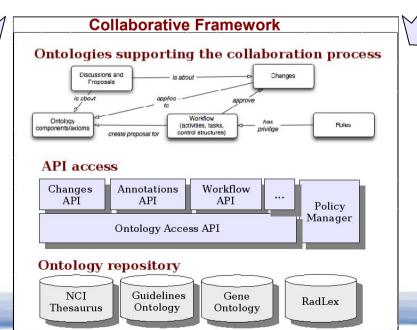


The Collaborative Framework + Clients

WebProtégé

Collaborative Protégé

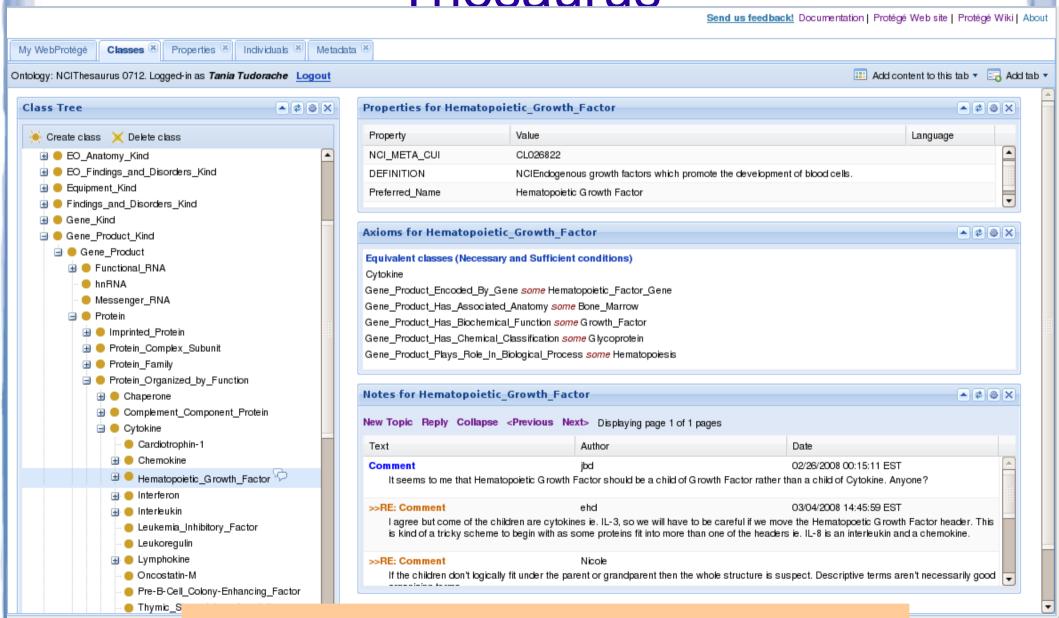




WebProtégé – quick overview

- WebProtégé is an open source light-weight ontology editor for the Web
- It is a Collaborative Protégé client
- Main features of WebProtégé:
 - Browsing of ontologies on the Web
 - Lightweight ontology editing
 - Designed using a portal metaphor: The user interface is composed of reusable components, called portlets
 - Customizable UI by drag-n-drop and by showing or hiding different ontology tabs
 - Extensible: Developers may easily implement their own tabs and portlets

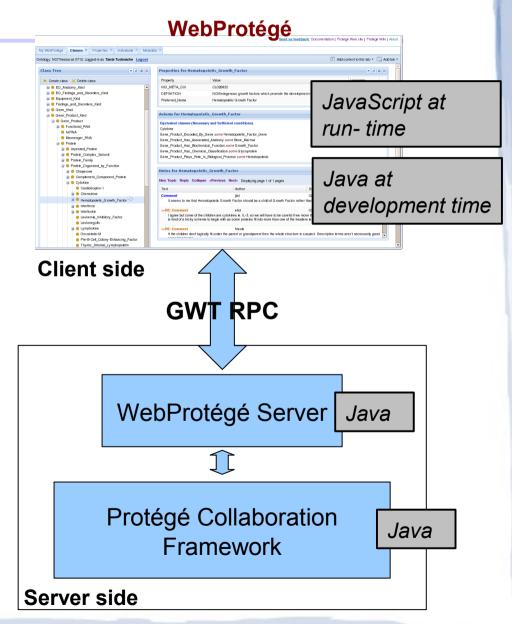
WebProtégé GUI – showing the NCI Thesaurus

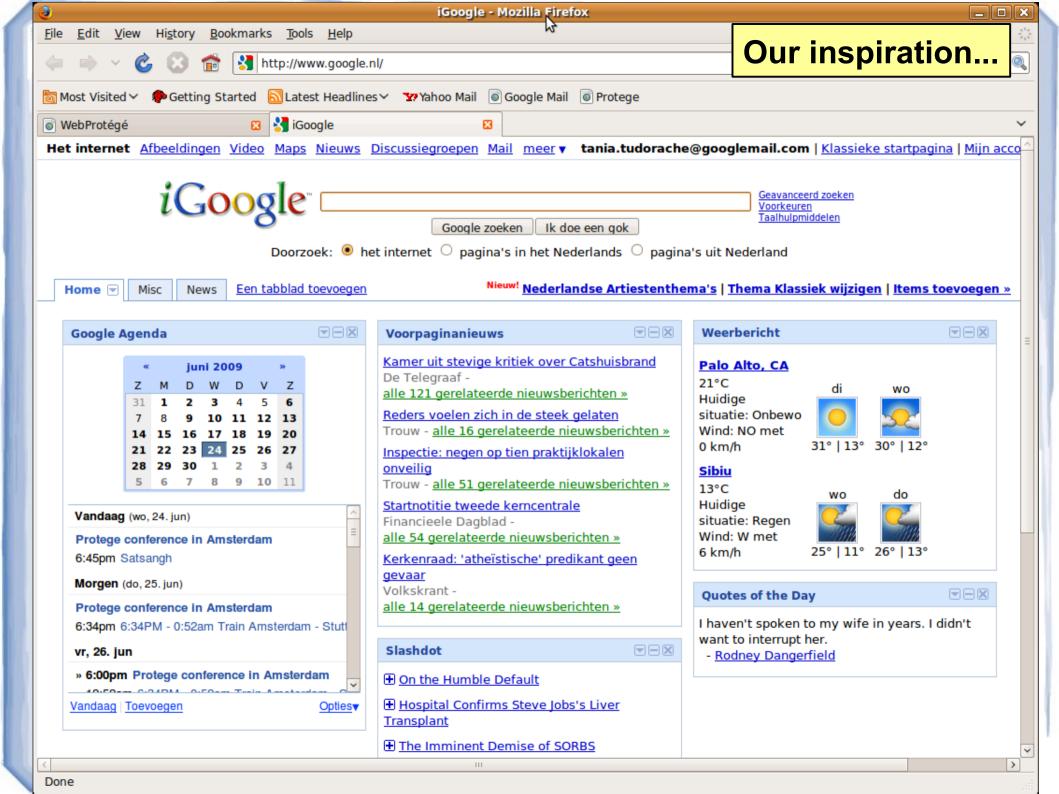


http://bmir-protege-dev1.stanford.edu/webprotege/

WebProtégé - Architecture

- 2 sides of the story: server and client
- Server is completely implemented in Java and makes API calls to Protégé
- Client side is developed in Java, and later compiled into JavaScript
- Communication between server – client is done with GWT RPC (can be done in other ways, too)

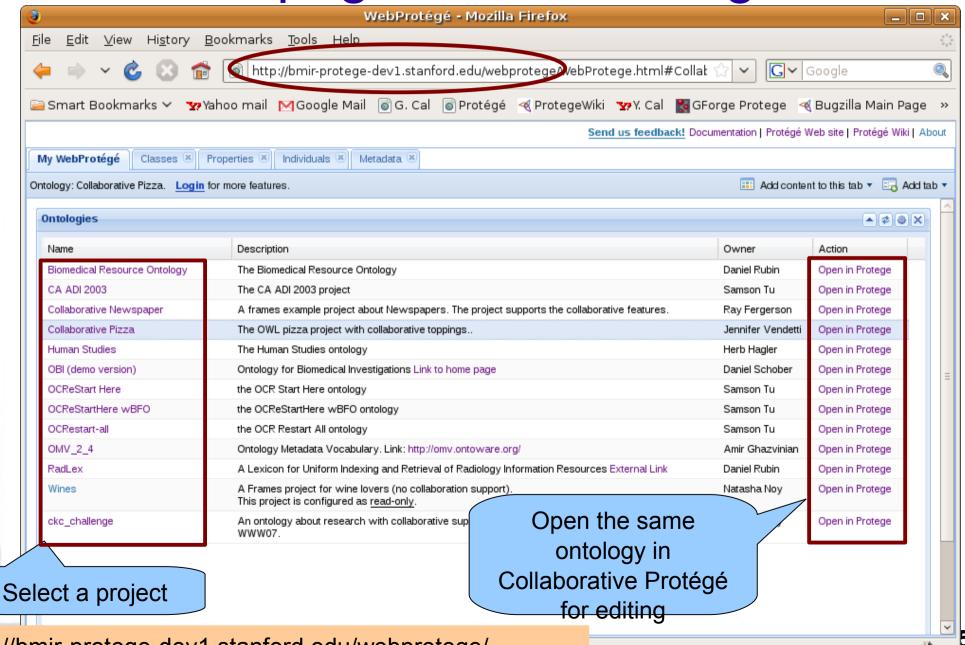




WebProtégé UI

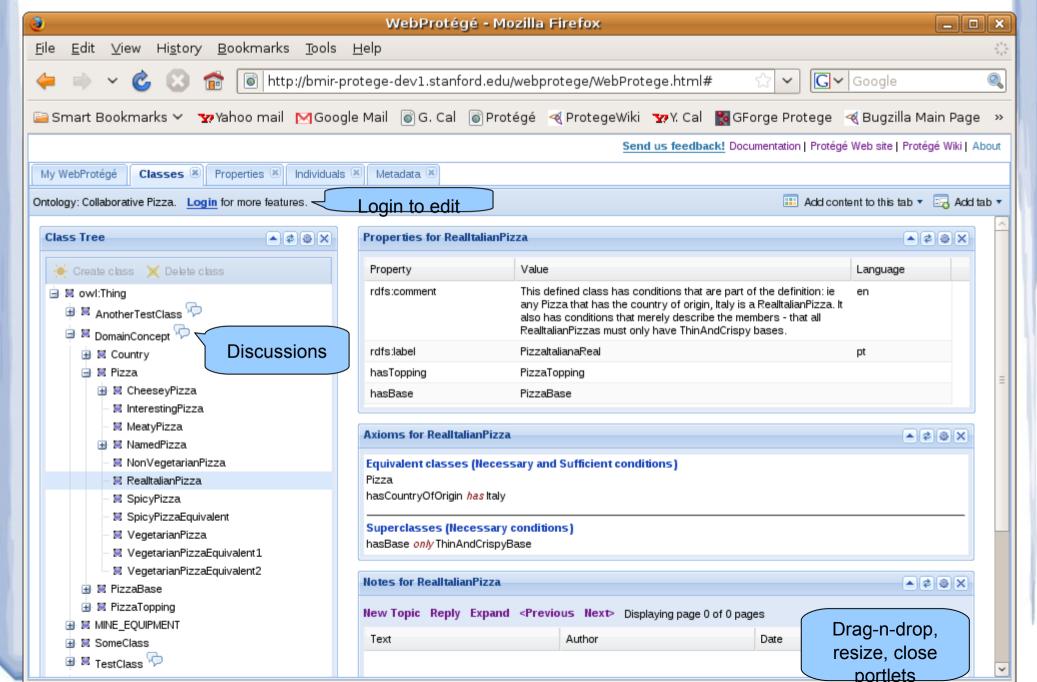
- Portal metaphor (inspired from MyYahoo and iGoogle)
 - Portlets are panels that have some functionality (e.g. display the properties of a class) and can be dragged around
 - Users can customize the layout of WebProtege:
 - Enable/disable tabs
 - Customize the portlets in a tab
 - Configuration is stored on server and it is per project/user
- Uses a 3rd party widget library: GWT-ext

First page in WebProtégé



http://bmir-protege-dev1.stanford.edu/webprotege/

Opening Collaborative Pizza



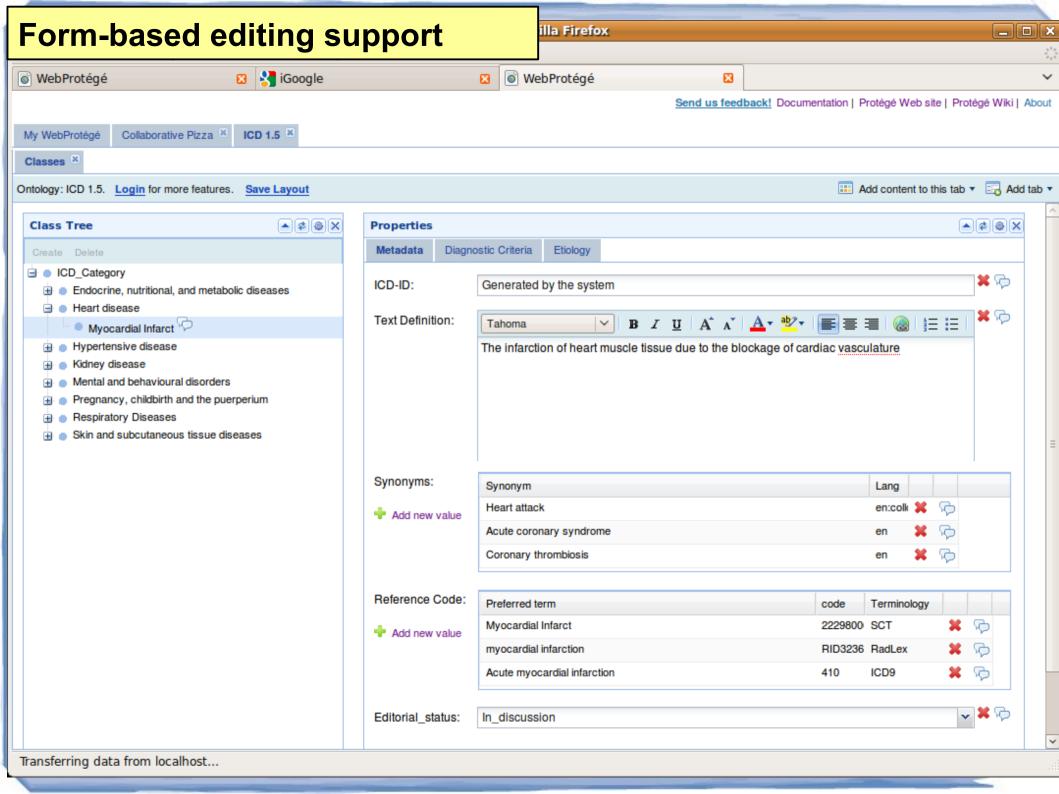
What is already out there...

- Tabs:
 - Classes
 - Properties
 - Individuals
 - Discussions
 - Metadata
 - Other terminologies (BioPortal search)
 - etc.

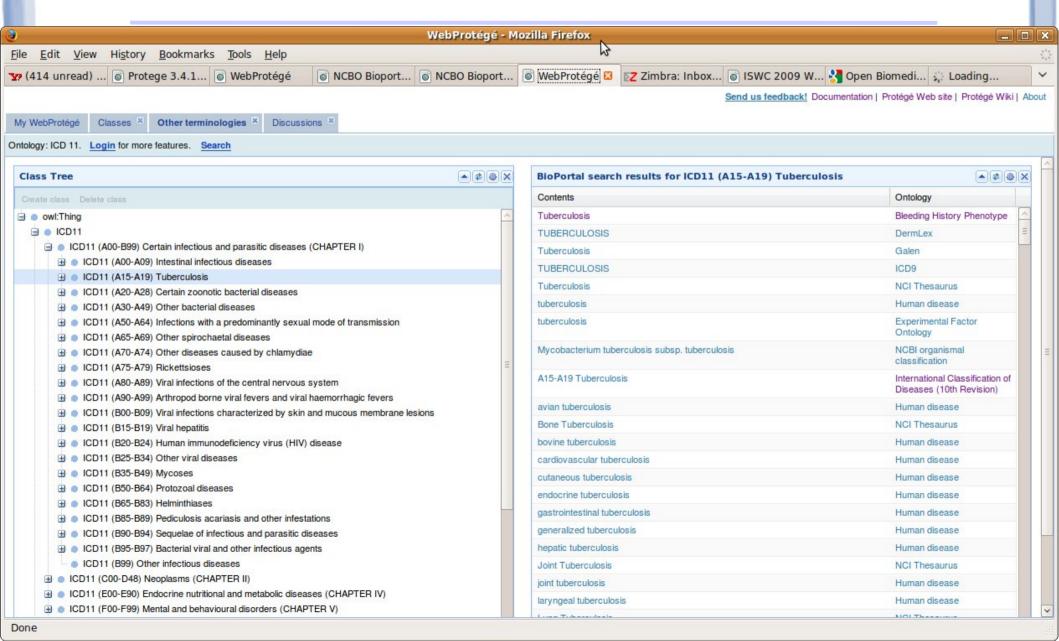
What is already out there...

Portlets:

- Class/property tree
- Property values
- Restrictions
- Notes and discussion
- Individuals list
- Property form
- OBO ← OWL converter
- etc.

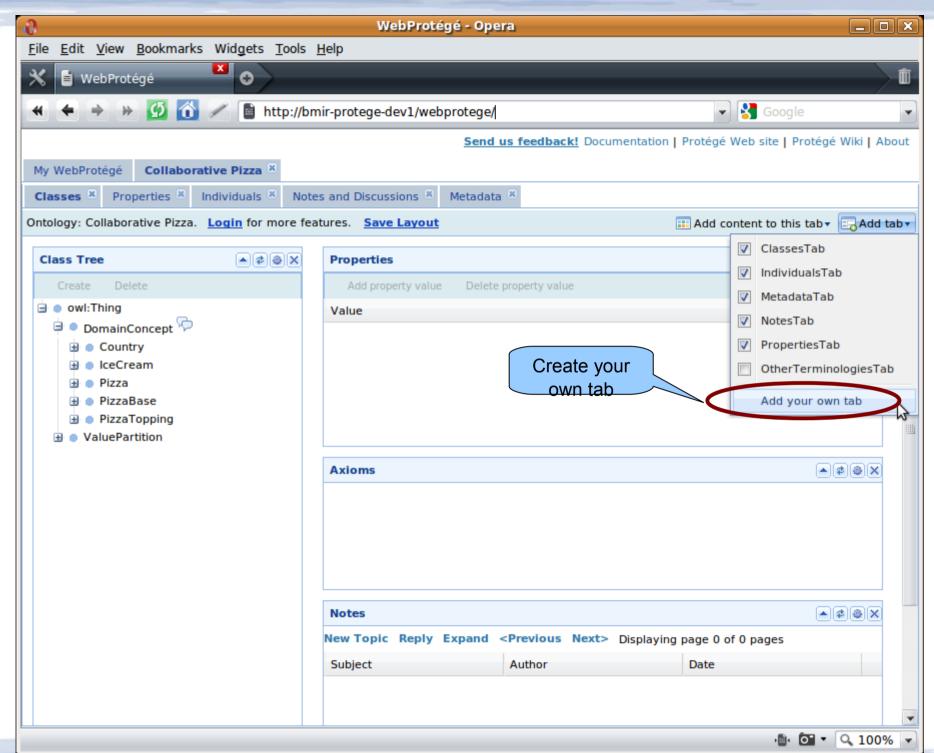


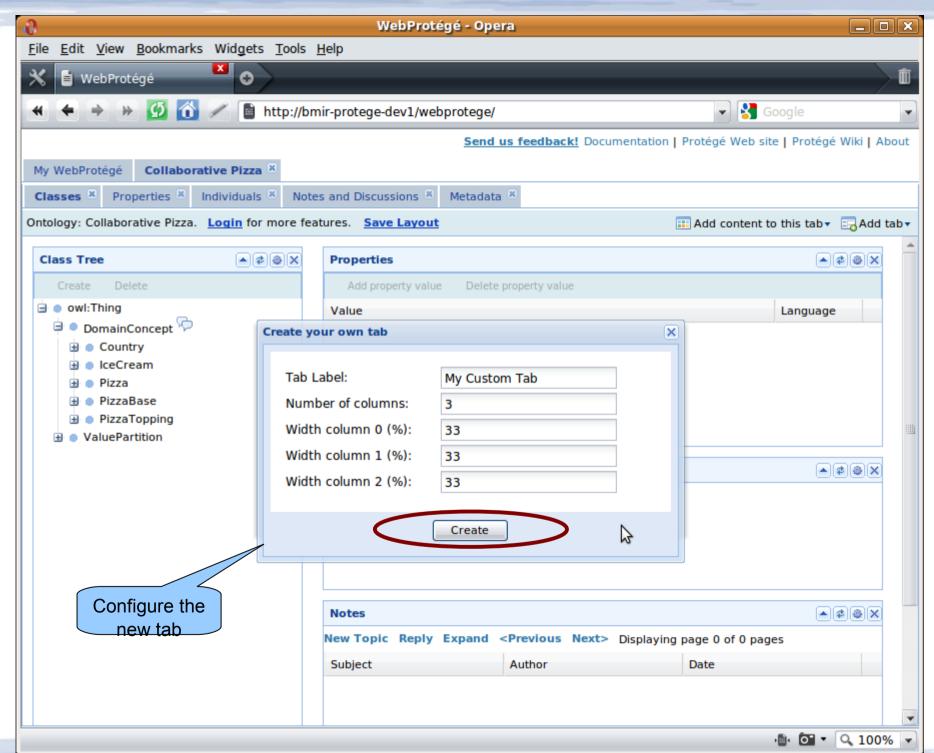
Other terminologies tab – see possibly related concepts from terminologies in BioPortal

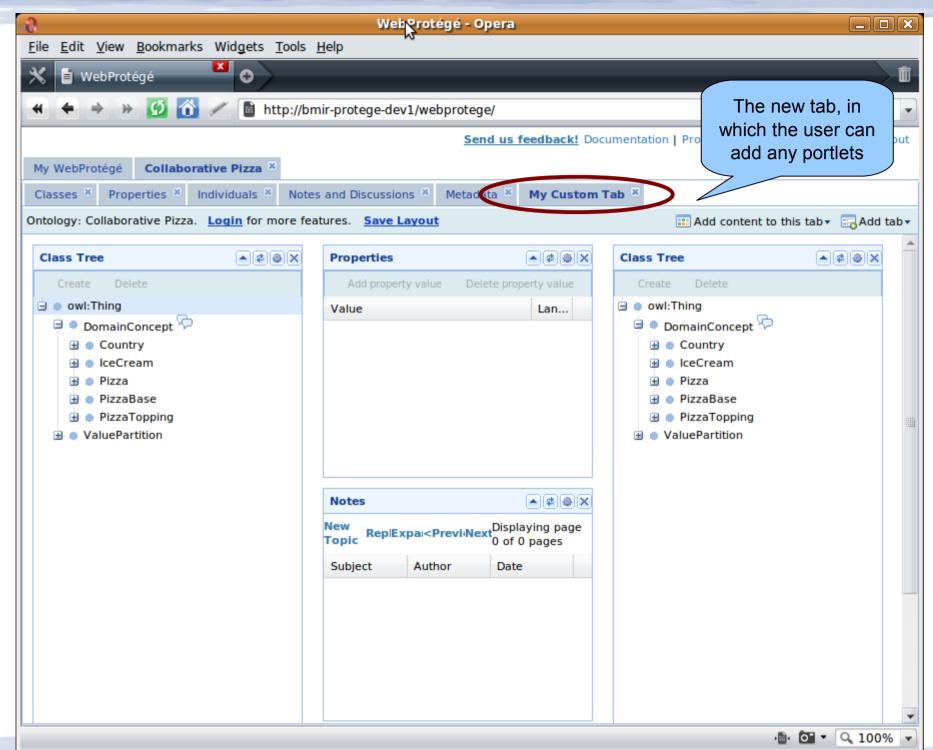


Customizable everything...

- Each community/user/group/etc. has its own requirements on the user interface
- ... tough on the developers
- Solution: Make everything customizable (as much as possible)
 - ... also tough on the developers :)







WebProtégé – a platform for developing your own web-based applications

- Pluggable + customizable → take it apart in pieces and use what you need in your applications
- Very soon:
 - Have a direct addressable URI for each ontology
 - Embed WebProtégé tabs, portetls or services in your own web application

WebProtégé installation

- Tomcat or another servlet engine
- Download the war file from the WebProtégé wiki page
- Follow the step-by-step Administrators' Guide

Extending WebProtégé

- Plug-in infrastructure very similar to Protégé's: create your own tabs and portlets
- Just extend: AbstractTab and AbstractEntityPortlet
- Implement your own RPCs, if needed
- Reuse existing portlet code
- Writing a tab as easy as creating an empty class that extends AbstractTab
- Promise to have soon some more documentation :)

What's next?

- Short term
- Migrate Collaborative Protégé and WebProtégé to Protégé 4
- Finalize the plug-in mechanism
- Improve the editing support
- Migrate to a new widget library
- Documentation!

What's next? (cont.)

- Medium term
- Support collaboration features that are not yet available
- Conflict management
- Workflow support
- Evaluate in different projects (We need your help!)
- Long term
- You tell us!

Get involved!

- If you would like to get involved, talk to us!
- Contributions from the community are welcome
- Implement your own plug-ins for WebProtégé
- If you used any of the tools, we would be happy to get your feedback!

THANK YOU!

Resources

- Collaborative Protégé Users' Guide
 - http://protegewiki.stanford.edu/index.php/Collaborative Protege
- Collaborative Protégé paper:
 - Supporting collaborative ontology development in Protégé, T. Tudorache, N. F. Noy, S. W. Tu, M. A. Musen, 7th International Semantic Web Conference, Karlsruhe, Germany, Springer. Published in 2008, http://bmir.stanford.edu/file_asset/index.php/1374/BMIR-2008-1331.pdf
- WebProtégé short paper:
 - Web-Protege: A Lightweight OWL Ontology Editor for the Web. Tania Tudorache, Jennifer Vendetti and Natalya Noy,
 http://www.webont.org/owled/2008/papers/owled2008eu_submission_40.pdf
- Try WebProtégé out:
 - http://bmir-protege-dev1.stanford.edu/webprotege/
- Accessing Collaboration features from other applications:
 - http://protegewiki.stanford.edu/index.php/ChAO_API
- Protégé client-server tutorial
 - http://protegewiki.stanford.edu/index.php/Protege_Client-Server_Tutorial