

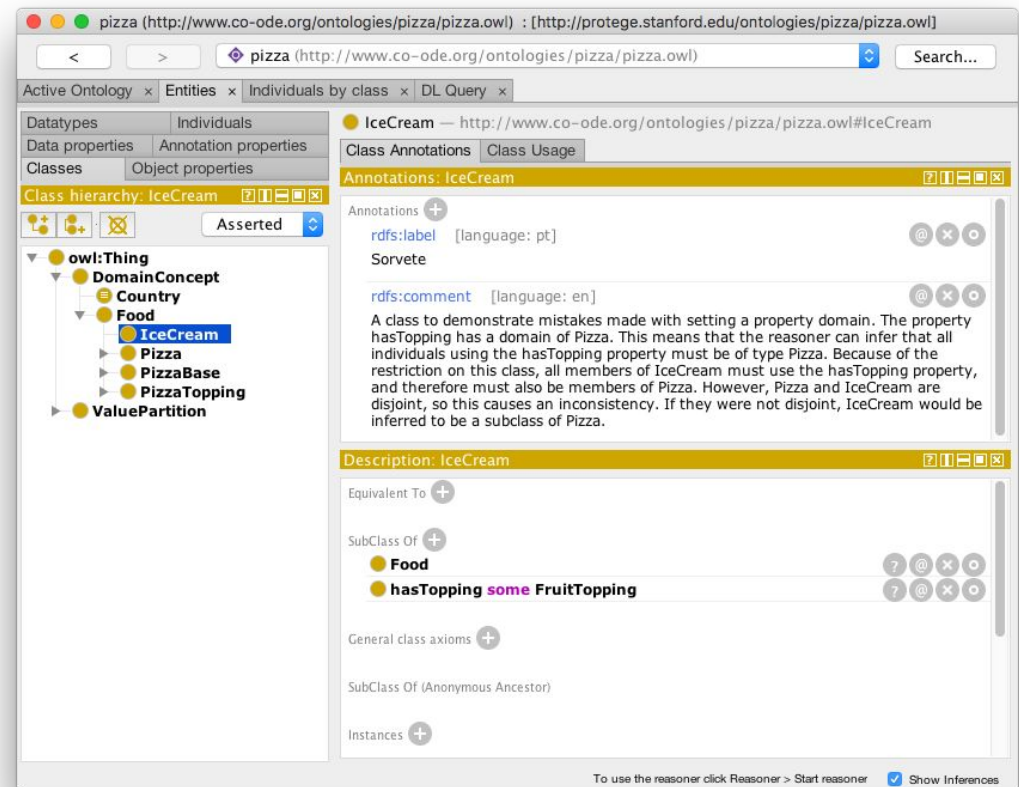
Introduction to Protégé

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Protégé Short Course
29 – 31 March, 2017
Stanford University

Protégé basics

- ❑ Open source Java tool
- ❑ W3C standards:
 - ❑ OWL 2, SPARQL
- ❑ Automated reasoning
- ❑ Active large community
- ❑ Customizable user interface
- ❑ Pluggable architecture



The Protégé website

<http://protege.stanford.edu>



Download for your operating system

Downloading Protégé

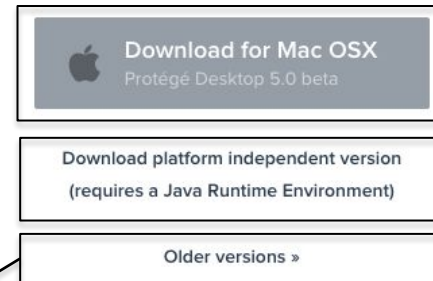


Protégé Desktop is a feature rich ontology editing environment with full support for the OWL 2 Web Ontology Language, and direct in-memory connections to description logic reasoners like HermiT and Pellet.

Protégé Desktop supports creation and editing of one or more ontologies in a single workspace via a completely customizable user interface. Visualization tools allow for interactive navigation of ontology relationships. Advanced explanation support aids in tracking down inconsistencies. Refactor operations available including ontology merging, moving axioms between ontologies, rename of multiple entities, and more.

 Screenshots  Documentation  Resources

- ✓ W3C standards compliant
- ✓ Customizable user interface
- ✓ Visualization support
- ✓ Ontology refactoring support
- ✓ Direct interface to reasoners
- ✓ Highly pluggable architecture
- ✓ Cross compatible with WebProtégé



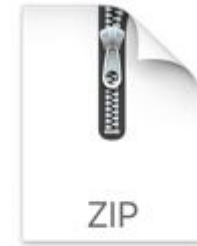
Platform specific
release (includes Java)

Older Protégé releases

Platform independent
release (no Java)

After downloading Protégé

- A compressed archive is stored locally
- Extract contents of the archive
- New folder will appear:
 - “Protege-5.2.0”

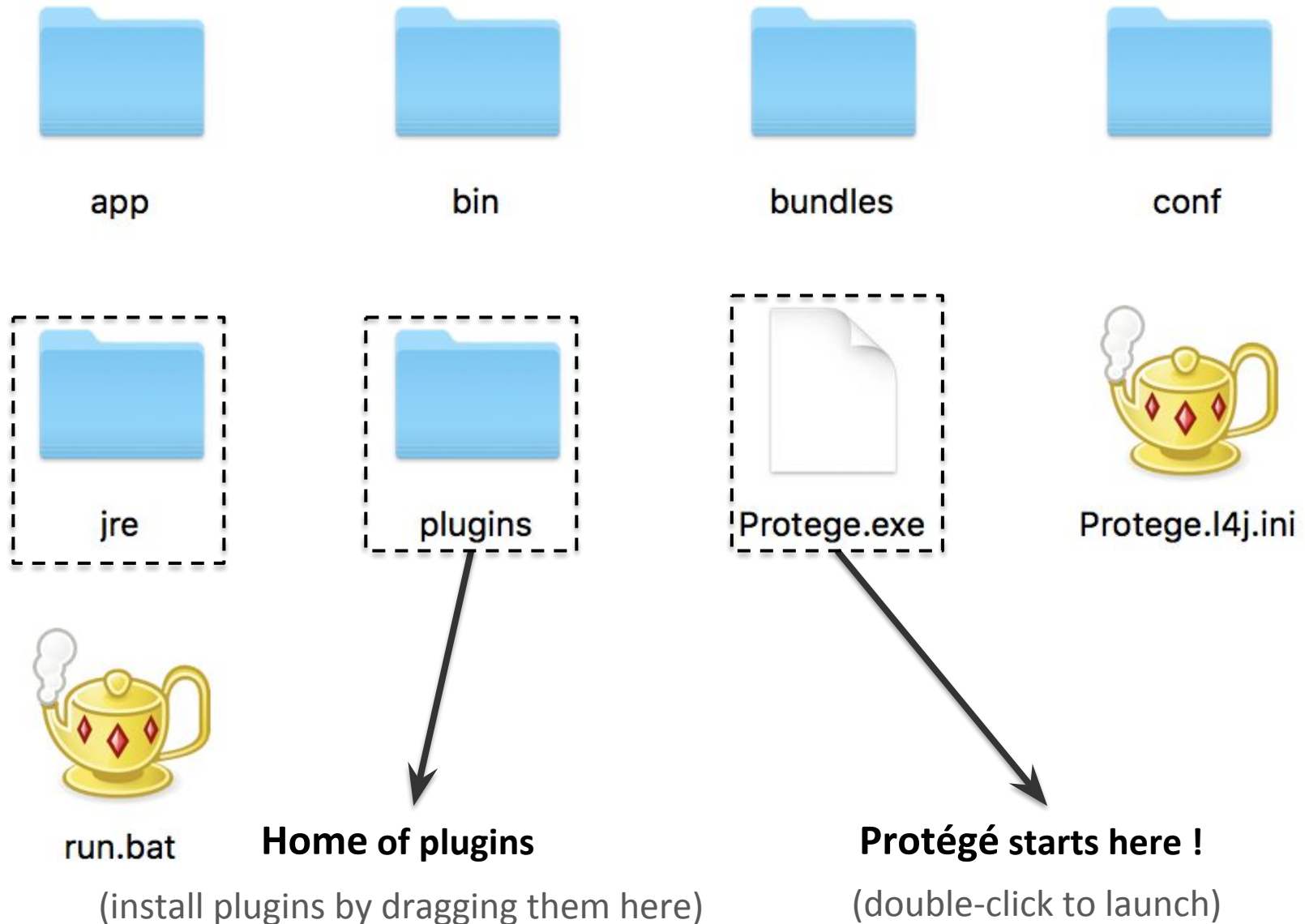


Protege-5.2.0-os-
x.zip



Protege-5.2.0

Protégé folder (platform-specific)



Protégé folder (on Mac OSX)



Protégé



Double-click to start

Mac OSX installation: https://protegewiki.stanford.edu/wiki/Install_Protege5_Mac

pizza (http://www.co-ode.org/ontologies/pizza/pizza.owl) : [http://protege.stanford.edu/ontologies/pizza/pizza.owl]

< > pizza (http://www.co-ode.org/ontologies/pizza/pizza.owl) Search...

Active Ontology x Entities x Individuals by class x DL Query x

Datatypes Individuals
Data properties Annotation properties
Classes Object properties

Class hierarchy: IceCream ? || = □ ×

Asserted

owl:Thing
DomainConcept
Country
Food
IceCream
Pizza
PizzaBase
PizzaTopping
ValuePartition

IceCream — http://www.co-ode.org/ontologies/pizza/pizza.owl#IceCream

Class Annotations Class Usage

Annotations: IceCream ? || = □ ×

Annotations
rdfs:label [language: pt]
Sorvet

TABS

ONTOLOGY

SEARCH

rdfs:comment [language: en]
A class to demonstrate mistakes made with setting a property domain. The property hasTopping has a domain of Pizza. This means that the reasoner can infer that all individuals using the hasTopping property must be of type Pizza. Because of the restriction on this class, all members of IceCream must use the hasTopping property, and therefore must also be members of Pizza. However, Pizza and IceCream are disjoint, so this causes an inconsistency. If they were not disjoint, IceCream would be inferred to be a subclass of Pizza.

Description: IceCream ? || = □ ×

Equivalent To +

SubClass Of +
Food
hasTopping some FruitTopping

General class axioms +

SubClass Of (Anonymous Ancestor)

Instances +

VIEW

To use the reasoner click Reasoner > Start reasoner ☒ Show Inferences

User interface

Tabs

Top level view elements

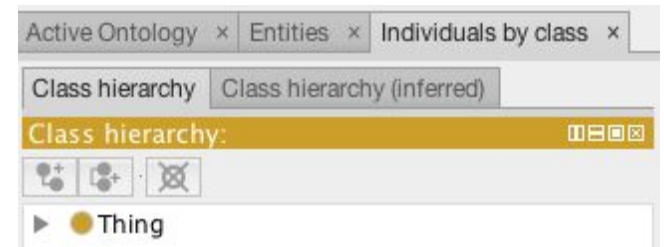
E.g., 'Active Ontology', 'Entities'



Views

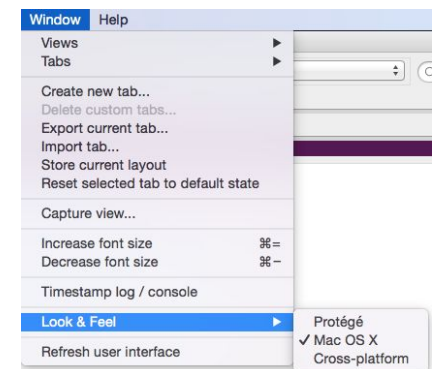
Tab-specific views

E.g., 'Class Hierarchy'

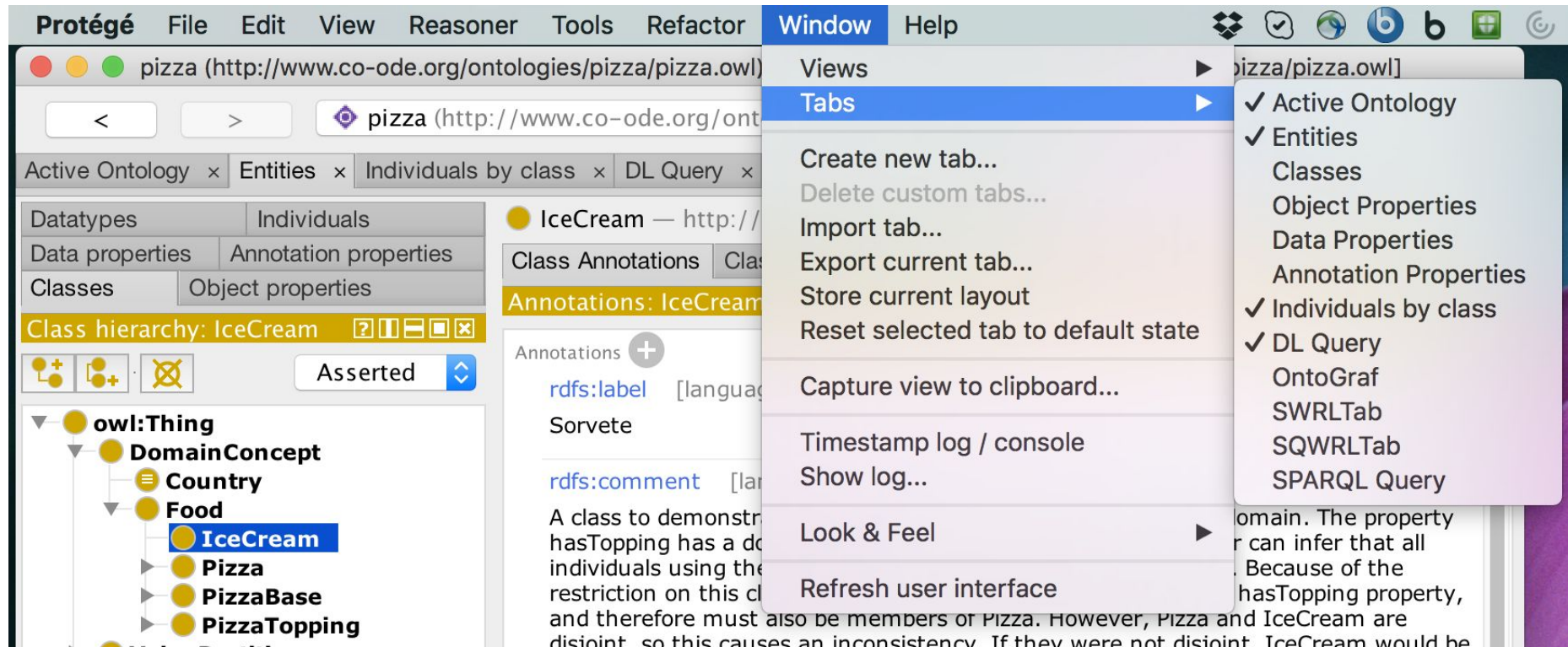


Look & Feel

“skins” for Protégé



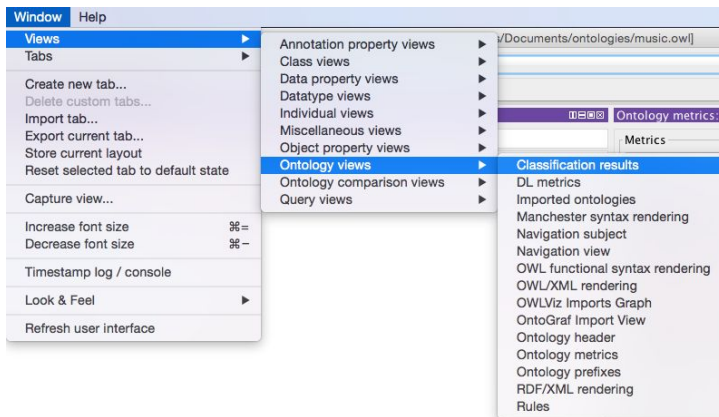
Protégé tabs



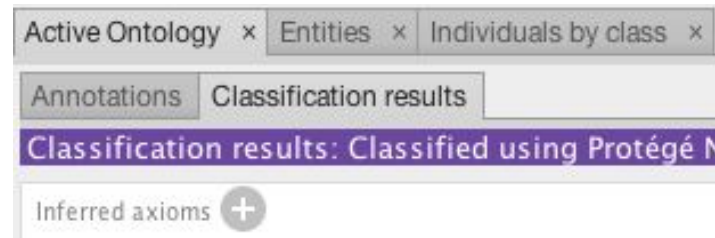
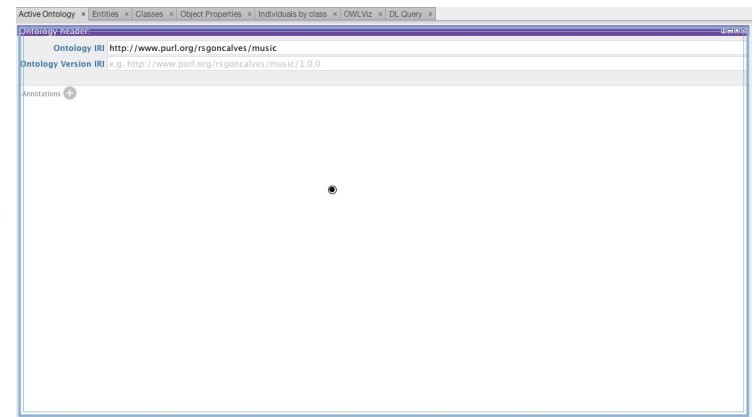
Add a new tab: Window menu -> Tabs

Protégé views

(1) Select type of view

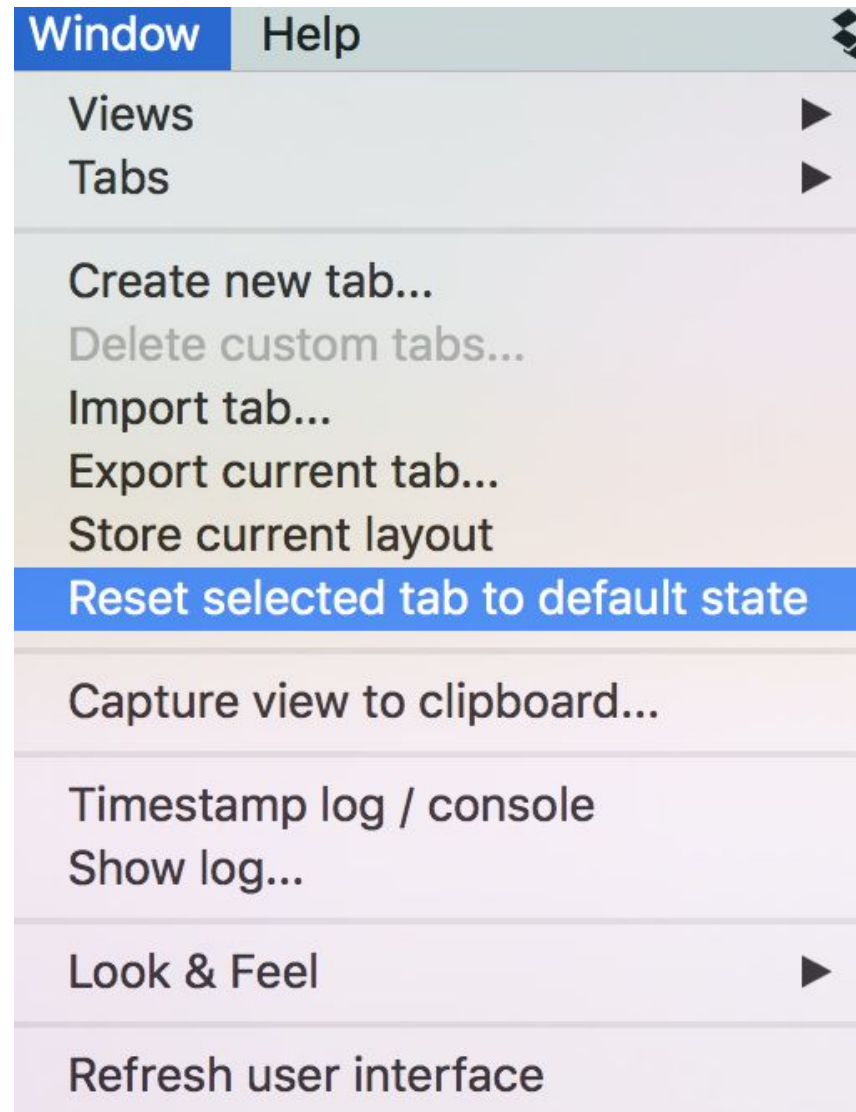


(2) Select a drop-off point

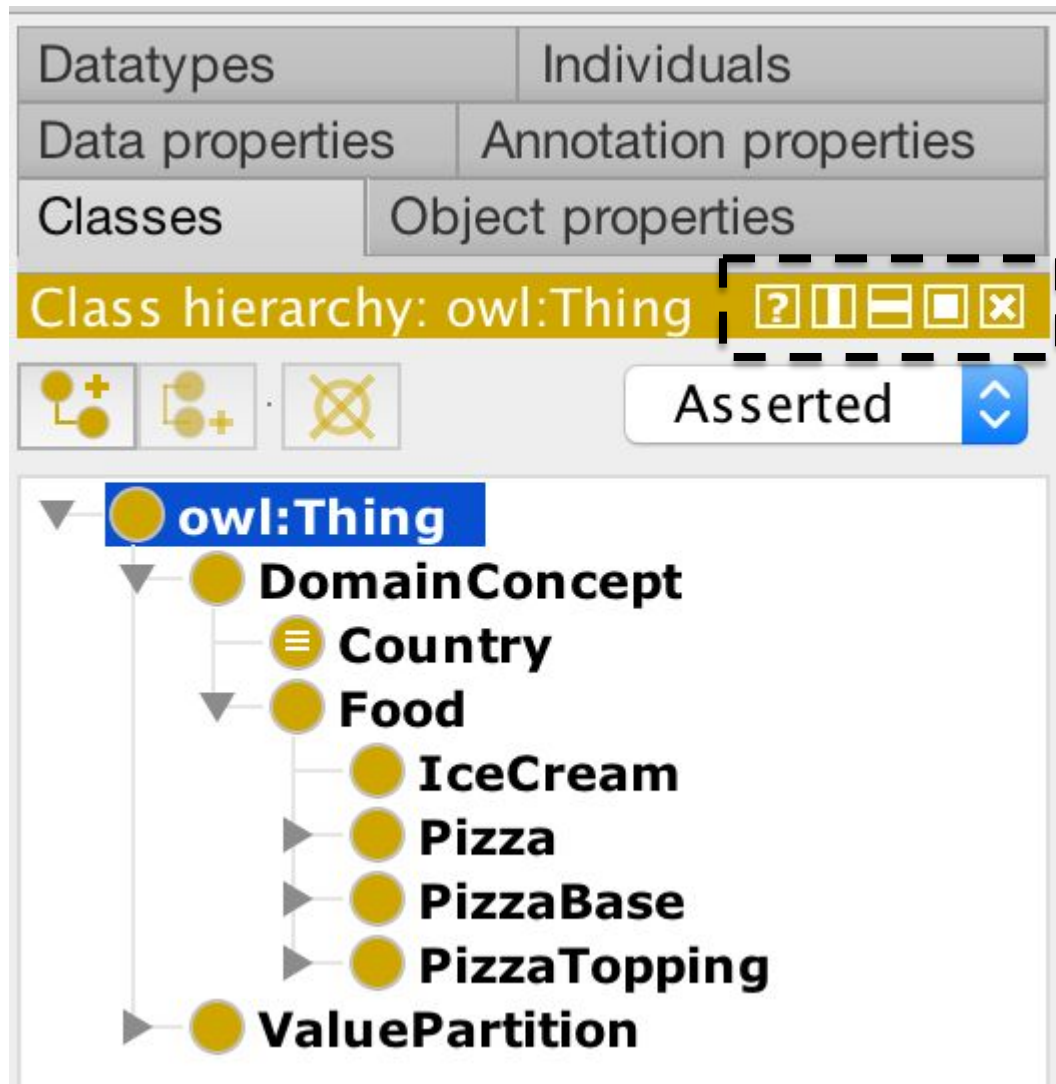


(3) The view appears within selected tab

Resetting a tab



View controls



Help

Split horizontally

Split vertically

Float

Delete

Sections in a view

The screenshot shows a software interface with a yellow header bar labeled "Description: CheeseyPizza". Below the header, there are several sections separated by dashed lines. The first section is titled "Equivalent To" and contains the text "Pizza and (hasTopping some CheeseTopping)". The second section is titled "SubClass Of" and contains the text "Add new element in section". The third section is titled "General class axioms" and contains the text "hasBase some PizzaBase". The fourth section is titled "SubClass Of (Anonymous Ancestor)" and contains the text "hasBase some PizzaBase". The fifth section is titled "Instances".

Annotations with purple arrows:

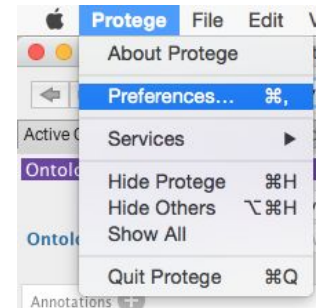
- An arrow points from the "SubClass Of" section title to the text "Add new element in section".
- An arrow points from the "SubClass Of" section title to the "Section" label.
- An arrow points from the "Remove" button to the "Remove" label.
- An arrow points from the "Edit" button to the "Edit" label.

Buttons and icons:

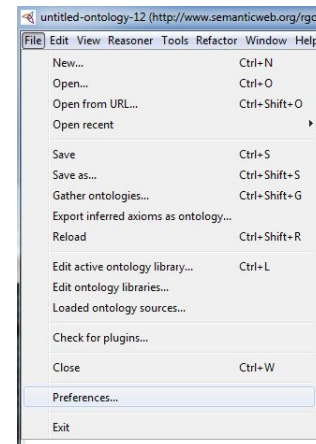
- Buttons: "?", "@", "X", "O" (circled).
- Buttons: "?", "@", "X", "O" (circled).
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Protégé preferences

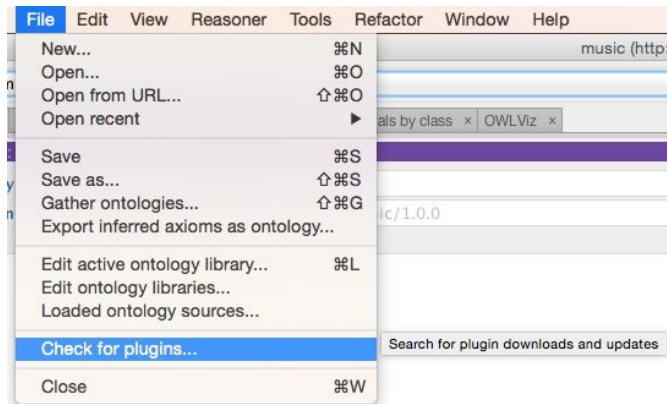
Mac OS X (native look & feel)
Access through Mac menu bar
Protégé > Preferences



Other operating systems
File > Preferences

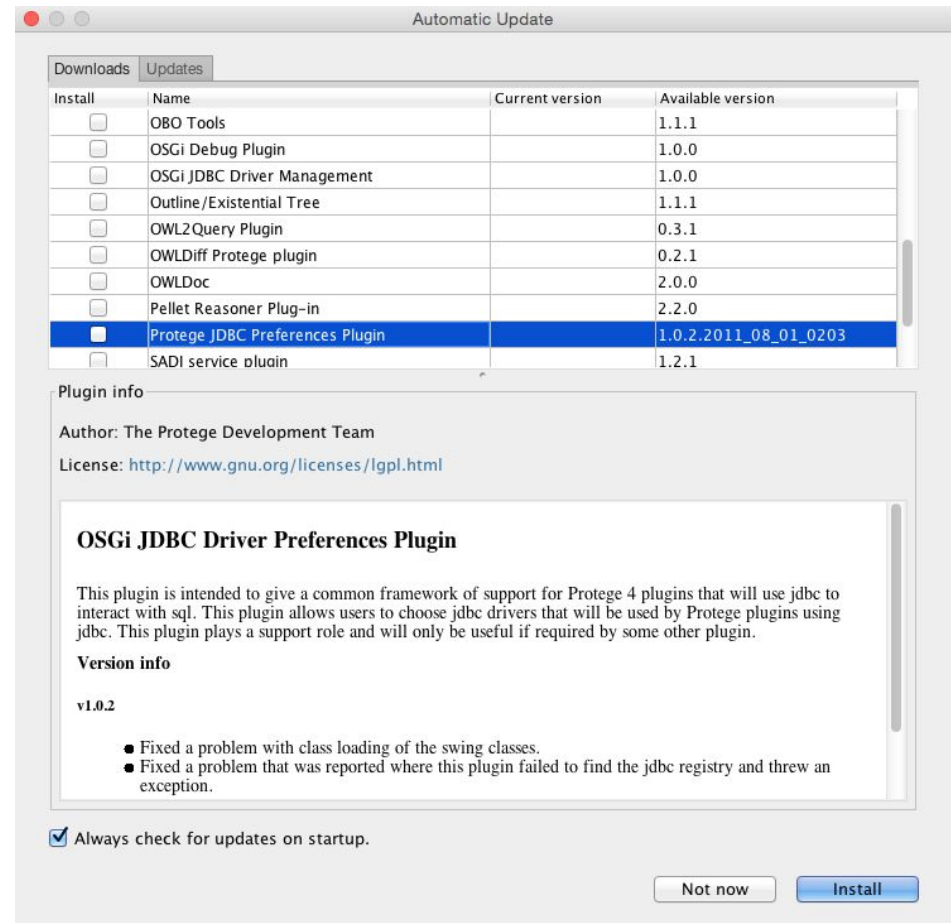


Plugins: 'Automatic Update' wizard



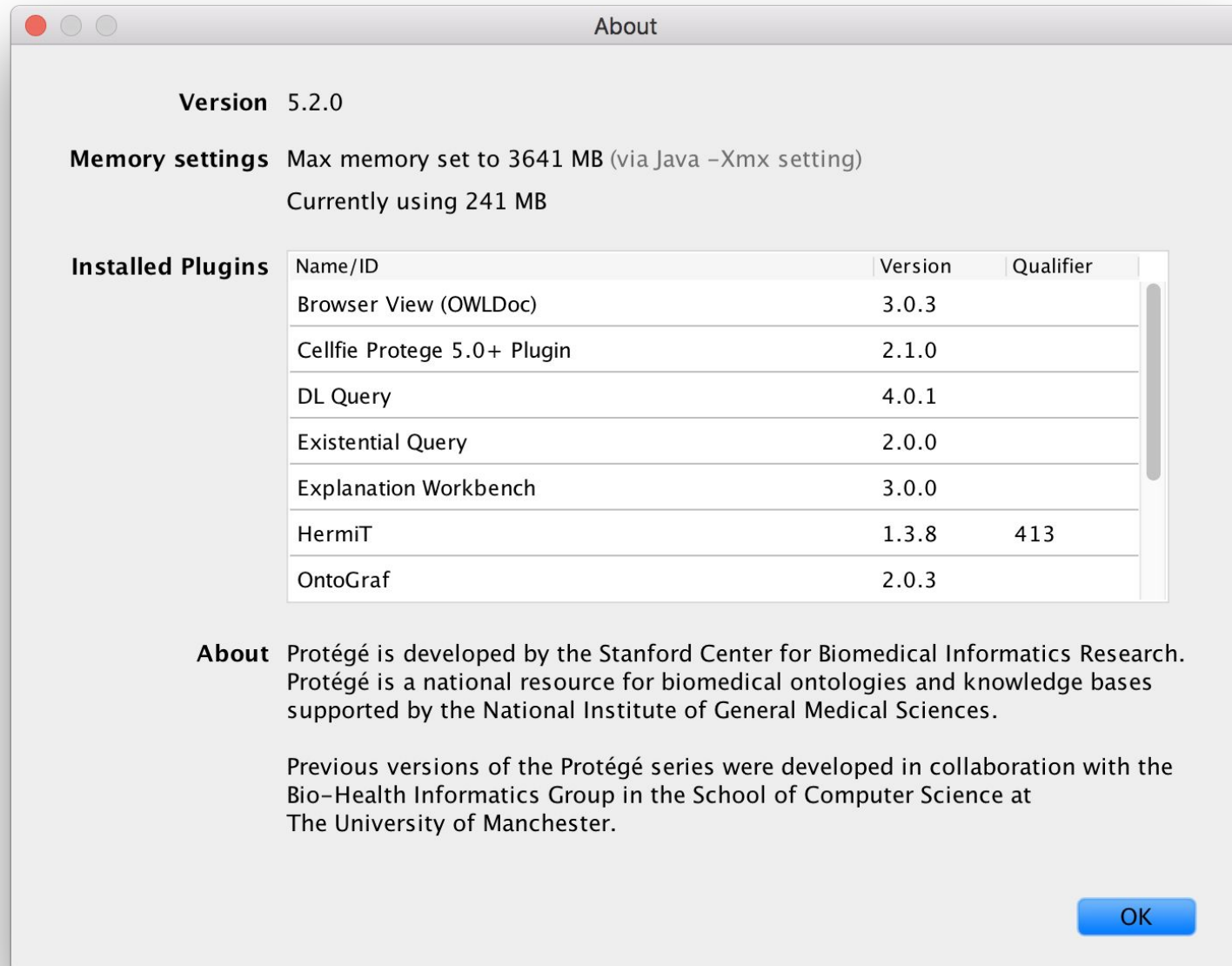
Triggers 'Automatic Update' wizard

List of plugins and their information

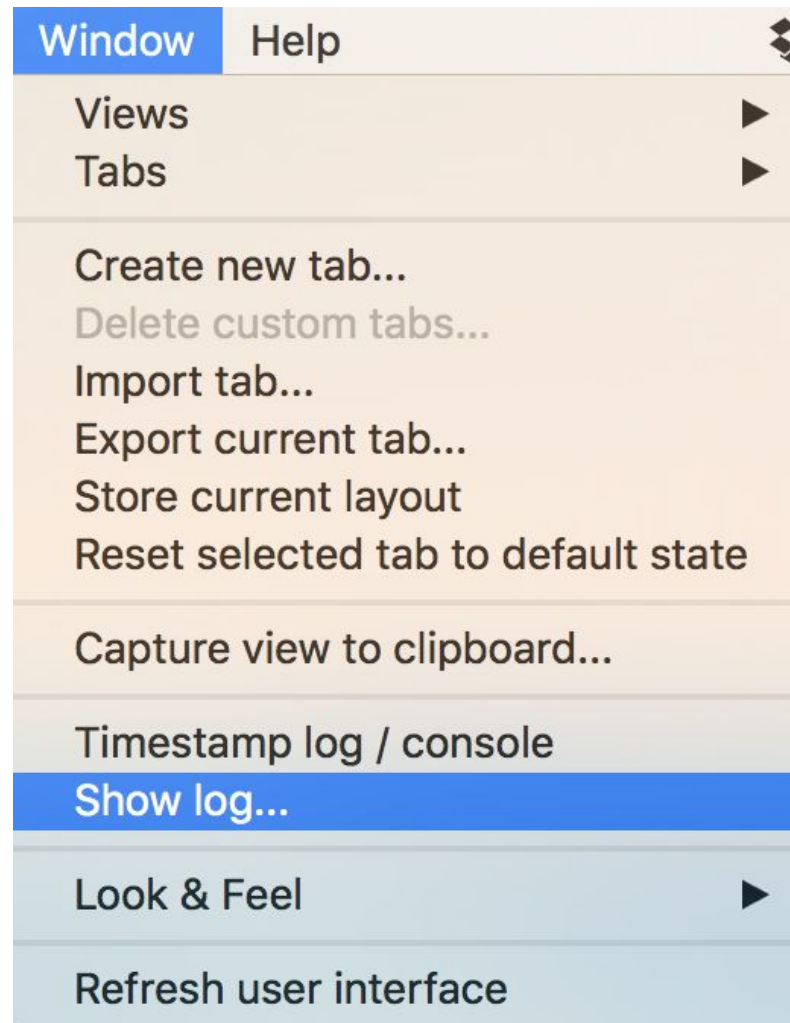


Protégé and plugin versions

Help menu -> About



Show log



Screencasts

Screencasts of basic operations and important features:

<https://www.youtube.com/user/TheProtegeProject/playlists>

Playlist: “Protégé 5 Screencasts”