

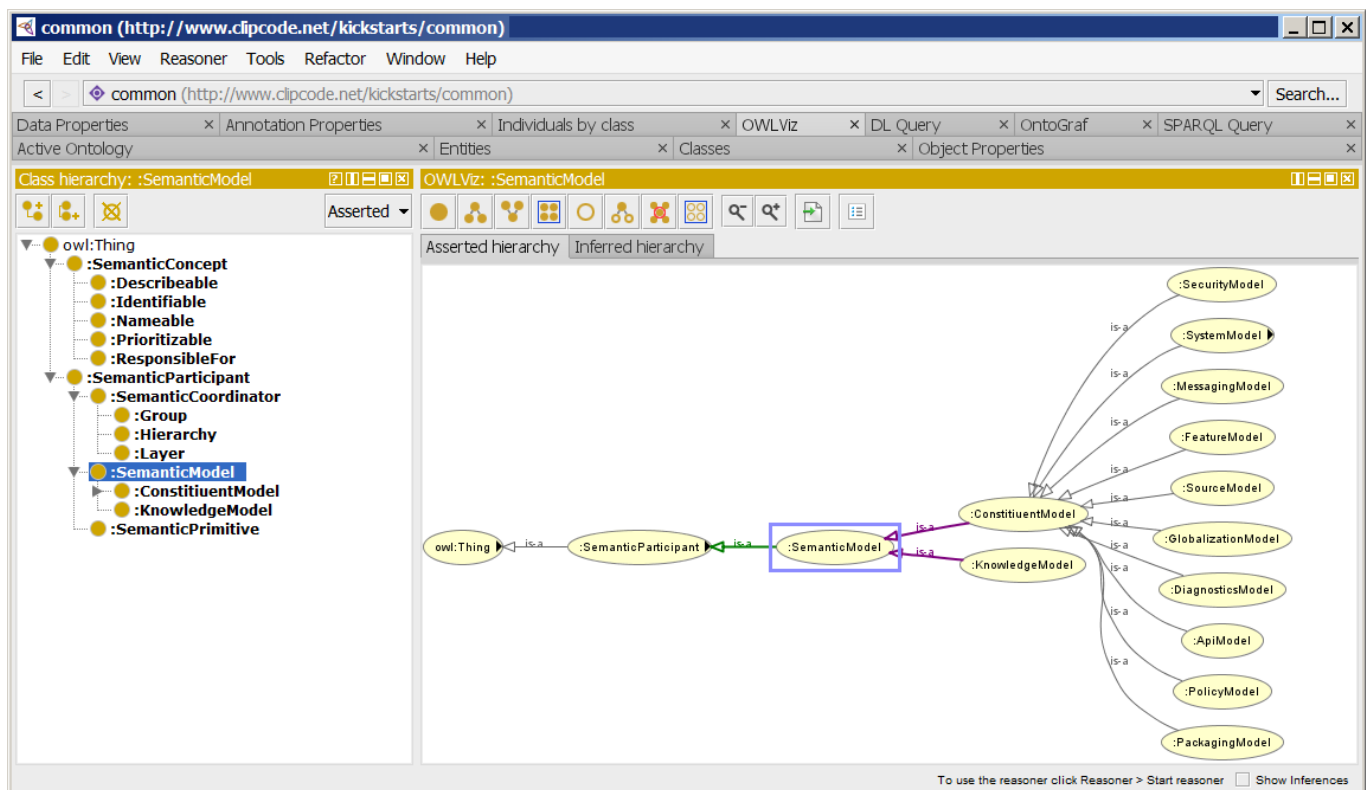
Semantic Web Ontology Kickstart

Creating An Ontology for the Semantic Web Using W3C OWL

The Growing Importance of the Semantic Web; Standards – RDF, OWL, SPARQL
Considerations when designing an ontology; Using the Protégé tool; Steps in ontology building

Overview

The W3C's Semantic Web supports richer data representation that encourages diverse knowledge flows and allows automated inferencing by software agents. It covers areas such as classification, rules, statements/facts, data as triples and reasoning. A cornerstone of the Semantic Web is building custom ontologies using the Web Ontology Language (OWL) - that is the goal of this kickstart. It uses the Protégé ontology editor from Stanford (<http://protege.stanford.edu/>).



Screen dump of Protégé editing a Clipcode ontology

Six-Stage Strategy

- **Determining Ontology Goals** – The Ontology Project Team needs to have an unambiguous set of goals, understand what the ontology should cover and how it will be used
- **Tools And Sample** – Setting up tools (e.g. Protégé) and programming libraries, plus review of sample ontology
- **Classes** – creating the roots of taxonomic trees as a first step in knowledge representation; using the idea of sibling- and sub-classes; starting with `OWL:Thing`; creating identifiers for classes
- **Properties** – Properties are statements about classes (classes themselves may be considered “empty”); defining a property's range based on datatypes (e.g. XSD) or class (`ObjectProperty`)
- **Individuals** – classes and properties provide the schema – individuals provide the actual data
- **Evolution** – Ontologies are not static. They evolve along with the business/software environment that they represent and the team needs workflows in place in order to facilitate this

Features & Benefits

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| Determining ontology goals | By understanding what the ontology is meant to achieve for the organisation, the team is more likely to deliver results that provide real business benefits |
| Tools and sample | By correctly setting up the ontology editing environment and reviewing a detailed sample, the ontology team - who may not be familiar with OWL up to now - can become productive quickly |
| Classes | Software programs have all information about a particular class appearing in one location (closed-world), whereas OWL ontologies assumes an open-world, with statements coming from many (distributed) locations – when the team appreciates this, ontology development becomes much easier |
| Properties | By populating classes via attaching properties to them (setting the property's domain), we build up a picture of what the ontology represents and its precise representation |
| Individuals | By creating instances of classes (known as individuals in OWL) , we can build up a knowledge base of statements |
| Ontology evolution | By putting in place a strategy defining how the ontology will evolve, it will be clear to the team what steps to perform to carefully update the representation. |

Target Market

This kickstart targets teams who need to create ontologies using the W3C OWL2 language.

Ontology Architect from Clipcode

The ontology architect that Clipcode provides will have excellent knowledge of the Semantic Web and its various standards, including OWL2, RDF and SPARQL. He will also have detailed experience of creating ontologies using OWL2.

Who Should participate from the Client

The kickstart attendees should consist of the client's ontology team – which may include a software architect, developers, business analysts, knowledge management specialists and executives in charge of leading the client's Semantic Web strategy. These are the people who need to create the initial ontology and continue its evolution.

How To Proceed

If you wish to arrange a Semantic Web Ontology Kickstart on-site in your company's offices, please contact Clipcode below. We need to discuss arrangements further, agree goals for the engagement and set a tentative schedule.



www.clipcode.net

If your dev team is starting an important project and needs help, please contact us via email at sales@clipcode.com to discuss how we can be of assistance.