

GiaBATA

A Rule System for Querying Persistent RDFS Data

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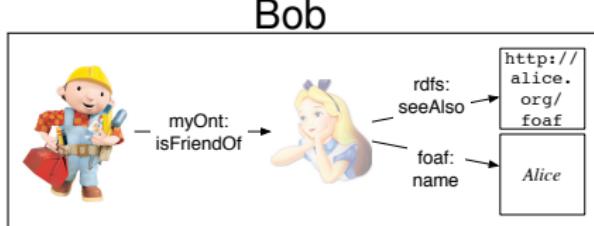
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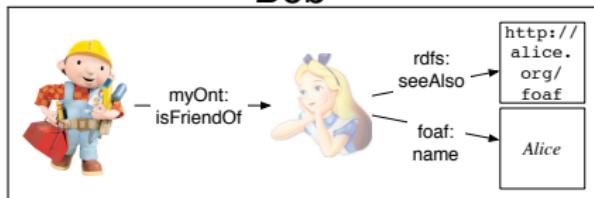


NAMED GRAPH Problem with RDFS

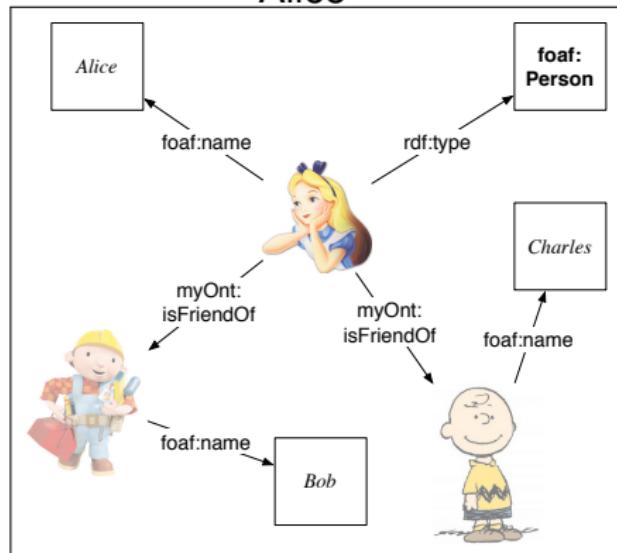


NAMED GRAPH Problem with RDFS

Bob

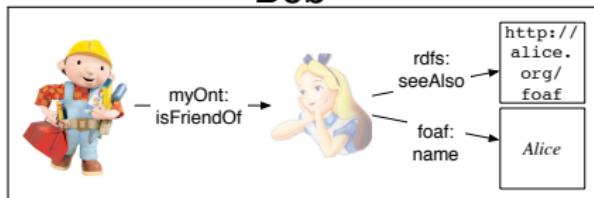


Alice

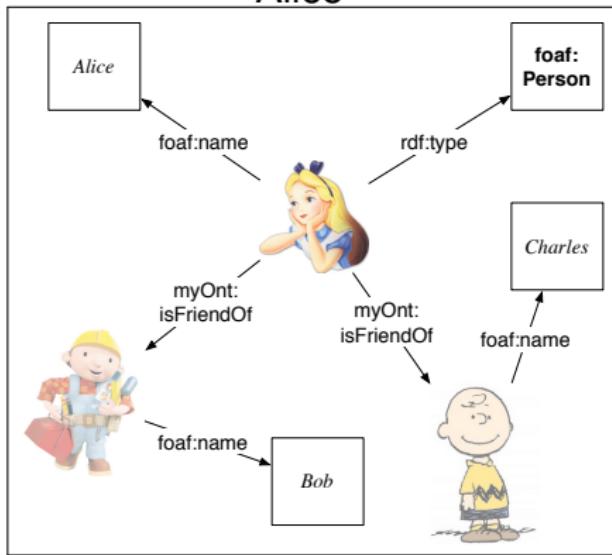


NAMED GRAPH Problem with RDFS

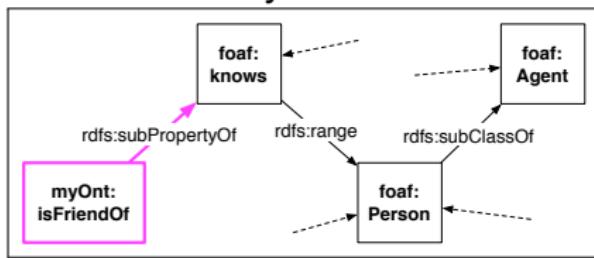
Bob



Alice



myOnt



Q₁: give me the names of persons in graph ?G

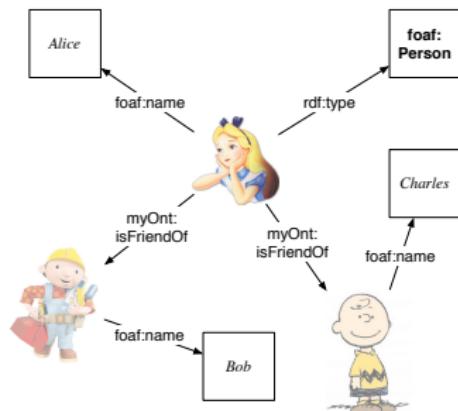
```
select ?N
from <http://example.org/myOnt.rdfs>
from <http://bob.org/foaf>
from named <http://alice.org/foaf>
where {
    bob:me myOnt:isFriendOf ?X .
    ?X rdfs:seeAlso ?G .
    graph ?G {
        ?P a foaf:Person .
        ?P foaf:name ?N
    }
}
```

Answers:

?N
Alice

Q₁: give me the names of persons in graph ?G

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select ?N  
from <http://example.org/myOnt.rdfs>  
from <http://bob.org/foaf>  
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    ?X rdfs:seeAlso ?G .  
graph ?G {  
    ?P a foaf:Person .  
    ?P foaf:name ?N  
}  
}
```



Answers:

?N
Alice

... where did *Bob* and *Charles* go?

Q₂: give me the names of persons in graph ?G

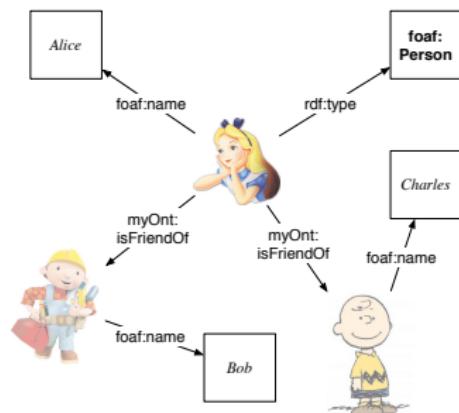
```
select ?N
using ontology <http://example.org/myOnt.rdfs>
from <http://bob.org/foaf>
from named <http://alice.org/foaf>
where {
    bob:me myOnt:isFriendOf ?X .
    ?X rdfs:seeAlso ?G .
    graph ?G {
        ?P a foaf:Person .
        ?P foaf:name ?N
    }
}
```

Answers:

Q₂: give me the names of persons in graph ?G

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graph ?G {  
    ?P a foaf:Person .  
    ?P foaf:name ?N  
}  
}
```

?N
Alice
Bob
Charles



Answers:

Q₂: give me the names of persons in graph ?G

```
select ?N
```

```
using ontology <http://example.org/myOnt.rdfs>
```

```
from <http://bob.org/foaf>
```

```
from named <http://alice.org/foaf>
```

```
where {
```

```
    bob:me myOnt:isFriendOf ?X .
```

```
    ?X rdfs:seeAlso ?G .
```

```
graph ?G {
```

```
    ?P a foaf:Person .
```

```
    ?P foaf:name ?N
```

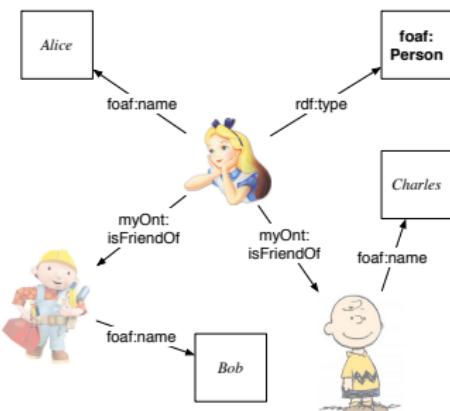
```
}
```

```
}
```

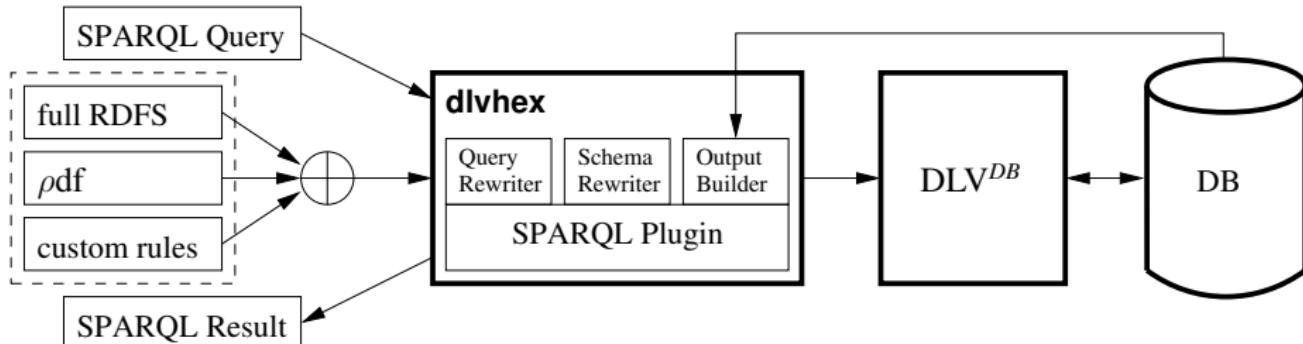
Answers:

?N
Alice
Bob
Charles

... the result of *Q₂* includes *Bob* and *Charles*!



The GiaBATA system



- ▶ **SPARQL to Datalog rewriter** as part of a plugin for **dlvhex**
- ▶ **Schema Rewriter** which adapts datalog rules to the DB schema
- ▶ **DLV^{DB}** datalog engine, which creates native SQL queries
- ▶ **DBMS** storing the RDF data according to some storage schema

Outline of the GiaBATA Demo



- ▶ dynamic dataset vs. static dataset (materialization)
- ▶ query rewriting and optimization
- ▶ preliminary benchmark results

