Tool intro: Protégé

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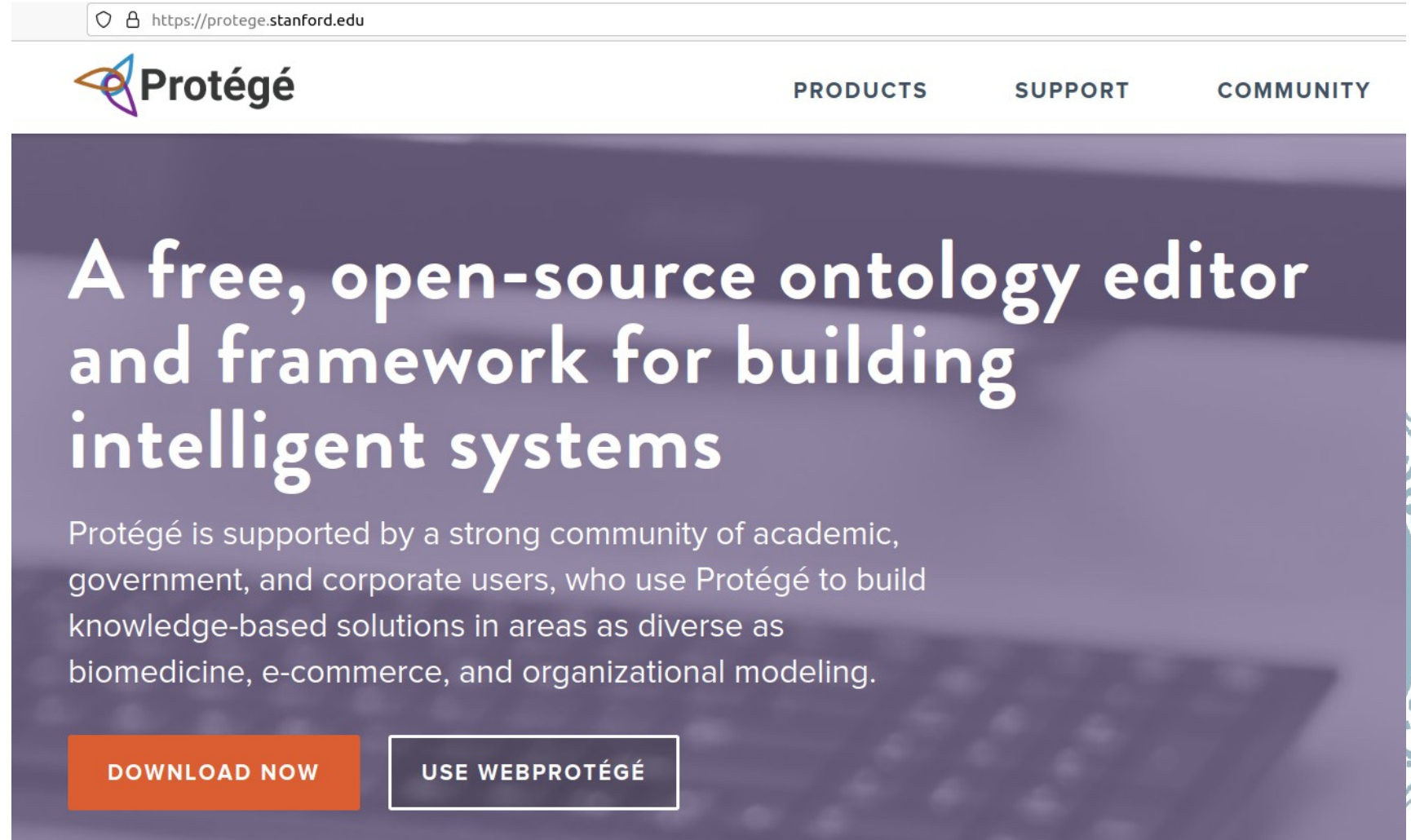
Protégé

Protégé ontology editor

two flavors:
- web version
- desktop version

use for browsing,
querying, editing
or creating ontologies

vast amount of plugins:
- visualizations
- reasoners
- domain adaptations

WebProtégé:
https://webprotege.stanford.edu/
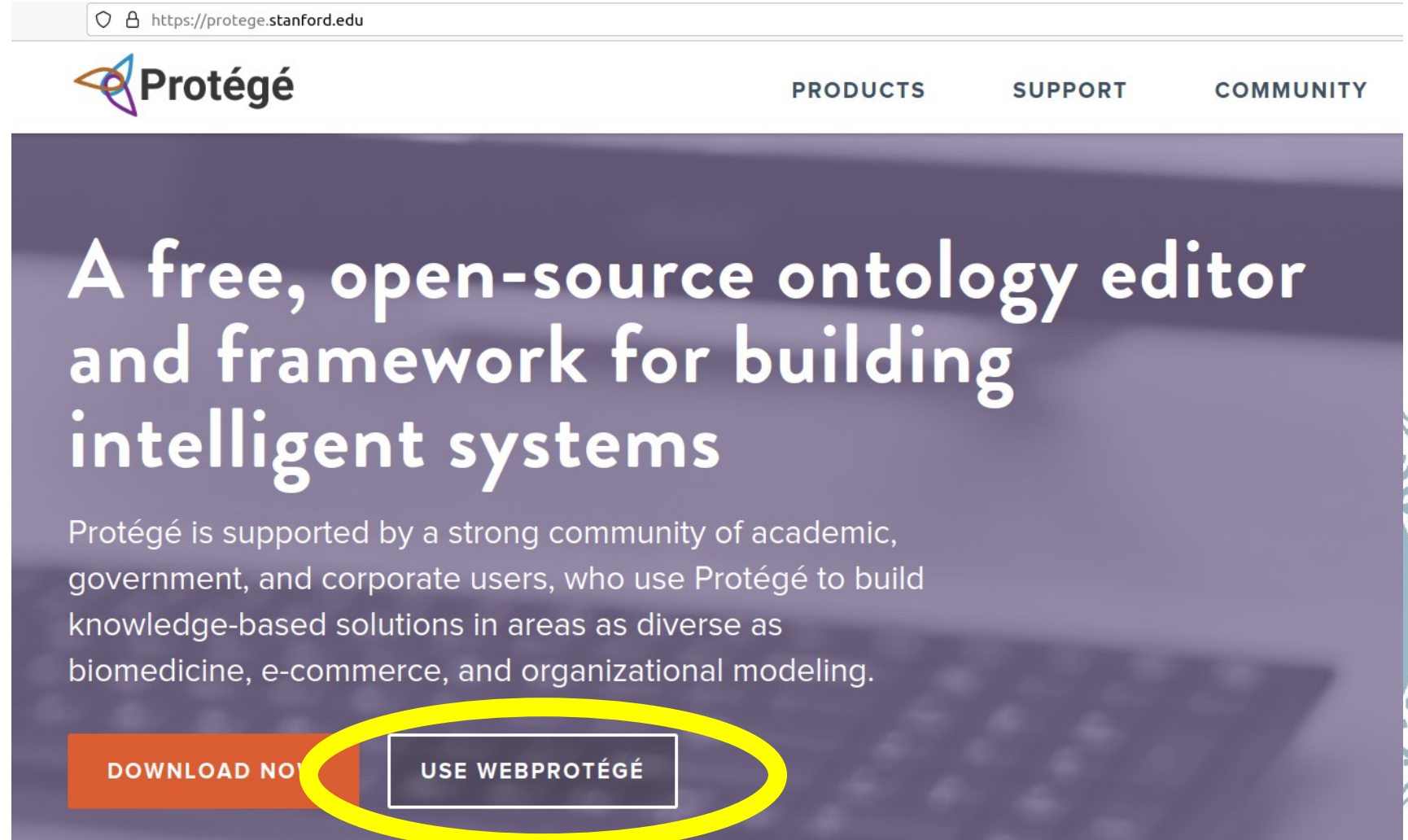
Protégé ontology editor
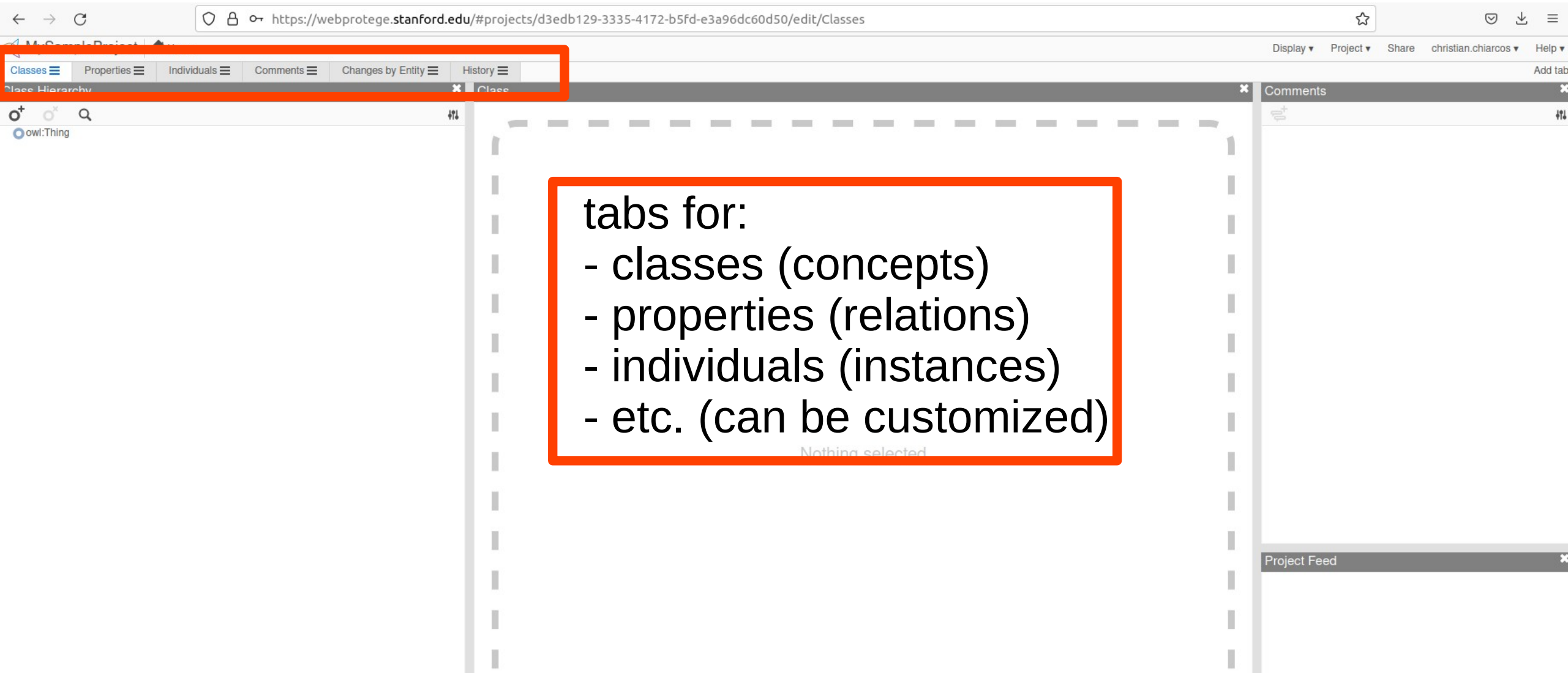
two flavors:
- web version
- desktop version

use for browsing,
querying, editing
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vast amount of plugins:
- visualizations
- reasoners
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WebProtégé: Tabs / Views

Browser/application interface showing:

https://webprotege.stanford.edu/#projects/d3edb129-3335-4172-b5fd-e3a96dc60d50/edit/Classes

MySampleProject

Display ▾ Project ▾ Share christian.chiarcos ▾ Help ▾

Classes ☰ | Properties ☰ | Individuals ☰ | Comments ☰ | Changes by Entity ☰ | History ☰   Add tab

Class Hierarchy   Class   Comments

owl:Thing

tabs for:
- classes (concepts)
- properties (relations)
- individuals (instances)
- etc. (can be customized)

Nothing selected

Project Feed

Class View (first/default tab)

Individuals View: Create an individual

WebProtégé and Desktop Edition

WebProtégé gives you a head start

Desktop edition
- similar structure and look
- can read and write exactly the same data as WebProtégé
- supports many more extensions (you can actually write your own)
- interface a bit more crowded
- you can work offline ;)
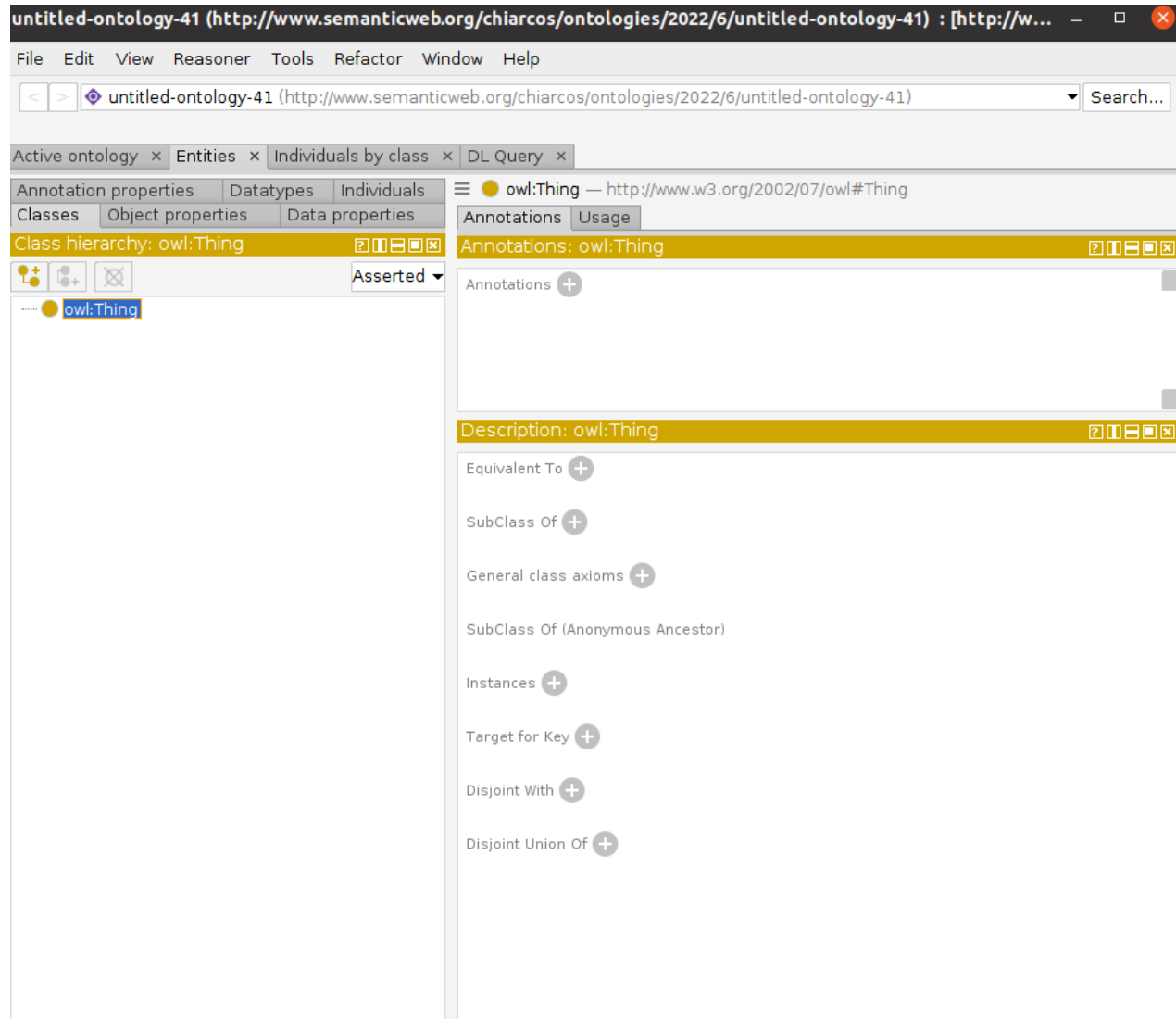
Properties, Statements, Axioms, Inference

Protégé can be used to
- create/manage taxonomies of concepts
- create instances

But there's more to it:
- browse/query/explore knowledge graphs
- create properties
    (relations between/features of concepts)
- create axioms
    (formal definitions of concepts and properties)
- perform reasoning
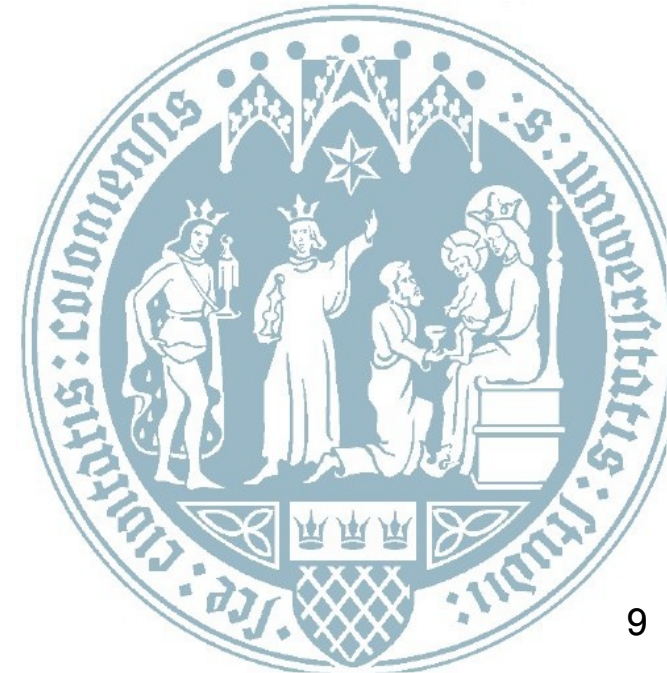   (drawing inferences from concept definitions)
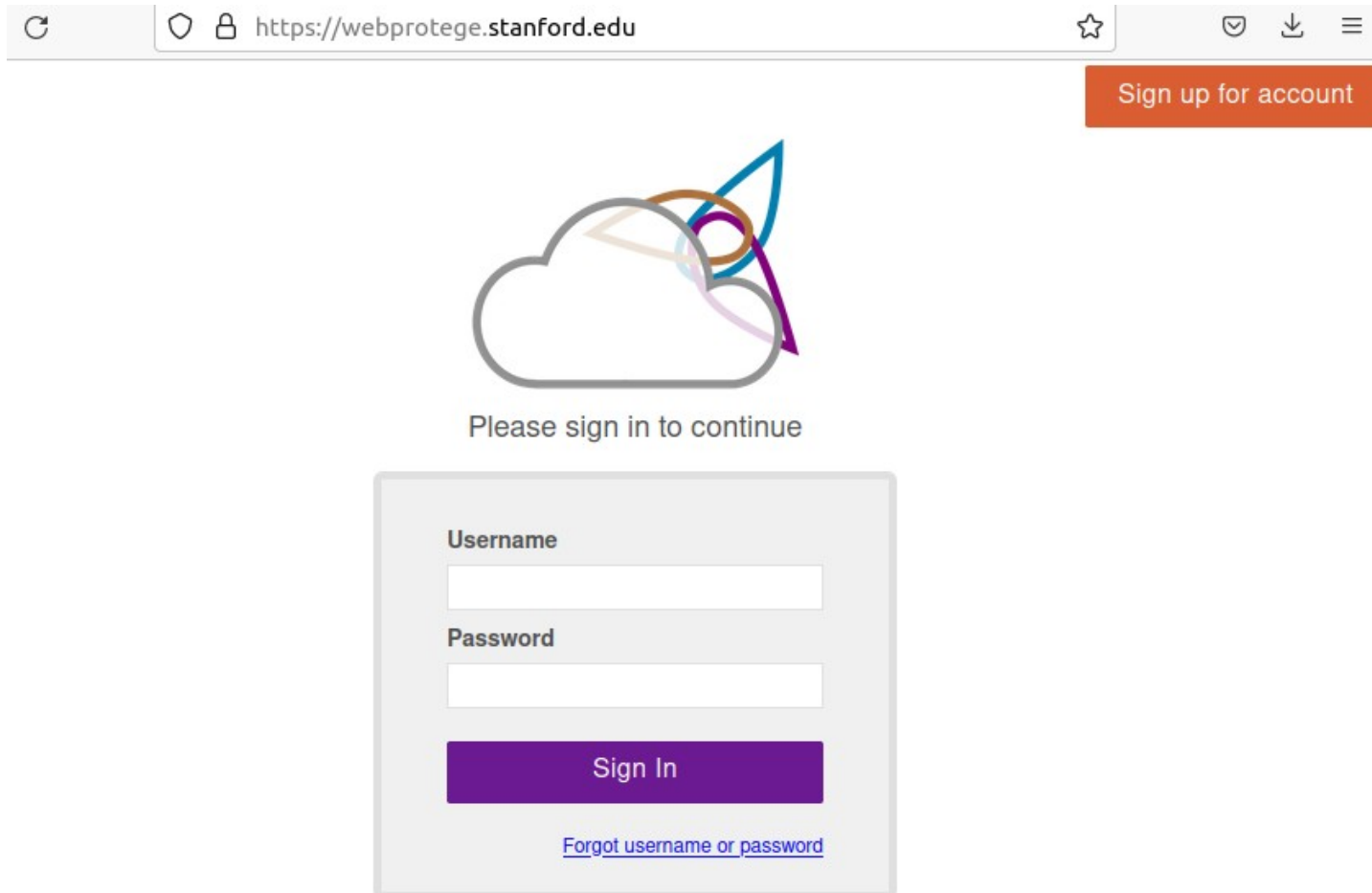
For your convenience

Complementary slides with a mini-walk through for creating an ontology with WebProtégé

In the tutorial, we will have a more thorough walk-through through Desktop Protégé ;)
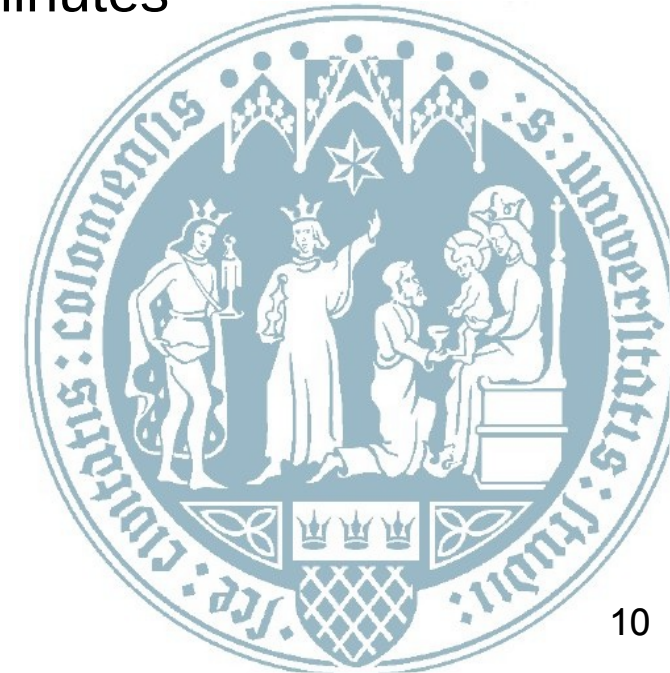
WebProtégé:
https://webprotege.stanford.edu/

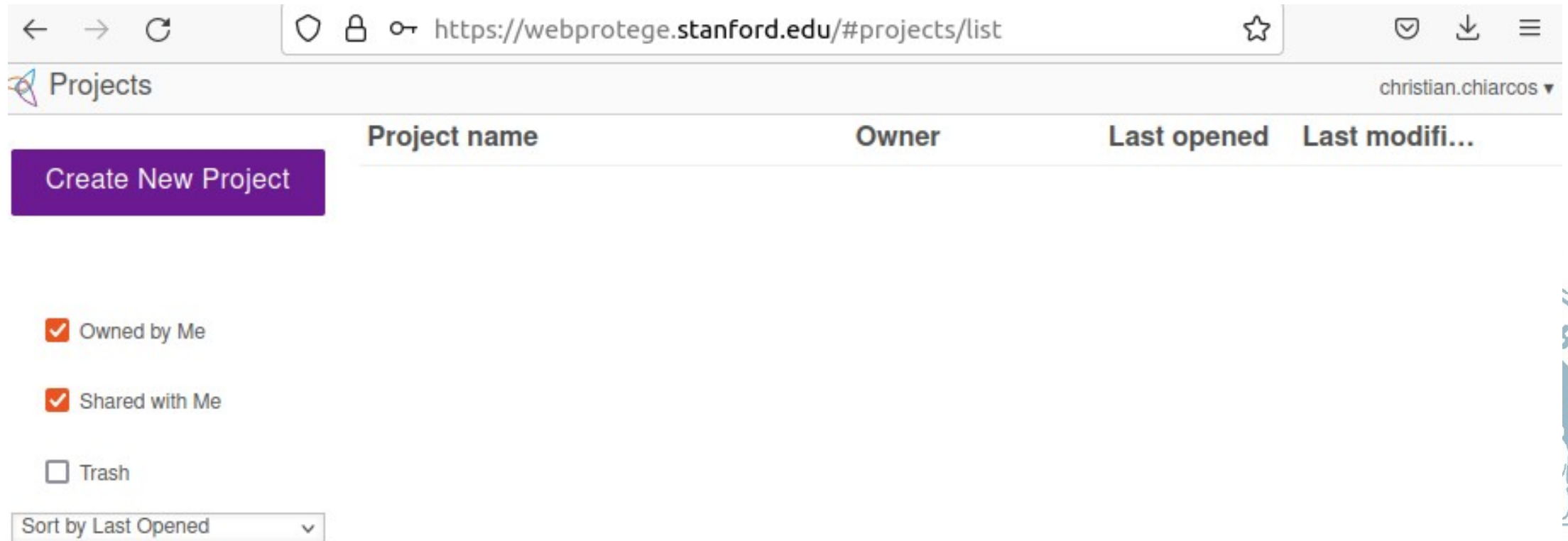

WebProtégé requires registration

Please do that *now*, you need your accounts in a few minutes

WebProtégé: https://webprotege.stanford.edu/

So, create new project

Projects

christian.chiarcos ▾

Last modifi...

Create New Proje...

☑ Owned by Me

☑ Shared with Me

☐ Trash

Sort by Last Opened

Create New Project

Project name

MySampleProject

Language

en

Enter a language tag for labelling new entities and to use as the primary display language. **Leave empty for no language tag.**

Description

This is a toy project about fruits and trees ...

Create from existing sources

Browse... No file selected.

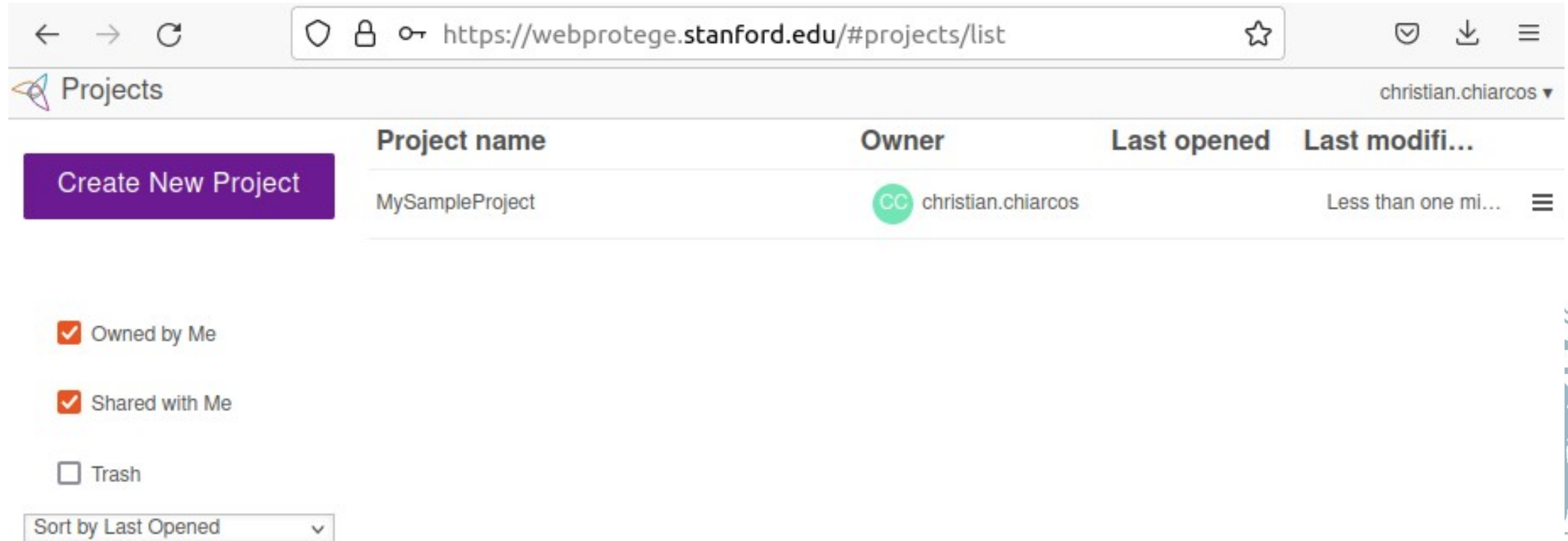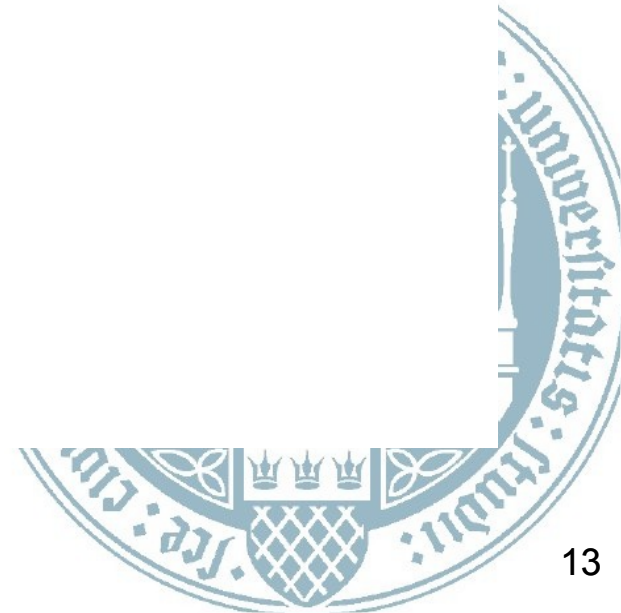Cancel   **Create New Project**

WebProtégé:
https://webprotege.stanford.edu/

Now, let's open "MySampleProject"
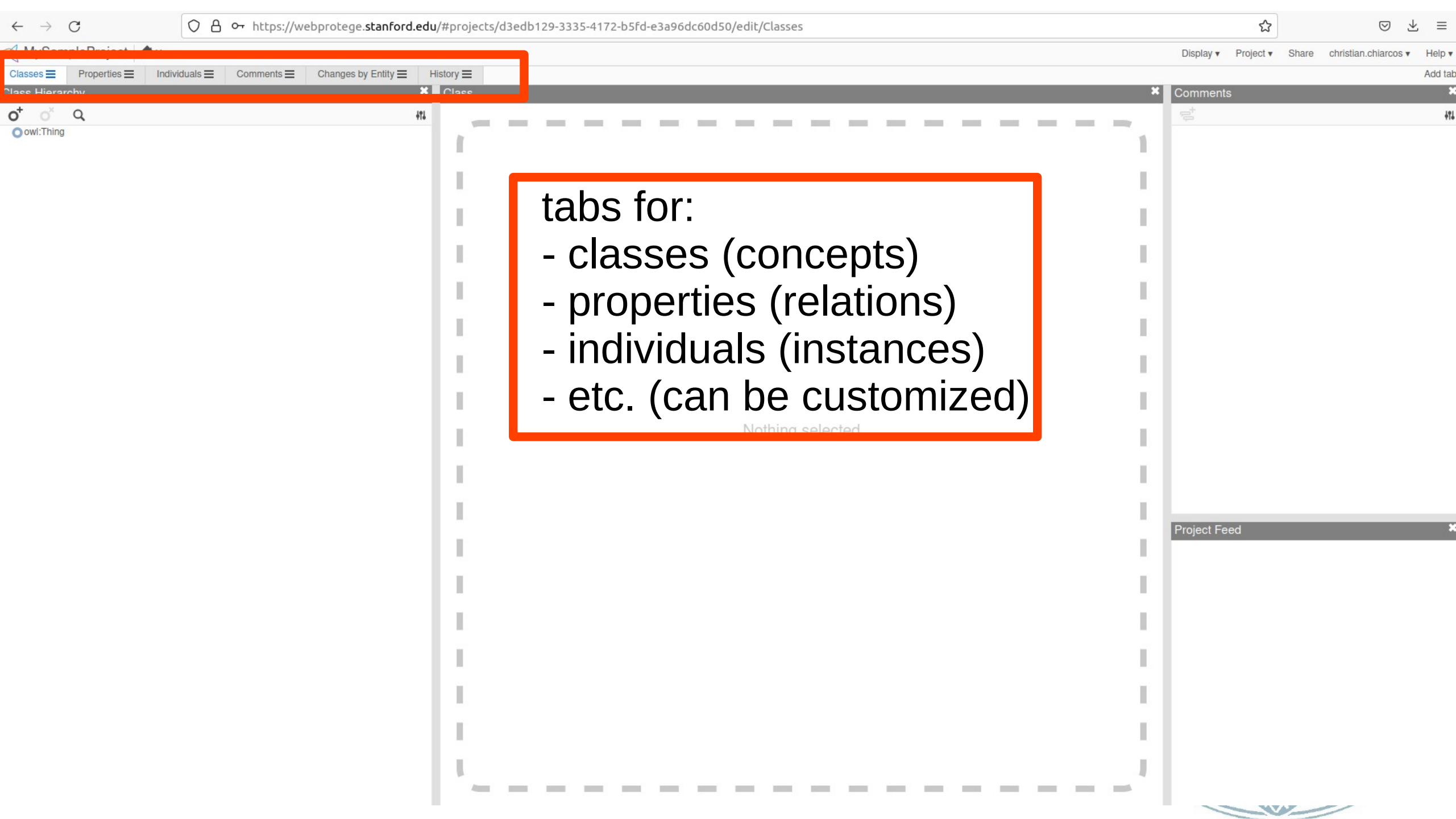
tabs for:
- classes (concepts)
- properties (relations)
- individuals (instances)
- etc. (can be customized)

Class view (first/default tab)

Class Hierarchy:
• browse,
• create (O^+),
• delete (O^X)
concept hierarchy

Class view (first/default tab)

Class view (first/default tab)

Properties View (analogous structure)

MySampleProject · Home · Display ▾ · Project ▾ · Share · christian.chiarcos ▾ · Help ▾

Classes ≡ · Properties ≡ · Individuals ≡ · Comments ≡ · Changes by Entity ≡ · History ≡ · Add tab

Property Hierarchy ✖

Object Properties · Data Properties · Annotation Properties

▼ owl:topObjectProperty
  bearsFruit

Property ✖

IRI
http://webprotege.stanford.edu/RBFv6CnB4Jd6Q0YHsEaJ7tD

Annotations
rdfs:label · bearsFruit · en ✖
Enter property · Enter value · lang

Domain
◯ Tree ✖
Enter a class name

Range
◯ Fruit ✖
Enter a class name

Comments: bearsFruit ✖

Object properties
between individuals
Data properties
attribute-value pairs
Annotation properties
properties of concepts

Project Feed ✖
CC christian.chiarcos Edited bearsFruit
ObjectProperty: bearsFruit
Less than one minute ago

Individuals Tab: Create an individual

MySampleProject   🏠 Home   Display ▾   Project ▾   Share   christian.chiarcos ▾   Help ▾

Classes ☰   Properties ☰   **Individuals ☰**   Comments ☰   Changes by Entity ☰   History ☰   Add tab

Individuals by Class ✖

owl:Thing 🔍

⦿ All instances   ○ Direct instances only

Individuals

Enter search string to filter list

● apple

Individual ✖

IRI
http://webprotege.stanford.edu/Ru7FT4xHvnMk0ZsukYCGsV

Annotations

rdfs:label   apple   en ✖

Enter property   Enter value   lang

Types
⦿ Fruit ✖

Enter a class name

Relationships

Enter property

Same As

Enter an individual n...

Comments: apple ✖

click on the symbol and make up a name ;)
note that this will be an instance of owl:Thing ("anything")
We should give it a type

Project Feed ✖

CC christian.chiarcos Edited apple
NamedIndividual: apple
Less than one minute ago

CC christian.chiarcos Created

Individuals Tab: Give it a type

Individuals Tab: Create statements

"Relationships" just enter the form with properties and individuals

Individuals Tab: View your data

MySampleProject | 🏠 Home Display ▾ Project ▾ Share christian.chiarcos ▾ Help ▾

Classes ☰ Properties ☰ **Individuals** ☰ Comments ☰ Changes by Entity ☰ History ☰ Add tab

Individuals by Class ✖	Individual: appletree ✖	Comments: appletree ✖

Class

⬇ 🔀 ⬆ ⬇ ↪

○ owl:Thing 🔍

◉ All instances ○ Direct instances only

Individuals

Enter search string to filter list

● appletree
● apple

Plant   Food

Tree   Fruit

apple

bearsFruit

appletree

Entity Graph
(second logo)
• dashed lines are
  inferred triples

Project Feed ✖

CC christian.chiarcos Edited
appletree
    NamedIndividual: appletree
2 minutes ago

Querying: Add tab ...

Querying: Query Builder

MySampleProject | 🏠 Home   Display ▾   Project ▾   Share   christian.chiarcos ▾   Help ▾

Classes ☰ | Properties ☰ | Individuals ☰ | Comments ☰ | Changes by Entity ☰ | History ☰ | **Query ☰** | Add tab

Query

Query

Entities that match [all ▾] **of the following:**

Is an instance of ▾	⦿ Plant	✕
	☐ Direct	
Has a relationship on ▾	▭ bearsFruit	✕
	that [has any value ▾]	

➕

Execute

1 results

• appletree

Implicit statements
We never declared
appletree to be a plant
Still, the query works ...

Back to "Home": Saving it

click on "download"

Beyond toy ontologies

When creating a new project, you can also load external ontologies from local files