

ABECTO: An ABox Evaluation and Comparison Tool for Ontologies



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Abstract

Correctness and completeness of ontologies on the schema and the instance level are important quality criteria in their selection for an application. Due to the general lack of gold standard data sources, the determination of these criteria, especially on the instance level, is challenging. The direct comparison of candidate data sources enables the approximation of these criteria. We introduce ABECTO, an ABox evaluation and comparison tool for ontologies. ABECTO provides a framework for the comparison of different semantic data sources in the same domain on the instance level.

Framework

ABECTO implements our framework for ontology ABox comparison described in [1]. The framework consists of five components:

- A *source* component to load ontologies,
- a *transformation* component to add deduced axioms to the ontologies in preparation of further processing,
- a *mapping* component to map the resources of the ontologies,
- a *comparison* component to provide measurements of the ontologies, and
- an *evaluation* component to identify potential mistakes in the ontologies.

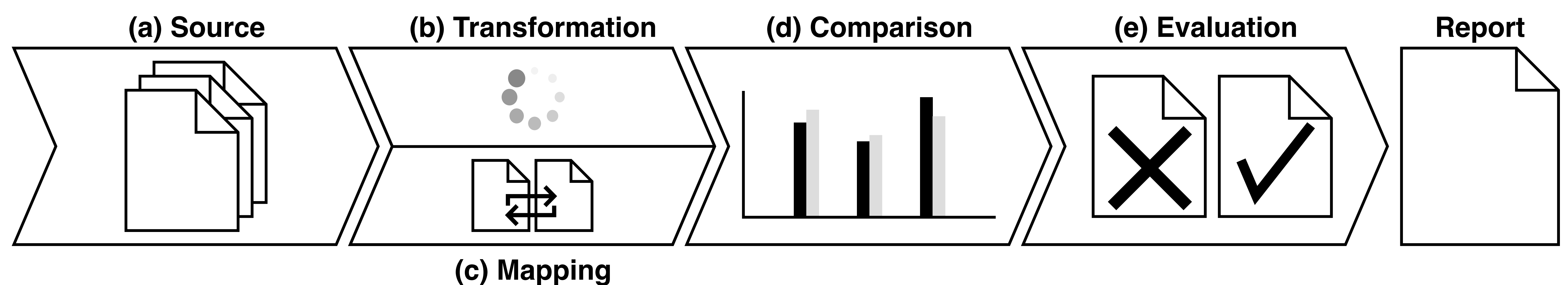


Figure: Schematic of the comparison framework implemented in ABECTO. The order of the transformation and mapping processes is up to the user.

Demonstration

We will demonstrate how users can utilize ABECTO to compare and evaluate ontologies. Comparison projects are managed inside of Jupyter notebooks. A tutorial notebook is available on:

<https://mybinder.org/v2/zenodo/10.5281/zenodo.3786194/?filepath=abecto-tutorial.ipynb>

It can be executed online using Binder [2]. Loading the live preview might take a few minutes.

References

- Keil, J. M. “Ontology ABox Comparison”. In: *The Semantic Web: ESWC 2018 Satellite Events - ESWC 2018 Satellite Events, Heraklion, Crete, Greece, June 3-7, 2018, Revised Selected Papers*. 2018, pp. 240–250. DOI: 10.1007/978-3-319-98192-5_43.
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