



Towards A Unified Knowledge Graph Data Management System

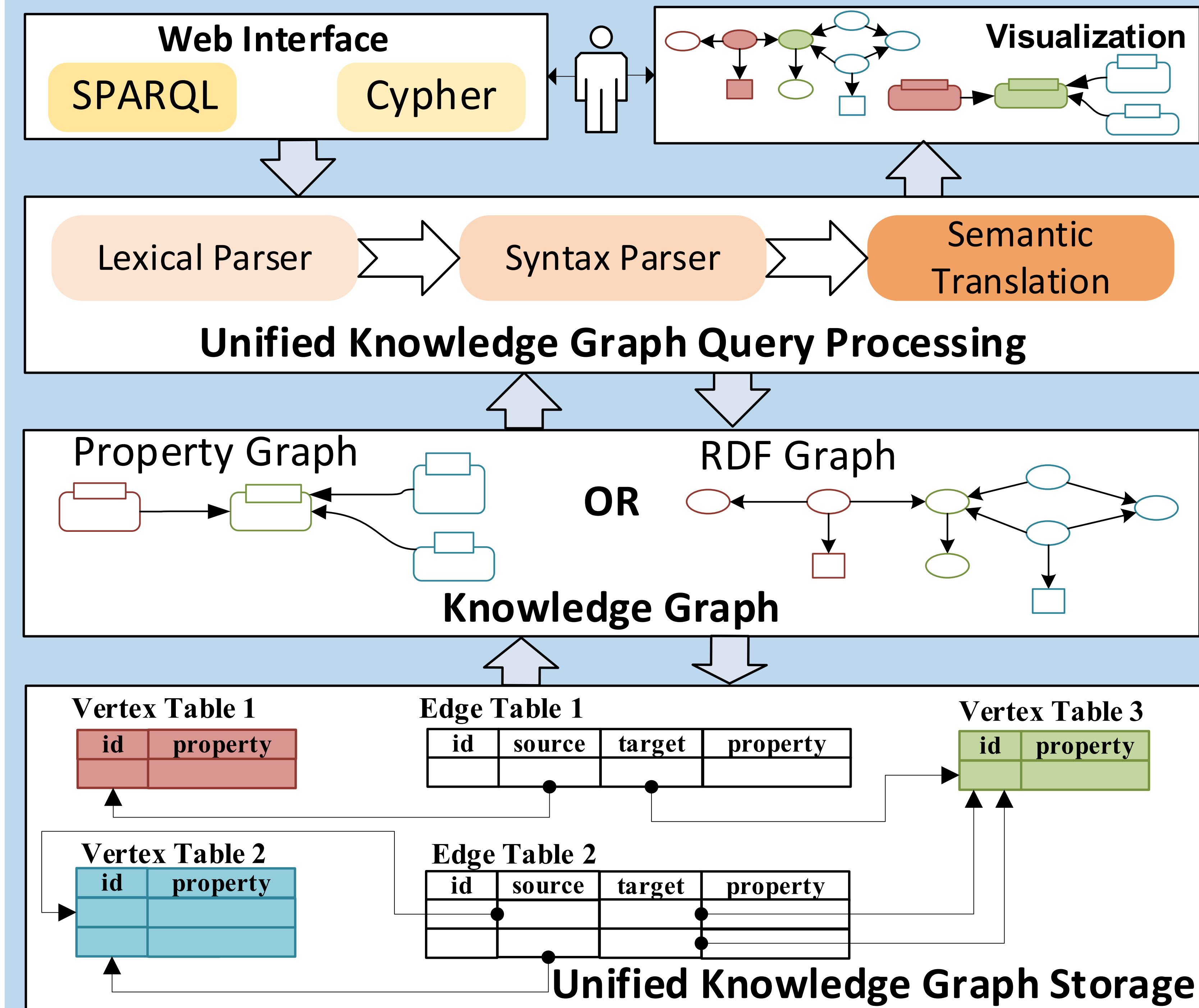
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METHOD

The first KG database system that:

- Based on the relational model, a unified storage scheme is utilized to efficiently store RDF graphs and property graphs, and support the query requirements of knowledge graphs
- Using the characteristic-set-based method, the storage problem of untyped entities is addressed
- The interoperability of SPARQL and Cypher is realized, and enables them to interchangeably operate on the same knowledge graph
- With a unified Web interface, users are allowed to query with two different languages over the same KG and visualize query results and explanations
- Easier to manage multiple KGs in one database



System	Storage		Query			
	RDF	Property Graph	BGP	Text Search	Graph Analysis	RPQ
ours	✓	✓	✓	✓	✓	✓
gStore	✓	×	✓	×	✓	×
Neo4j	×	✓	✓	✓	✓	×

NOVELTY

Our system outperforms gStore and Neo4j:

- Support more types of queries
- Save storage time and space
- Better support transactions and scalability
- Provide a Web interface

FUTURE WORK

- Distributed KG data management systems
- More query features will be supported in the unified KG management system