Web-based Ontology Analysis and Partitioning Tool

Developers: Buga Iulia, Alzeitoun Ahmad, Osazuwa Imuwahen | **Mentors:** Dr. Gökhan Coskun , Irlan Grangel

Overview

With the increasing use of ontologies in many branches of science and industry not only the number of available ontologies has increased considerably but also many widely used ontologies have reached a size that overburdens development and quality control procedures. It has been argued that the maintenance of large ontologies would be greatly facilitated by decomposing large ontologies into smaller modules that cover certain subtopics of the ontology. To accomplish this, the **"Web-based ontology analysis and partitioning tool"** is developed as an open platform web application. Its design allows for quickly uploading large ontologies and partitioning the ontologies into smaller modules.

Implementation Details

The tool is a web-based application running on the MEAN stack (without MongoDB) having Java 1.7 as a dependency.

Software used:
- ✓ **E**xpress,js v4.13.3
- ✓ **A**ngularjs v1.3.15
- ✓ **N**ode.js v0.12.2 (release date May 2015).

Furthermore, other Node.js **modules** are used to ease the development and to accomplish different functions, such as file handling.

The **semantic web** specific libraries used are:

- ✓ RDFSTORE
- ✓ VisJS
- ✓ OWL2VOWL

Virtual Machine and Remote Access

Workstation name:EIS03

Name: EIS2015

OS: Windows (64 bit)

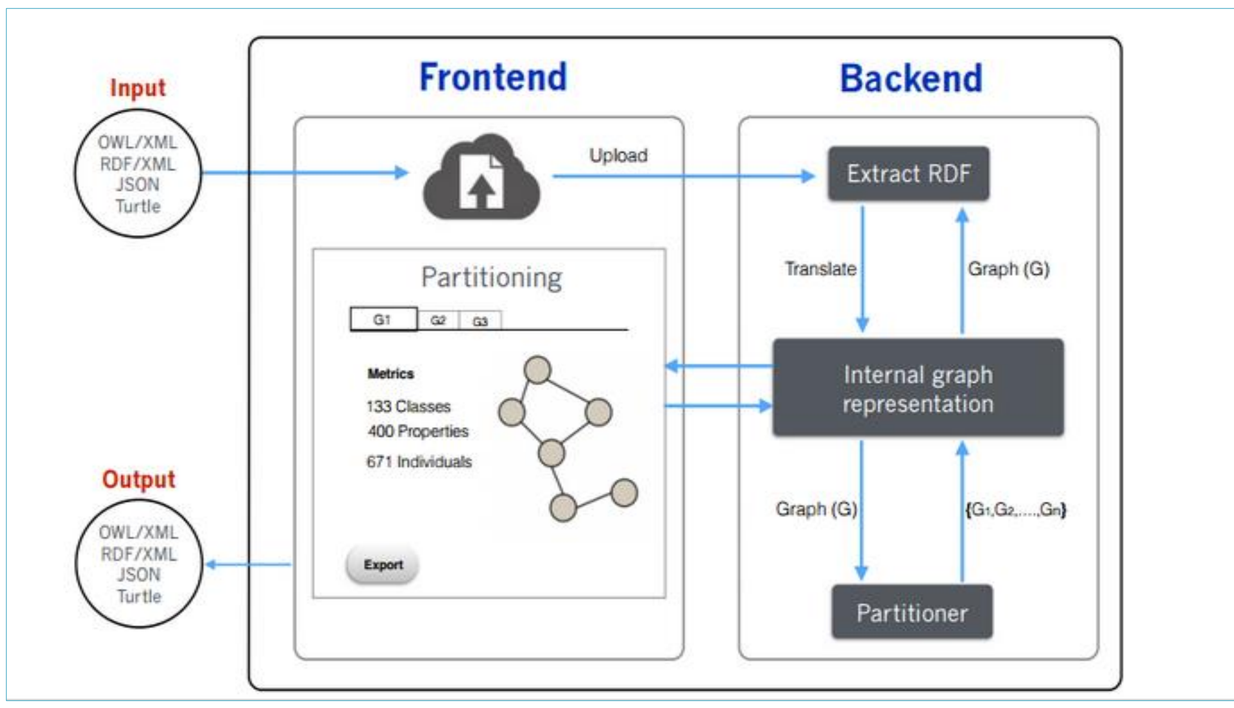
Base memory : 4096MB

Repository Location

https://github.com/EIS-Bonn/MA-INF3232-Lab-SS2015.git

Usage Model

- **Upload** Ontology from local computer or URI.
- **Parse** it to obtain metrics and graph.
- **Visualize** the graph
- **Highlight** key elements of the graph.
- **Partition** into smaller modules.



Results

- Conversion of the ontology into RDF triples
- Visualization of triples as a directed graph
- Metrics that count specific elements of the graph
- Filtering & highlighting
- Random colors and shapes to highlight
- Partitioning
- Saving the result as a file