Implementation of LCA use-case ontology rules using SWRL for Protege

Keywords: Ontology, Industrial Data, Ontology inference, SWRL

Problem: Ontology is increasingly being used for industrial domain modeling, mostly design and manufacturing stages. Having semantic representation of all relevant concepts and relations enables knowledge structuring and knowledge exchange but is also a platform for modeling the dynamics of the domain. Rules describe logic and behavior of the system and capture experience knowledge from domain actors. Further on, by using first order logic, rules can be chained, thus reasoning a new valuable knowledge.

Plan:

1. Study theory of ontology, domain capturing and concepts and relations modeling
2. Study Protege tool and SWRL syntax and developers environment
3. Study industrial use case in question, it’s ontology and set of rules defined
4. Implement set of rules and show reasoning examples

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