GUI Documentation

Installing

* Install the latest version of Java JRE from the Oracle web site (Java JDK can be used instead of JRE if needed).
* Extract the content of the zip file.
* Run with runUI.bat.

Using

* Type an ASP program in the ASP Query window
* Click “Run Query”
* The output will be display in the “Result” window

Ontology Files

The ontology files are located in asklab\ui\ONTOLOGY. All files ending in .owl will be used together. The ontology file to be used depends on the scenario:

* Example 1
  + EX1\cpsframework-v2-bodycamCPS.owl
* Example 2
  + EX2\cpsframework-v2-laneassistCPS.owl
* Example 3
  + EX3\cpsframework-v2-adaptivecruiseCPS.owl

SPARQL Query

The SPARQL query is located in asklab\ui\dump.sparql. There is no need to modify the query.

ASP Program

* The programs for running the demo scenarios are provided. Paste all relevant files in the ASP Query window
* The only file that is different between examples is output.lp, which is found in the following directories:
  + Example 1
    - EX1\output.lp
  + Example 2
    - EX2\output.lp
  + Example 3
    - EX3\output.lp
* All other files are common to all examples. They differ depending on the example’s step, as follows:
  + Step 1
    - <Example Dir>\output.lp
    - EX0\theory-3.lp
    - EX0\step1.lp
  + Step 2
    - <Example Dir>\output.lp
    - EX0\theory-3.lp
    - EX0\step1.lp
    - EX0\step2.lp
  + Step 3
    - <Example Dir>\output.lp
    - EX0\theory-3.lp
    - EX0\step1.lp
    - EX0\step2.lp
    - EX0\step3.lp
  + Step 3 (Variant)
    - <Example Dir>\output.lp
    - EX0\theory-3.lp
    - EX0\step1.lp
    - EX0\step2.lp
    - EX0\step3.lp
    - EX0\step3-ext.lp

CPSReasoner Documentation

Installing and using

* Install the latest version of Java JRE from the Oracle web site (Java JDK can be used instead of JRE if needed).
* Extract the content of the zip file.
* Use method asklab.cpsf.CPSReasoner. query(<SPARQL query>,<ASP query>,<ontology dir>)
  + SPARQL query and ASP query are strings containing the corresponding queries rather than filenames

Software version

* The version reported by version() can be changed by editing file “version.txt”. Any single-line string is acceptable.

API

* **static String version()**

Returns the version of CPSReasoner, as found in its version.txt file.

* **static int SLVR\_DLV: selects dlv ASP solver in query()**
* **static int SLVR\_DLV\_ALL: selects dlv ASP solver in query()**
* **static int SLVR\_CLINGO: selects clingo ASP solver in query()**
* **static int SLVR\_CLINGO\_ALL: selects clingo ASP solver in query()**
* **static String query(String sparqlQ,String aspQ,String ontologyDir,int solver)**

**static String query(String sparqlQ,String aspQ,String ontologyDir)**

Runs SPARQL query *sparqlQ* and applies ASP query *aspQ*, if specified, to its result. The SPARQL query is run on the ontology files located in *ontologyDir*. The reasoner used is jena. *aspQ* is an ASP program. The ASP solver is selected by variable solver, using the SLVR\_ constants. The default solver is dlv. If XMLoutput is true, the result is output in XML. Otherwise, it is in tabular-text format.

Specifically:

* + The tuples returned by jena are mapped to ASP facts and combined with *aspQ* to form an ASP program. The answer set of this program is computed using the ASP solver, and the relevant portions of it are returned in tabular-text format. The value of XMLoutput is ignored.