Semantic Web
Lab 3 OWL Ontology Reasoning
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EXO1

How can you load an existing ontology into Java by OWL API?
OWLOntologyManager manager=OWLManager.*createOWLOntologyManager*();
OWLDataFactory dataFactory=manager.getOWLDataFactory();
File inputOntologyFile = **new** File("examples/ontologies/pizza.owl");
OWLOntology ontology=manager.loadOntologyFromOntologyDocument(inputOntologyFile);

How can you get the numbers of concepts, relations(roles), instances, and logical axioms contained in an ontology?
nb of concepts:
System.out.println(ontology.getClassesInSignature(true).size());
nb of relations:
System.out.println(ontology.getObjectPropertiesInSignature(true).size());
nb of instances:
System.out.println(ontology.getIndividualsInSignature().size());
nb of logical axiom:
System.out.println(ontology.getLogicalAxioms().size());

How can you save an ontology to a file in a particular syntax?
File inferredOntologyFile=**new** File("examples/ontologies/pizza-inferred.owl");
if (!inferredOntologyFile.exists())
        inferredOntologyFile.createNewFile();
        inferredOntologyFile=inferredOntologyFile.getAbsoluteFile();
        OutputStream outputStream=new FileOutputStream(inferredOntologyFile);
        manager.saveOntology(inferredAxiomsOntology,manager.getOntologyFormat
(ontology), outputStream);

EXO2
Create your own ontology from Lab 2 by OWL API.
CreatOntology.java

EXO3
Ontology Reasoning
Reasoning.java

What does the classification mean as a reasoning task?
Classification means that a reasoning task will recalculate implicit subclass relationships and class assertion axioms.