# Setting up & configurating Protege 4.x for COSMOS nmr-CV editing

## Scope of this Document

This is a short tutorial that aims at providing COSMOS participants and external interested parties with the necessary basic set-up information in order to open and manipulate the controlled vocabularies (CVs) to be developed in support of the COSMOS nmrML exchange standard. As COSMOS agreed to develop the CV in the OWL syntax, this guideline focuses on the set-up of the open source ontology editor Protégé 4.x. As Protégé is quite a complex tool, we recommend people that just want to have a quick glance at the CV (without wanting to manipulate it in any way) to open its HTML serialization in a normal web browser. This HTML version of the CV can be found under nmrML\docs\CVDocumentation.

The decision to represent the nmrML CV in OWL rather than OBO was made for the following reasons:

* OWL is the W3C recommended standard.
* OWL is based on RDF, we foresee an easy migration towards future Open Linked Data approaches.
* W3c supported Query languages like SPARQL and rule set-ups like SWRL exist.
* OWL allows easy extension of formal semantics up to full description logics (DL).
* A plethora of open source tools and libraries is available.
* The Protégé editor is pretty robust compared to OBO Edit.
* Major Top level ontologies (BFO) and bio-upper level ontologies (Biotop) are available in OWL format.

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## Download & Install protégé 4.x

Download & Install the latest Java-based Protégé 4 form <http://protege.stanford.edu/download/download.html> , as described at <http://protegewiki.stanford.edu/wiki/Protege-OWL_4_FAQ#How_do_I_install_Protege-OWL.3F>

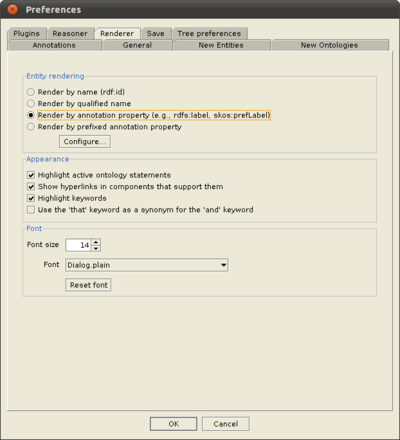
Start Protégé via its .exe or its .bat file. A new detault ontology will be created. Ignore it and open the latest nmrMLv.x.owl file in the Github at: nmrML\ontologies via File/Open.

## Basic Orientation within GUI

When an ontology is opened, P.4 per default will open the first pane, the Active Ontology tab (to the left), which will display the general metadata, import structure and ontology metrics pertaining to the whole representational artefact/CV rather than to singular representational units. For class editing you will use the Classes tab.

## Setting the hierarch pane rendering preferences

Within the File/Preferences/Rendering setting tick the following boxes. This will display the classes in the Class Tab/hierarchy pane (to the left of the GUI) by the classes rdfs:label, given one is provided. If no label is provided, the renderer will display the class by its ID.

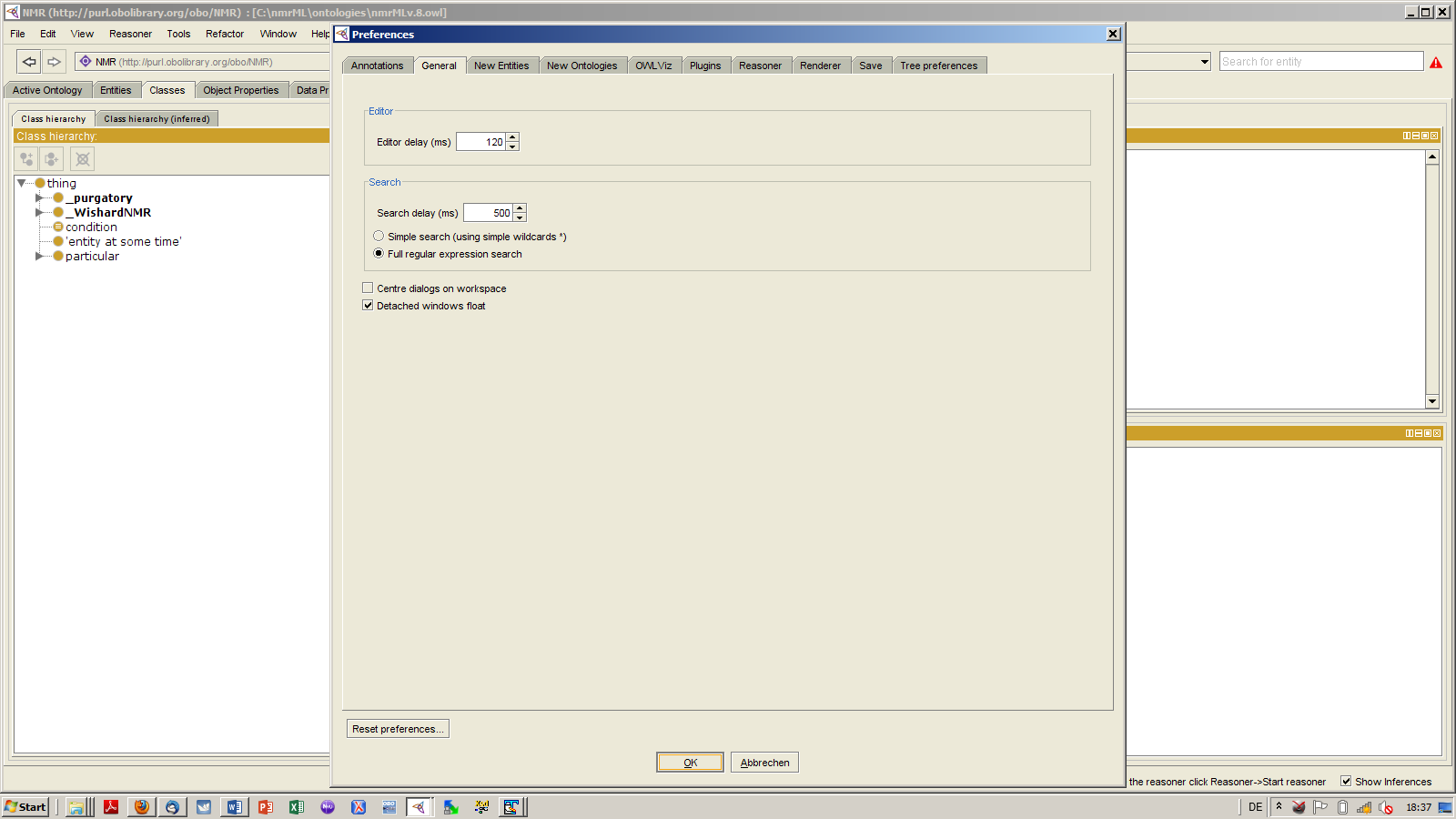
[](http://protegewiki.stanford.edu/wiki/File:Renderer-prefs.png)

There are four options for the type of renderer you can select

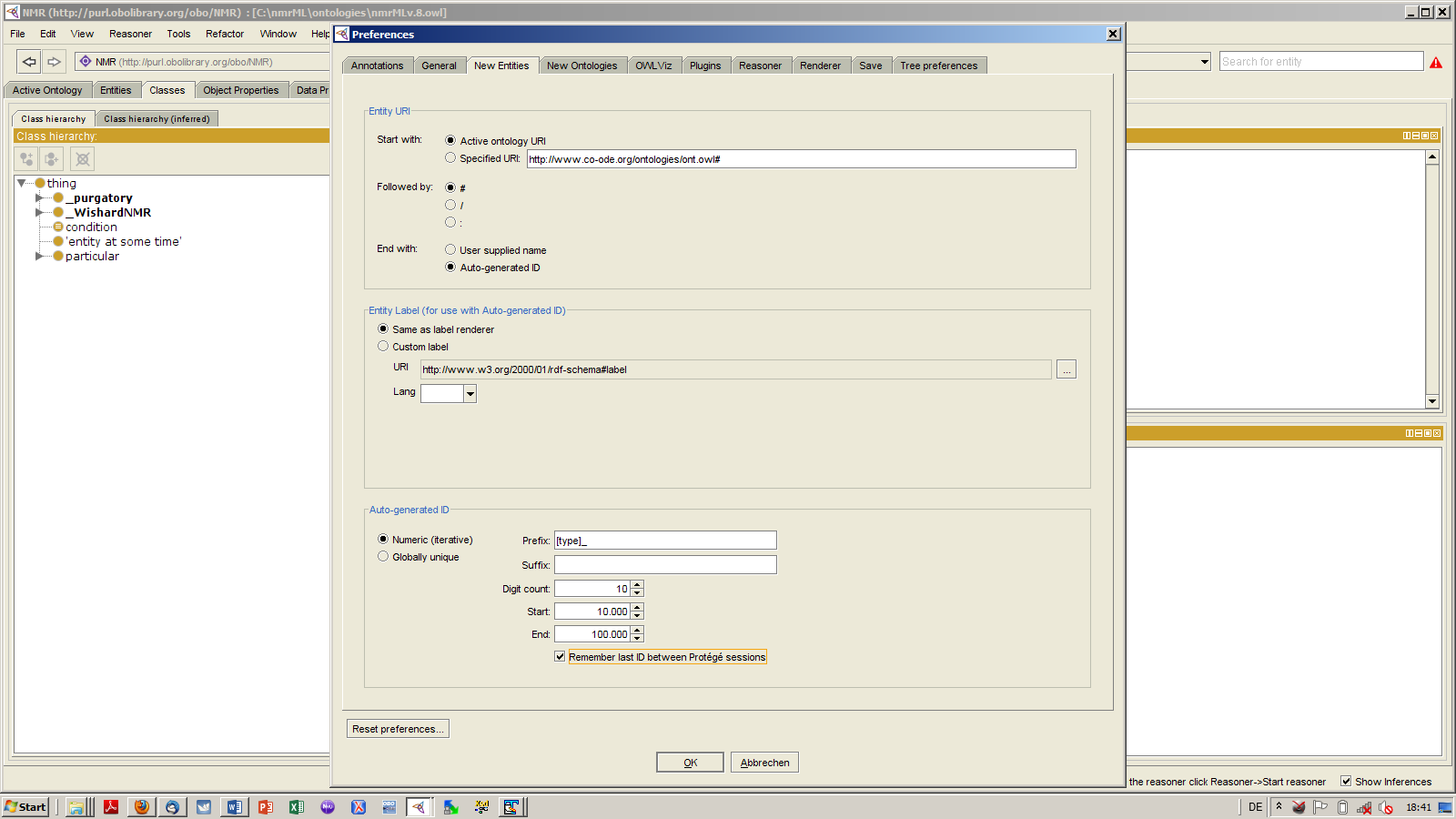
1. **URI fragment** the part of the URI following the **#** or last **/** character
2. **qnames** (qualified name) the fragment but with a [prefix](http://protegewiki.stanford.edu/wiki/Protege4NamingAndRendering#Prefixes...) set
3. **annotation values** uses the value of an entity annotation specified in [Annotations...](http://protegewiki.stanford.edu/wiki/Protege4NamingAndRendering#Annotations...)
4. **annotation values with prefixes** uses a combination of the [annotation](http://protegewiki.stanford.edu/wiki/Protege4NamingAndRendering#Annotations...) value and the qname [prefixes](http://protegewiki.stanford.edu/wiki/Protege4NamingAndRendering#Prefixes...)

When using the 3rd and 4th option you probably wish to also set the [New entities preferences](http://protegewiki.stanford.edu/wiki/Protege4NamingAndRendering#New_entity_creation_preferences) to create labels when a new entity is created.

## Set Search to allow for full regular expression searches under File/preferences/general



## Set ID scheme under File/preferences/New Entities



## Set the class renderer to display human readable class labels

Set the renderer to use Labels when displaying the hierarchy. Under File/preferences/Renderer tick the render by annotation property and hit “configure”. Then set it to display rdfs:label rather than rdf:ID. Set View/render by label.

