Incremental Reasoning on RDFS
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The Semantic Web enables to:
• describe knowledge from data
• leverage implicit knowledge through reasoning algorithms

The main limitations of current reasoning methods are:
• lack of scalability for large datasets
• inability to reason over knowledge from evolving data

We contribute to solving these problems by introducing Slider, an efficient incremental reasoner.

**Parallel and Scalable Execution**: Each inference rule is mapped to an independent module, receiving intended triples and later distributing them to other modules for further processing.

**Duplicates Limitation**: Vertical partitioning [1] and multiple indexing limit the production of duplicates and avoid unnecessary computation.

**Data Stream Support**: Slider can handle both dynamic triple streams and static triples sets by employing parallel architecture.

**Fragment’s Customization**: Slider natively support both RDFS [4] and ρdf [5] fragments, and can be extended to any other fragments.

**Comparison with OWLIM-SE** [2]

**Inference on both RDFS and ρdf**

**13 different ontologies**
- 5 generated with BSBM [3]
- 2 from real-word datasets
- 6 subClassOf ontologies

**106.86% improvement for ρdf**

**36.08% improvement for RDFS**

**71.47% improvement in average**

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**REFERENCES**