SPARQL Query Language
Query Forms

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Outline (Slides based on F. Freitas, Cin/UFPE, Brazil)

1. Basic queries
2. Constraints
3. Aggregation
4. Graphs
5. **Query Forms**
6. SPARQL in Fuseki

Query Forms

- SELECT
  - returns all, or a subset of the variables bound in a query pattern match
  - formats : XML or RDF/XML

- CONSTRUCT
  - returns an RDF graph constructed by substituting variables in a set of triple templates

- DESCRIBE
  - returns an RDF graph that describes the resources found.

- ASK
  - returns whether a query pattern matches or not.

CONSTRUCT Examples (I)

@prefix foaf: <http://xmlns.com/foaf/0.1/> .
_:a foaf:name "Alice" .
_:a foaf:mbox <mailto:alice@example.org> .

  PREFIX foaf: <http://xmlns.com/foaf/0.1/>
  PREFIX vcard: <http://www.w3.org/2001/vcard-rdf/3.0#>
  CONSTRUCT { <http://example.org/person#Alice> vcard:FN ?name }
  WHERE { ?x foaf:name ?name }

     @prefix vcard: <http://www.w3.org/2001/vcard-rdf/3.0#>.
      <http://example.org/person#Alice> vcard:FN "Alice" .

#extracting a whole graph from the target RDF dataset
CONSTRUCT { ?s ?p ?o }
WHERE { GRAPH <http://example.org/myGraph> { ?s ?p ?o } . }

CONSTRUCT Examples (II)

accesing a graph conditional on other information contained in the metadata about named graphs in the dataset

```
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX app: <http://example.org/ns#>
CONSTRUCT { ?s ?p ?o }
WHERE { GRAPH ?g { ?s ?p ?o } .
        { ?g dc:publisher <http://www.w3.org/> } .
        { ?g dc:date ?date } .
        FILTER app:myDate(?date) > "2005-02-8T00:00:00Z"^^xsd:dateTime.
        }
```

DESCRIBE

The DESCRIBE form returns a single result RDF graph containing RDF data about resources.
[...] **The description is determined by the query service.**

```
PREFIX ent: <http://myorg.example/employees#>
DESCRIBE ?x
WHERE { ?x ent:employeeId "1234" }
```

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix vcard: <http://www.w3.org/2001/vcard-rdf/3.0> .
@prefix myOrg: <http://myorg.example/employees#> .
 _:a myOrg:employeeId "1234" ;
     foaf:mbox_sha1sum "ABCD1234" ;
      vcard:N [ vcard:Family "Smith" ;
                vcard:Given "John" ] .
foaf:mbox_sha1sum rdf:type owl:InverseFunctionalProperty
 .
```

ASK

Applications can use the ASK form to test whether or not a query pattern has a solution. No information is returned about the possible query solutions, just whether or not a solution exists.

@prefix foaf: <http://xmlns.com/foaf/0.1/> .

@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
_:a foaf:name "Alice" .

_:a foaf:homepage <http://work.example.org/alice/> .

_:b foaf:name "Bob" .

_:b foaf:mbox <mailto:bob@work.example> .

PREFIX foaf: <http://xmlns.com/foaf/0.1/>

ASK { ?x foaf:name "Alice" } .