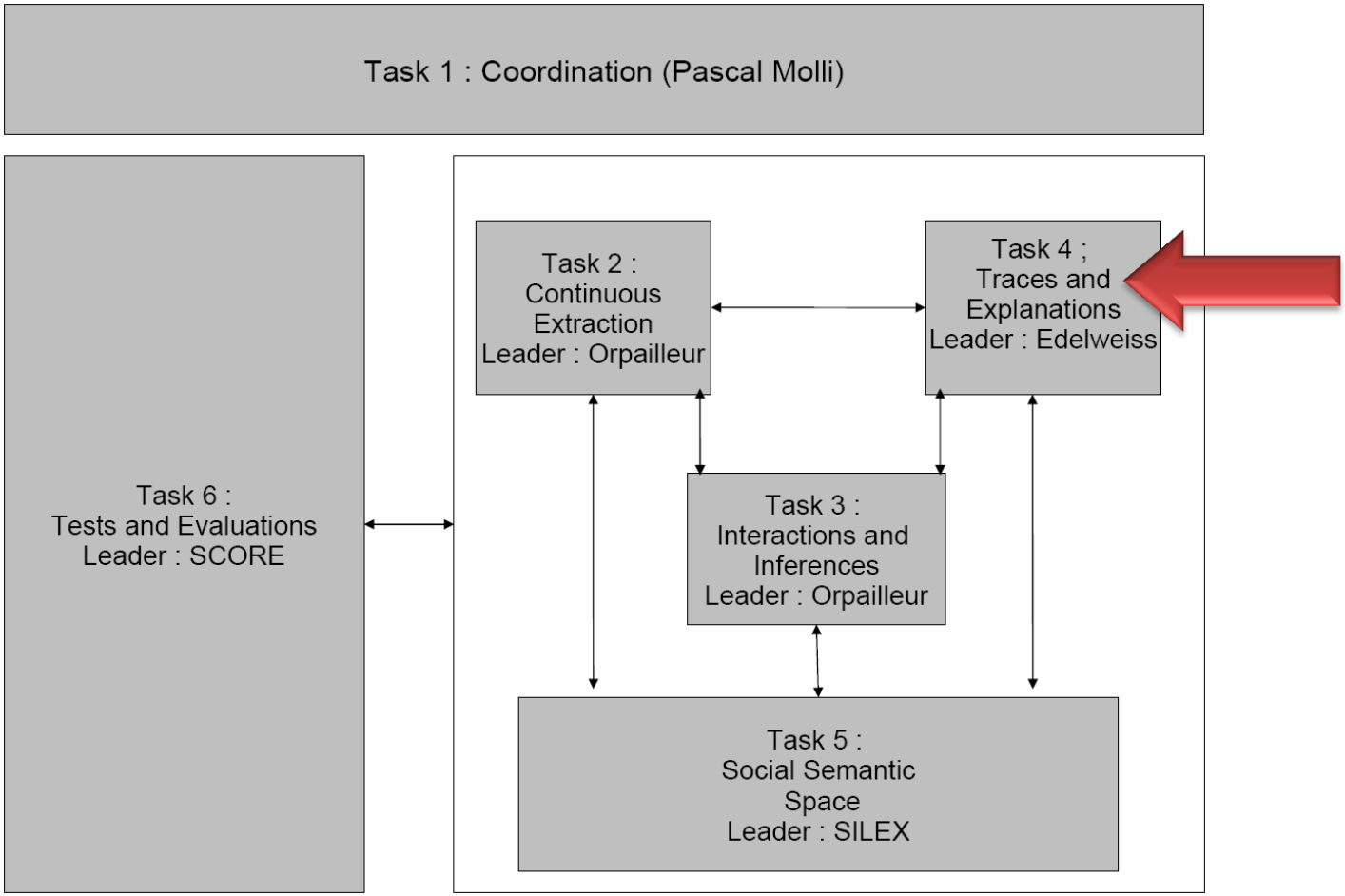
KolFlow task 4



T4.1: Alter Ego Assistant (LIRIS)

provide users with a mean to explain knowledge available in the systems by using interaction traces.

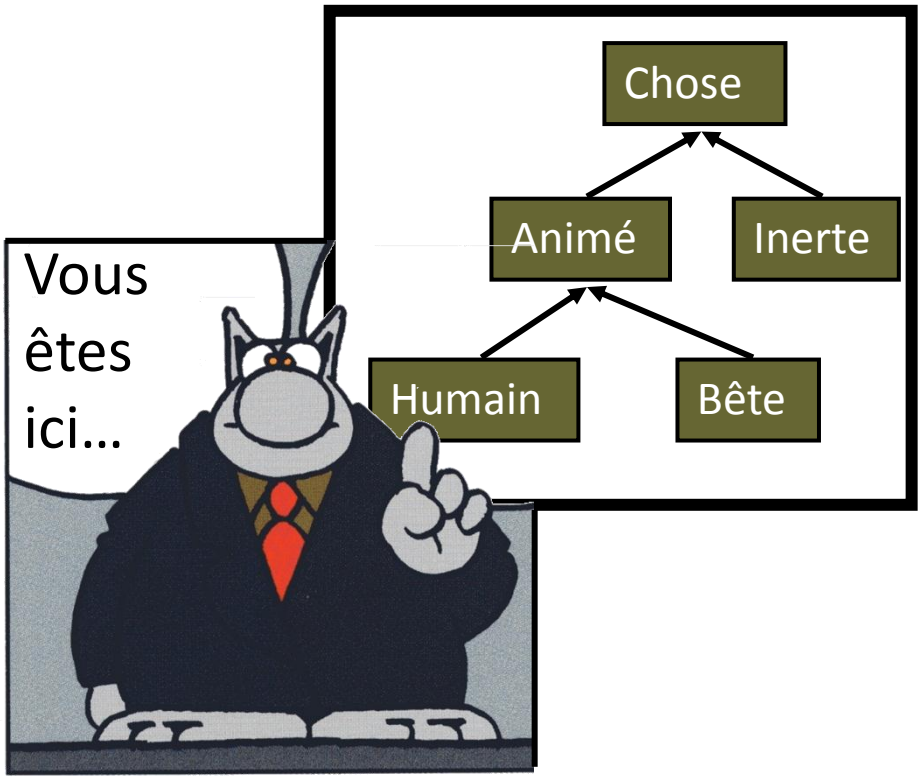
- visualize and manipulate interaction traces.
- retrieve reusable sequences to explain the.
- reason on traces.
- share and reuse trace knowledge (episodes signatures, similarity measures, traces, models of traces,...).

T4.2: Opening query-solving mechanisms.

turn a black box into a system able to concisely explain its execution

- none of the semantic web search engine has the ability to explain how it obtained a given result or why it failed to obtain one.
- ontology-based query and the reasoning involved to be explained too
- propose self-explaining query-searching algorithms
- summarize and express search strategy and inferences
- explain performances and failures (e.g. most frequent failure points)
- suggesting changes to queries / alternative queries

```
select ?x where { ?x rdf:type #Man } ➡ #darth
#darth type #Person
#darth  #father  #luc
#father domain #Male
#Man equivalentClass Intersection (#Male #Person)
```



```
select ?x where {
 ?x father ?y
 ?x name "vdaer"
}
```

```
select ?x where {
 ?x father ?y
 ?x name "vader"
}
```

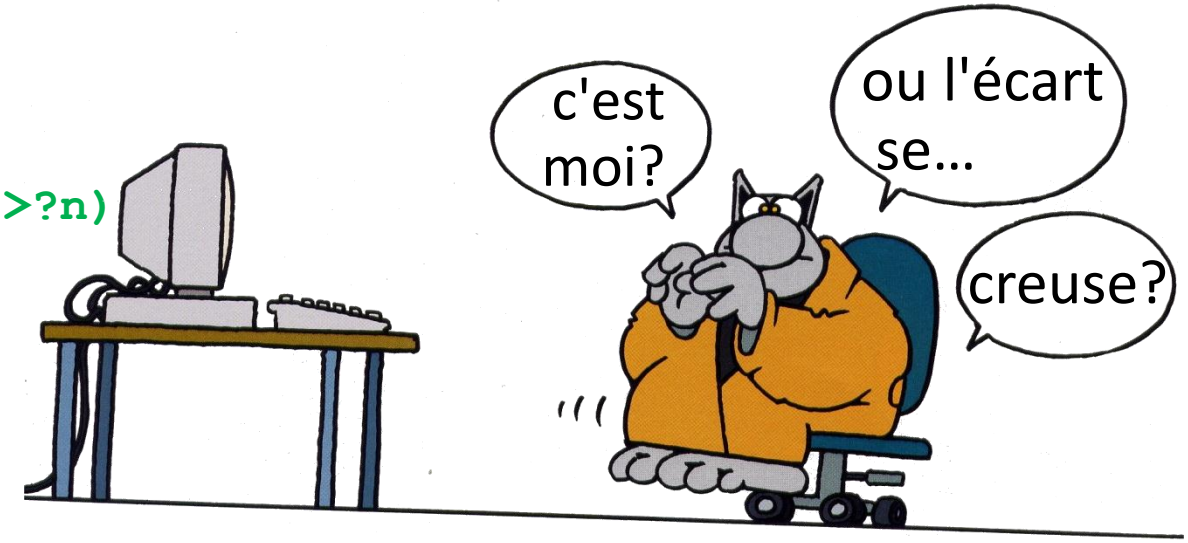
```
select ?x where {
 ?x parent ?y
 ?x name "vader"
}
```

```
select ?x where {
 ?x father ?y
 ?x name "vader"
}
```

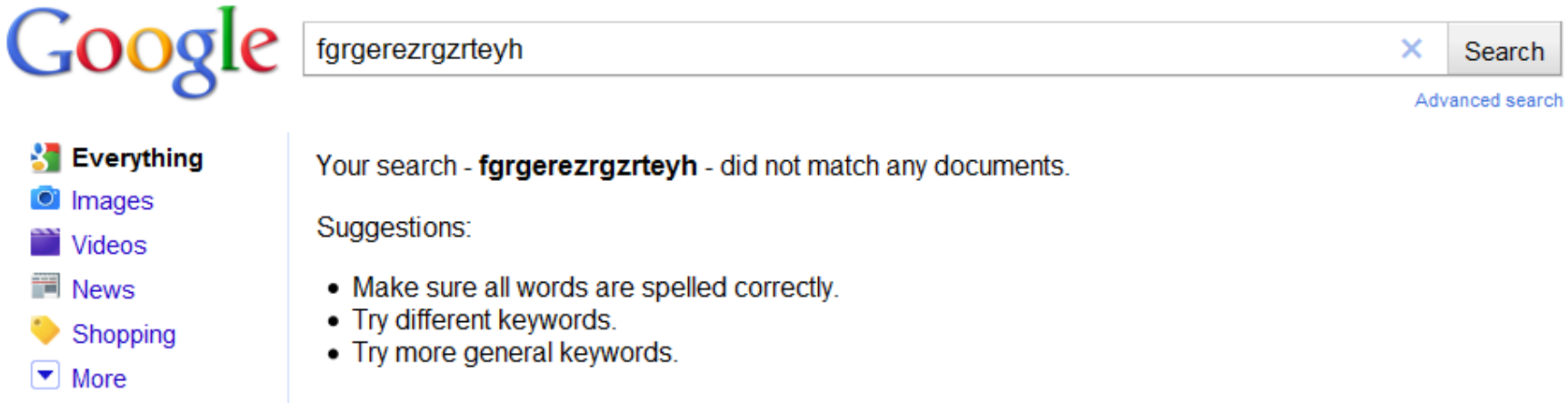
```
select ?x where {
 ?x father ?y
 ?x name "vader"
 ?x read #ArtOfWar
}        Ø
```

```
select ?x where {
 ?x father ?y
 ?x name ?n
 FILTER ("u"<=?n && "a">?n)
}

select ?z where {
  ?x father ?y
  {   { ?y father ?z }
  UNION
      { ?yy mother ?z } }
}
```



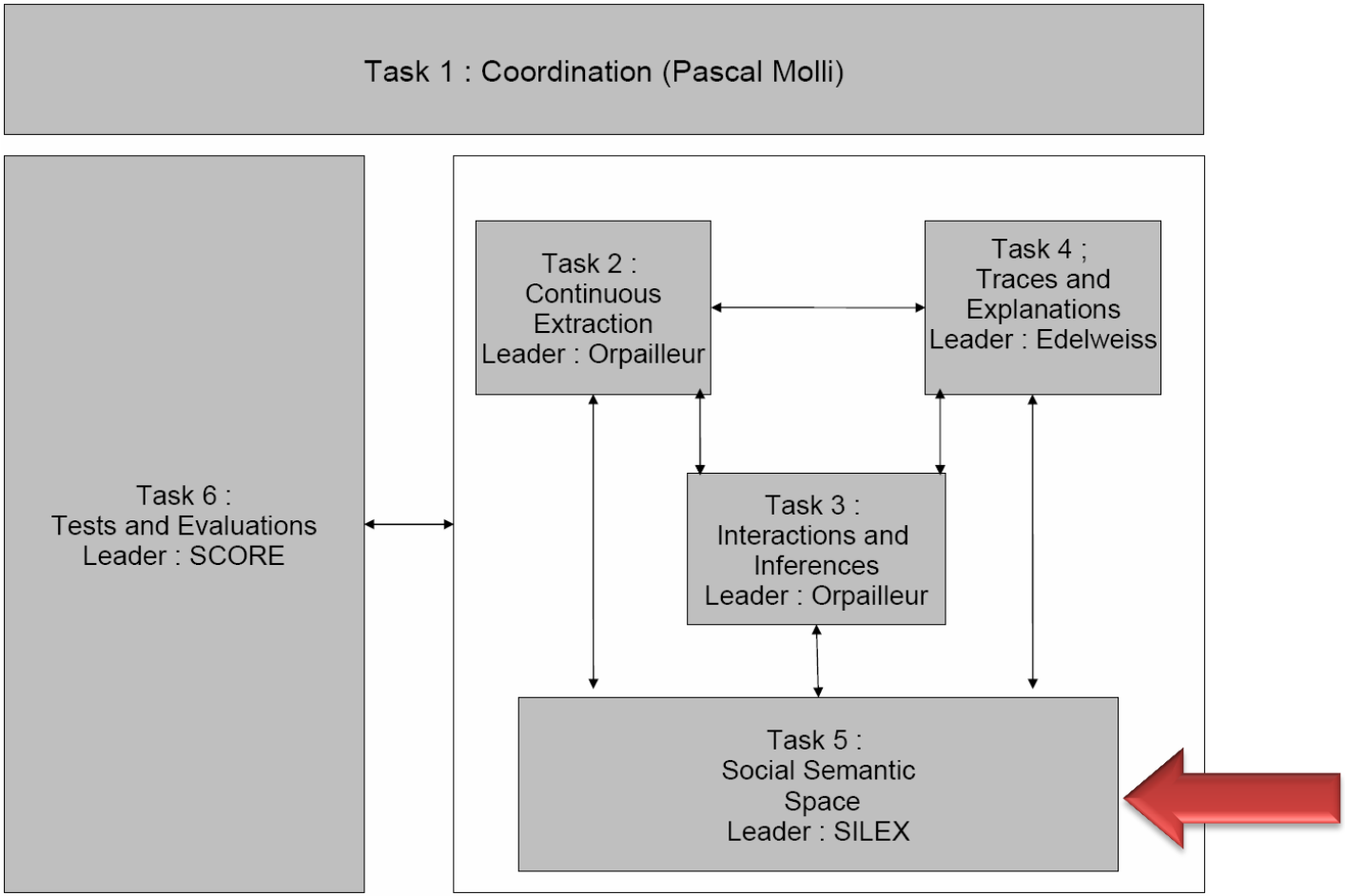
path regexp in SPARQL 1.1, post process (distinct, group by, etc.), from / from name …



MVC for SPARQL and RDFS/OWL engine

- events and event listeners in KGRAM
- step by step and debugger
  (demo)
- events in compiling a query
- patterns of usual mistakes
- user profiles (developer, beginner, etc.)
- eclipse plug-in

KolFlow task 5



T5.2: Distributed semantic queries

extending to a distributed context

- indexing and publishing the content of the bases to advertise their potential contributions;
- decomposing a query and routing sub-queries to relevant bases, and merging partial results;
- documenting and explaining the distribution process integrating the local explanation mechanisms of the solicited bases.
- applying this architecture to the special case of conflicts detection between deferent sources.

index of a server

characterize its content :

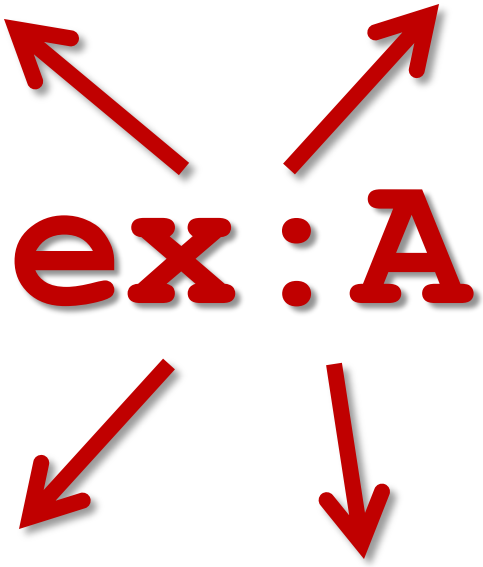
its stars and its paths

annotation

```
ex:A rdf:type idg:Car .
ex:A es:includes ex:B .
ex:B rdf:type id:Door .
ex:B es:includes ex:C .
ex:C rdf:type id:Window .
ex:C es:fixedBy  ex:D .
ex:A es:height "1.219" .
ex:A es:width "1.497" .
ex:A es:madeOf  ex:E .
```

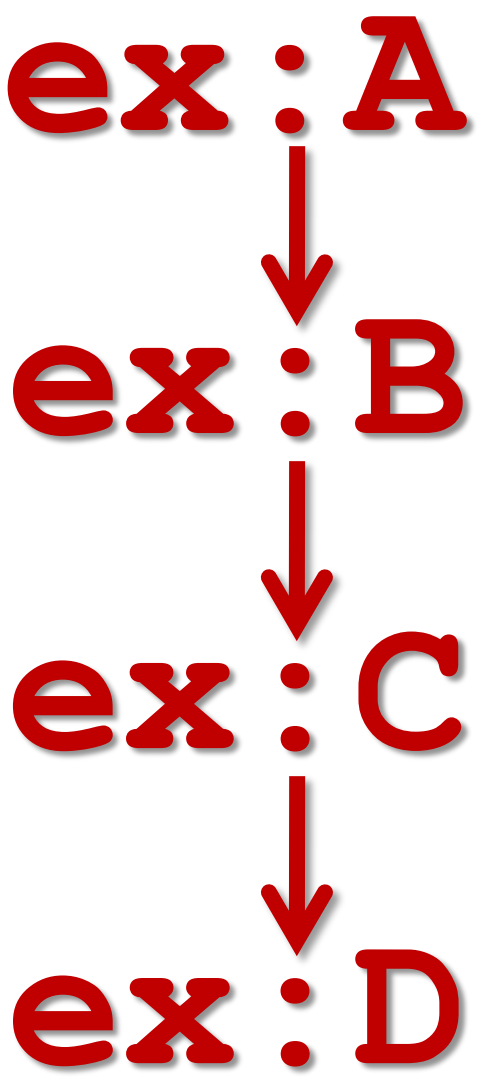
star

```
ex:A rdf:type idg:Car .
ex:A es:includes ex:B .
ex:B rdf:type id:Door .
ex:B es:includes ex:C .
ex:C rdf:type id:Window .
ex:C es:fixedBy  ex:D .
ex:A es:height "1.219" .
ex:A es:width "1.497" .
ex:A es:madeOf  ex:E .
```



path

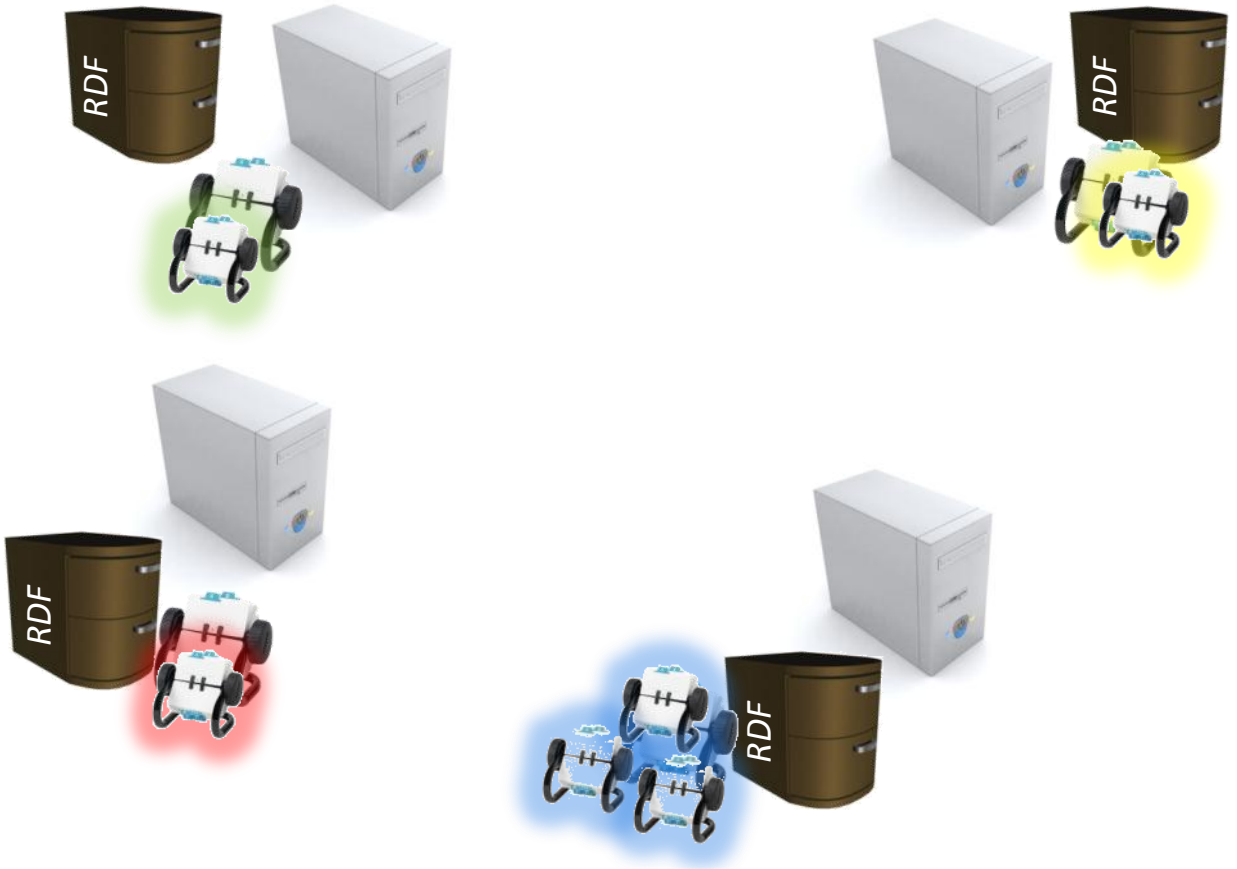
```
ex:A rdf:type idg:Car .
ex:A es:includes ex:B .
ex:B rdf:type id:Door .
ex:B es:includes ex:C .
ex:C rdf:type id:Window .
ex:C es:fixedBy  ex:D .
ex:A es:height "1.219" .
ex:A es:width "1.497" .
ex:A es:madeOf  ex:E .
```



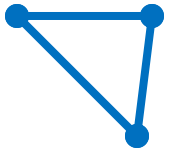
in the index we only keep the **types**

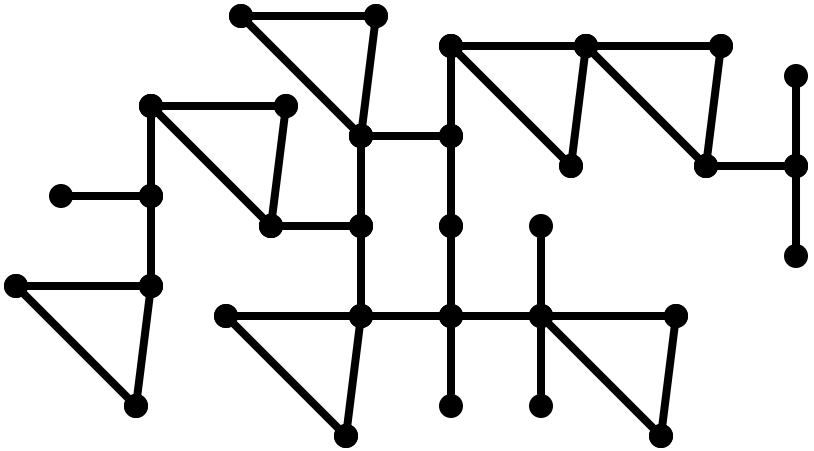
the index built from paths and stars is an annotation of the server

know the other servers



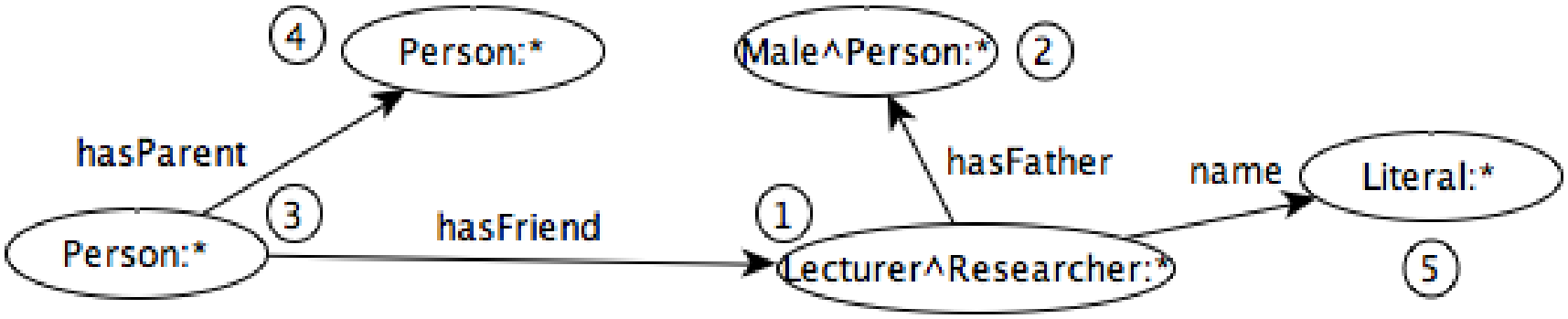
recherche de motifs fréquents
arbitraires

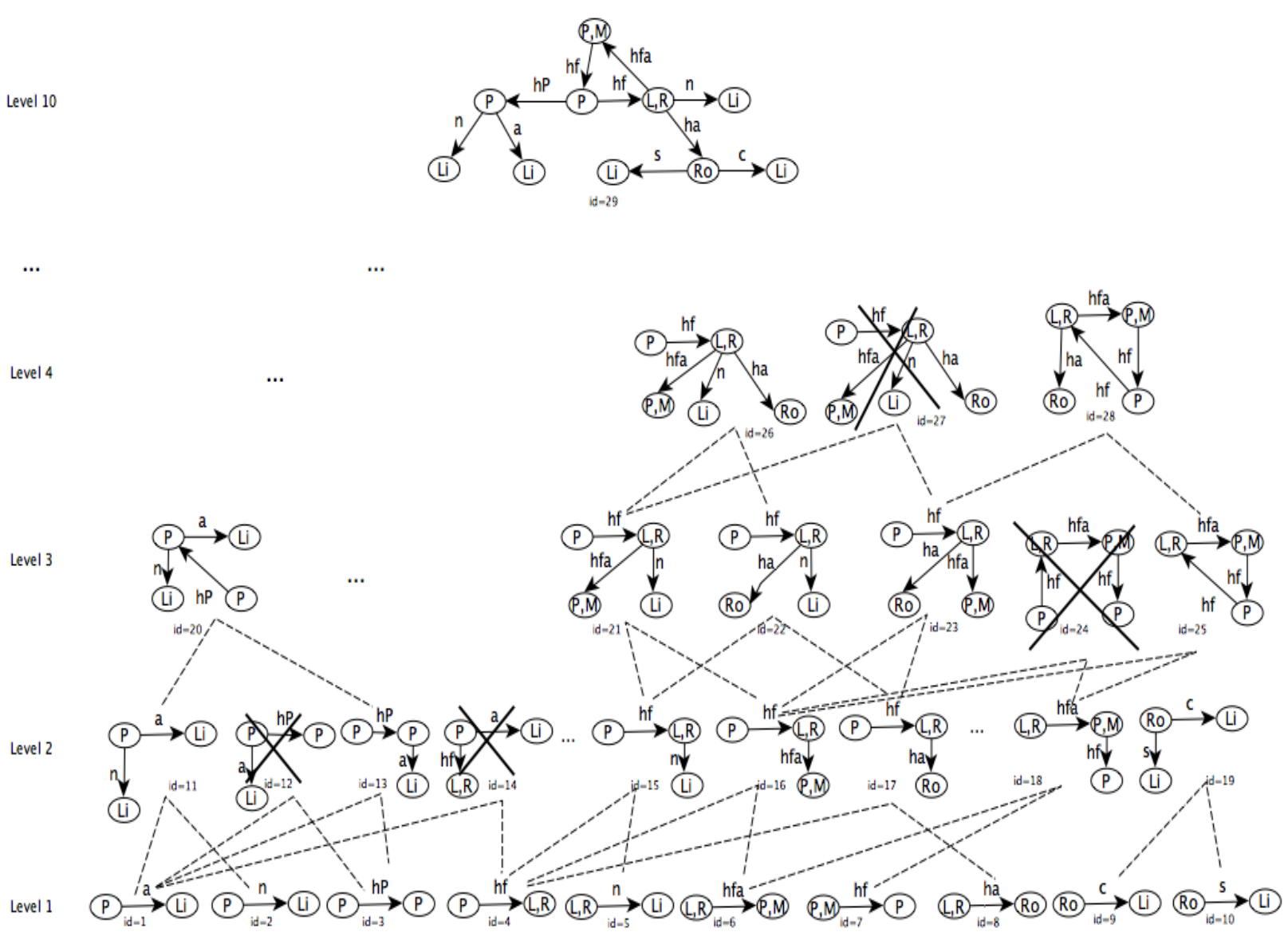




DFS coding of RDF [Basse et al.]

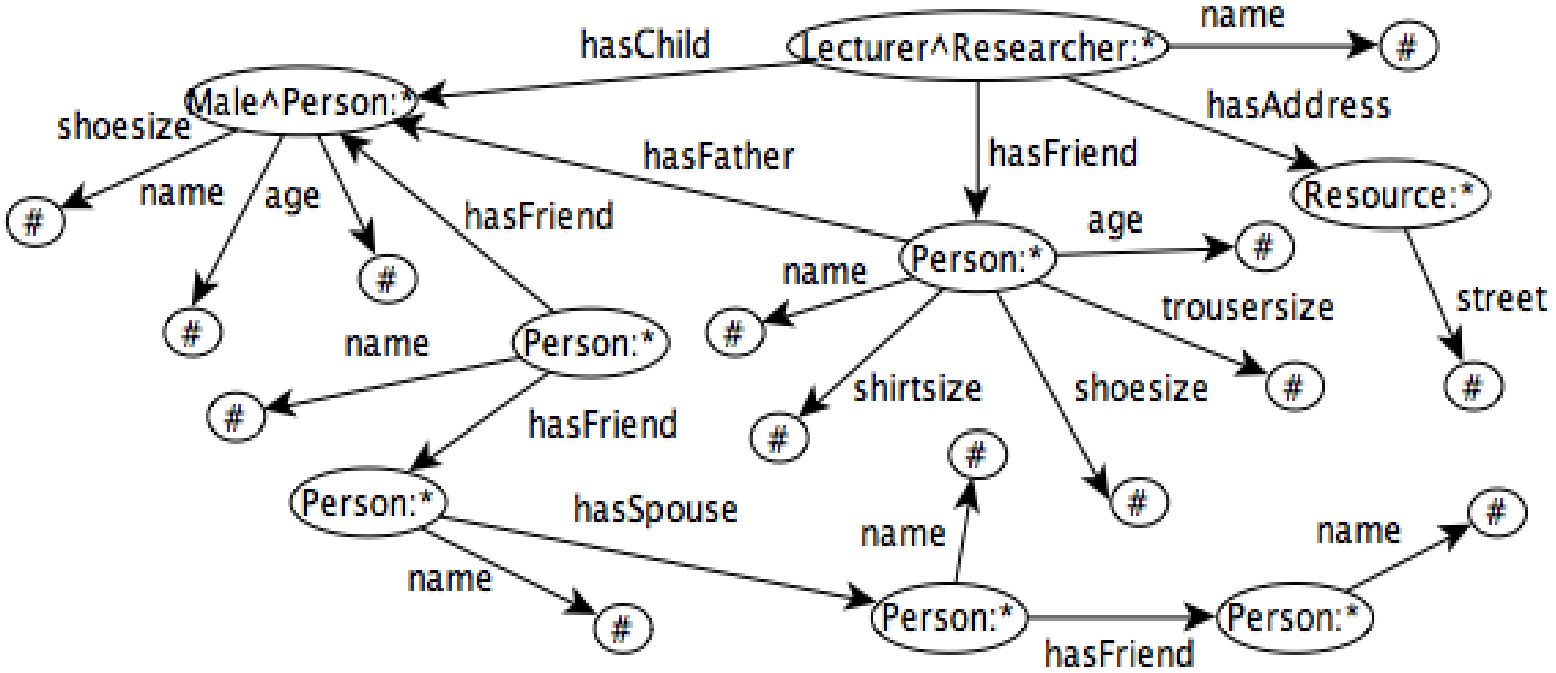
Properties	age	1
	city	2
	hasAdress	3
	hasFather	4
	hasFriend	5
	hasParent	6
	Name	7
	Street	8
Types of subjects or Objects	Lecturer∧Researcher	9
	Male∧Person	10
	Person	11
	Resource	12
	Literal	0





Latice of codes and patterns

[Basse et al.]



exemple de top pattern

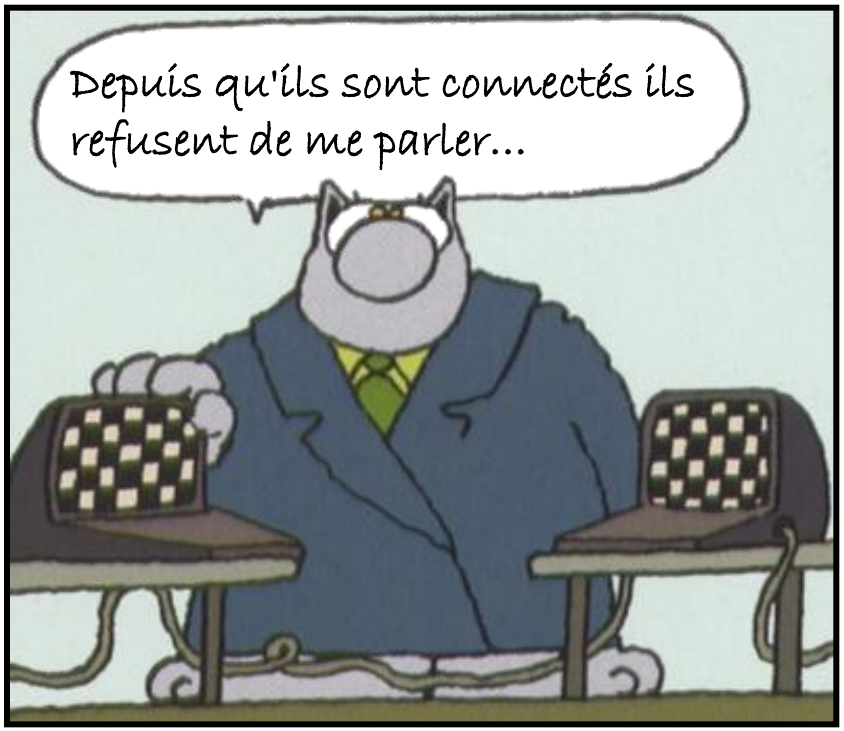
sur une base mélangeant plusieurs sources FOAF

decomposing

into sub-queries (stars and paths)

SPARQL 1.1…

SERVICE & BINDING


Depuis qu'ils sont connectés ils refusent de me parler...

Description of PhD : "Solving problems upstream and downstream of a distributed query"

This PhD subject will look at two aspects of query solving over distributed semantic web data:

- Opening query-solving mechanisms to users (task 4): explaining query-searching process and inferences, and the errors encountered. Suggesting changes to queries, suggesting alternative queries. Explaining performances. Help in formulating queries and understanding of results and resolution process.
- Handling and explaining the distribution of a query over several sources (task 5): Indexing and publishing the content of the bases to advertise their potential contributions.
- Decomposing and routing sub-queries. Following the process. Using this approach to detect conflicts between different contributors.
- The internship is included to assist the development of a prototype.

Non-permanent personnel funded by ANR

Name	*Status*	*%*	*Months*
PhD Edel	PhD	100	36
Intern. Edel	Internship	100	6