



Conceptual Search: Incorporating Geospatial Data into Semantic Queries

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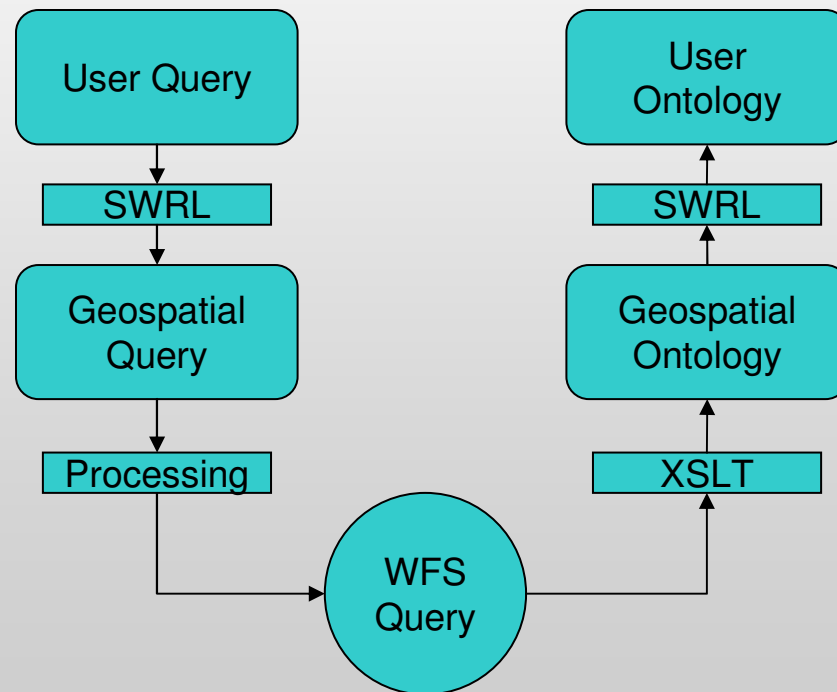
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Concept Definition

- Current Semantic Web query languages are inadequate for defining concepts
 - What is my preferred 747-capable airport near Washington, D.C.?
 - Preference, 747-capable, near
- Deconstruct a concept into a set of semantic queries and their interactions
- Involve geospatial data in the entire process
- Open source

Datasource Invocation

- Allow users to query geospatial datasources in their own vocabulary



[2] Kolas, Hebel, Dean. "Geospatial Semantic Web: Architecture of Ontologies". GeoS 2005.

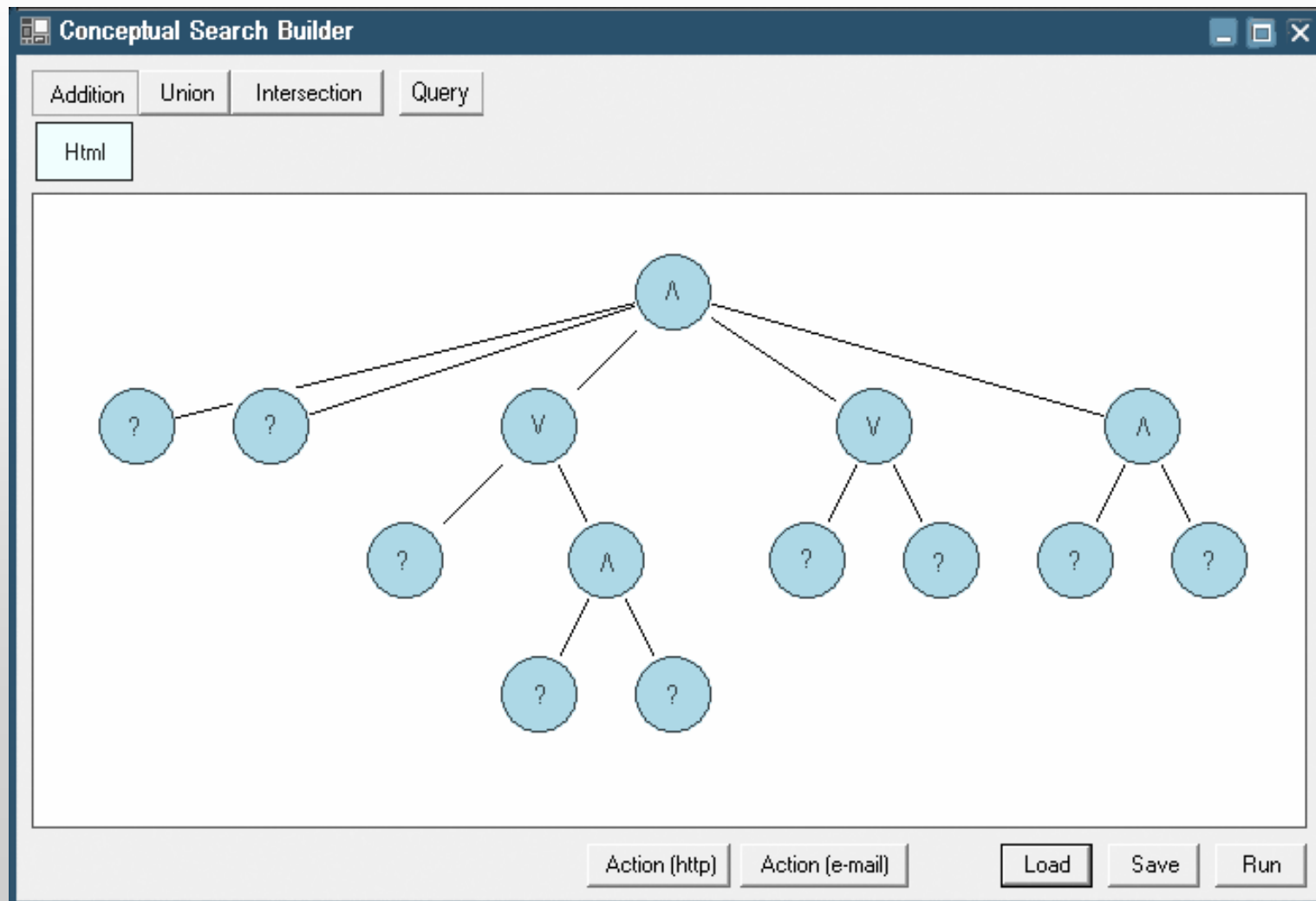
Datasource Integration

- Provide geospatial processing for SWRL.
- GeoSWRL – a set of SWRL builtins
 - Manipulates the GML-based ontology
 - Handles OGC geospatial operations
- Can be used for both testing values and for assignment
 - Is an airport within 100 miles of D.C.?
 - How far is an airport from D.C.?

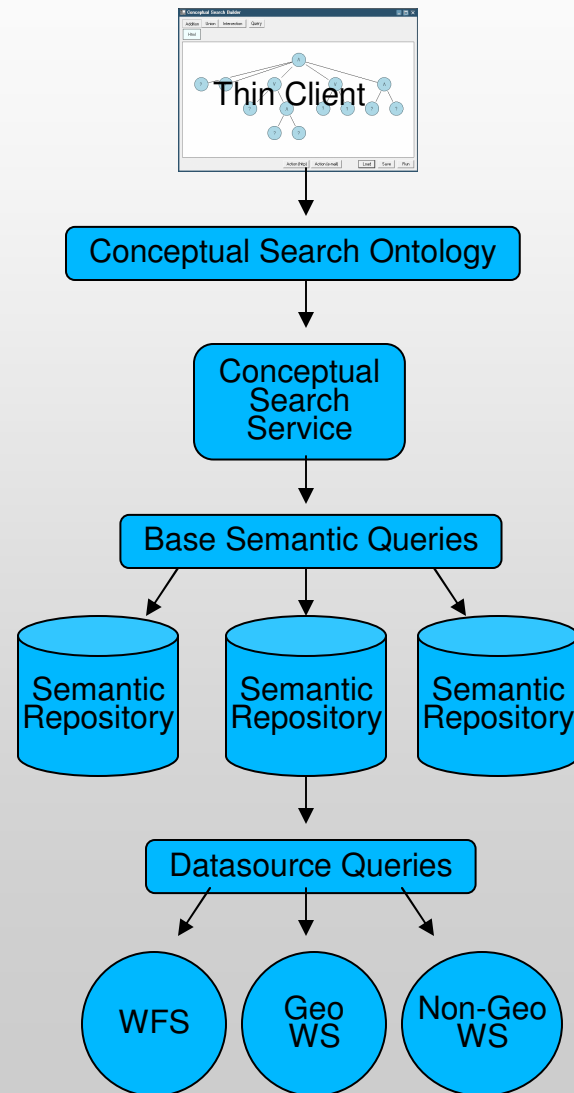
Datasource Interpretation

- Conceptual search defines how the results of base semantic queries are related
- Uses weights and thresholds to define abstract ideas
- Manipulates sets of URIs from each query
- The Conceptual Search is run continuously, alerting the analyst when the results change

Screenshot



Implementation



Q & A

- Thanks for your time
- Questions?
- Comments?