



University of
Southampton

The Protégé Ontology Editor

COMP6256 Knowledge Graphs for AI Systems

Dr Nicholas Gibbins – nmg@ecs.soton.ac.uk

Protégé

Download Protégé Desktop 5.5.0 from <http://protege.stanford.edu/>

Integrates reasoning into the ontology design process

- Check your ontology for consistency, subsumption, etc
- Available DL reasoners:
 - Hermit – <http://www.hermit-reasoner.com/>
 - Pellet – <http://pellet.owldl.com/>
 - FaCT++ – <http://owl.man.ac.uk/factplusplus>

Manchester DL syntax

The DL syntax we've used so far is a 'traditional' syntax for logical expressions

- Not well understood by non-logicians
- Not easy to type (lots of special symbols)

The Manchester DL syntax is a more user-friendly syntax for use in tools

- Used extensively in Protégé
- <http://www.w3.org/TR/owl2-manchester-syntax/>

Manchester Syntax Summary

Traditional DL Syntax	Manchester Syntax
$C \sqcap D$	C and D
$C \sqcup D$	C or D
$\neg C$	not C
$\exists R. C$	R some C
$\forall R. C$	R only C
$\geq n R$	R min n
$\leq n R$	R max n
$= n R$	R exactly n
$\exists R. \{x\}$	R value x
$\geq n R. C$	R min n C
Reflexive property	R Self
Datatype restrictions	int[≥ 2 , ≤ 15]

ESSENTIAL READING!

Horridge et al (2011) A Practical Guide to Building OWL Ontologies using Protégé 4 and CO-ODE Tools



Example ontology: OWL Pizzas



- Build an ontology for describing pizzas and their ingredients
- Must be able to determine whether pizzas are:
 - Vegetarian
 - Vegan
 - Spicy
 - Contain allergens (nuts, dairy)
 - Low-calorie