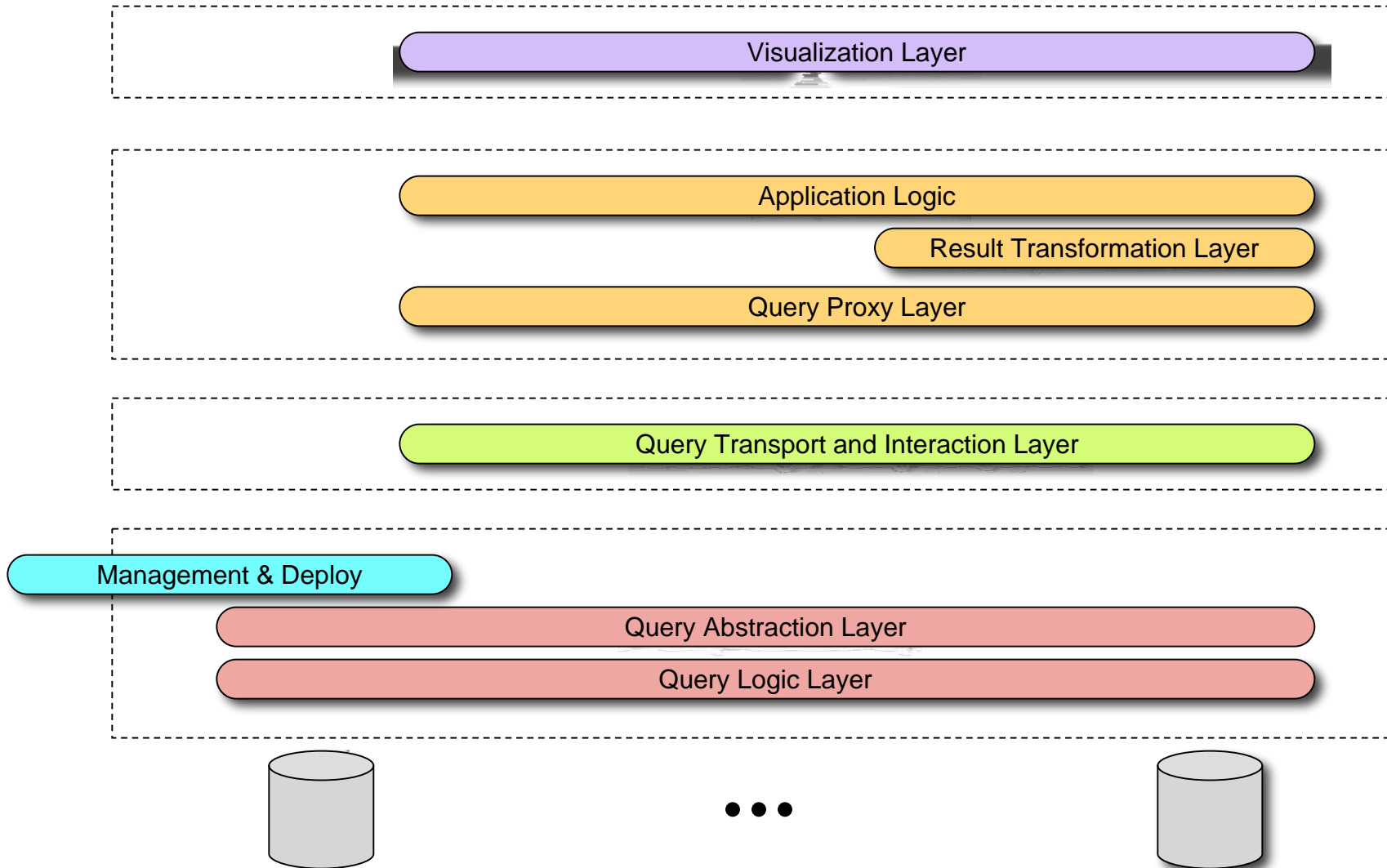
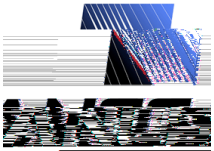


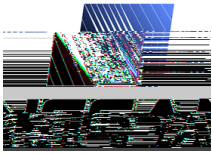
Automated Learning Group & Data-Intensive Technologies and Applications

*National Center for Supercomputing Applications
University of Illinois at Urbana-Champaign*

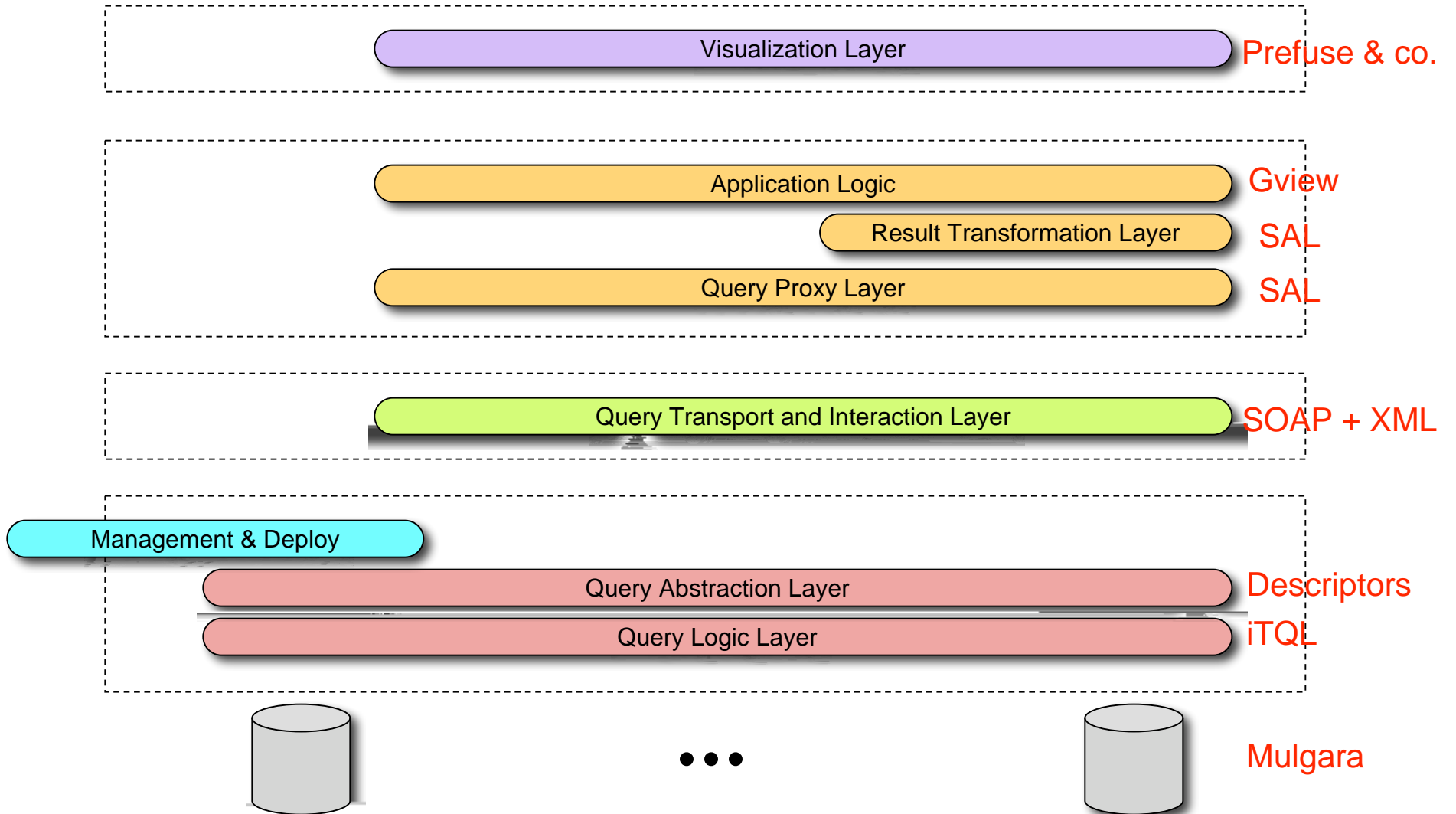
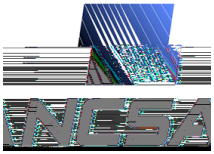



- Use RDF store for massive storage of processed data and analytical results
- Query information out of the store via a conceptual abstraction
- Separate querying logic from application logic
- Visualize content stored on RDF stores
- Have a working prototype showing the basic functionalities





- Metadata storage: Mulgara (open source fork of Kowari)
- Transport: SOAP+XML
- Query abstraction proxy (SAL)
- Visualization: Prefuse, JFreeChat, & basic Swing
- The prototype glue: Gview



- 
- Mulgara provide XSL/XLST facilities
 - Other implementations provide similar mechanisms Jena/Joseki
 - Allow to define a query unit and publish it as a web service
 - Single queries (iTQL)
 - Complex query logic (iTQL+XSLT)
 - Handled on a web app
 - Runs on SOAP
 - Allow reflection on (RDF based):
 - Descriptions
 - Parameters (We added type casting)
 - Abstract return types (Our modification)
 - Query becomes an abstraction entity
 - Separated from the application logic
 - Managed and deployed on demand



mulgara/semantic-store

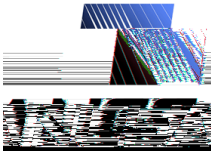
[location: descriptors> html descriptor]

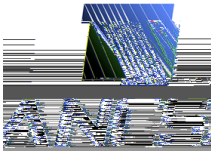
descriptor url

cts and properties that a given

ct-sbj subject actions, returns all the object

that match the provided expression. the query (as a convention) also returns





Interface Summary

URI	This class contains the basic methods provided to transform and answer.
AnswerTransformer	This interface defines the basic methods provided to transform and answer.
Query	This interface defines the basic methods provided to transform and answer.
Reflector	This interface defines the basic methods provided to transform and answer.
ReflectorFactory	This interface defines the basic methods provided to transform and answer.

```

URI uriReflector = new URI("http://foo.domain:some_port/webservices/descriptor/descriptors/Some_path/");
URI uriContext = new URI("http://foo.domain:some_port/webservices/descriptor/descriptors/Some_path/");
URI uriQuery = new URI("http://foo.domain:some_port/webservices/descriptor/descriptors/Some_path/");

Reflector r = ReflectorFactory.getReflector(uriReflector, "metadata-store-soap");

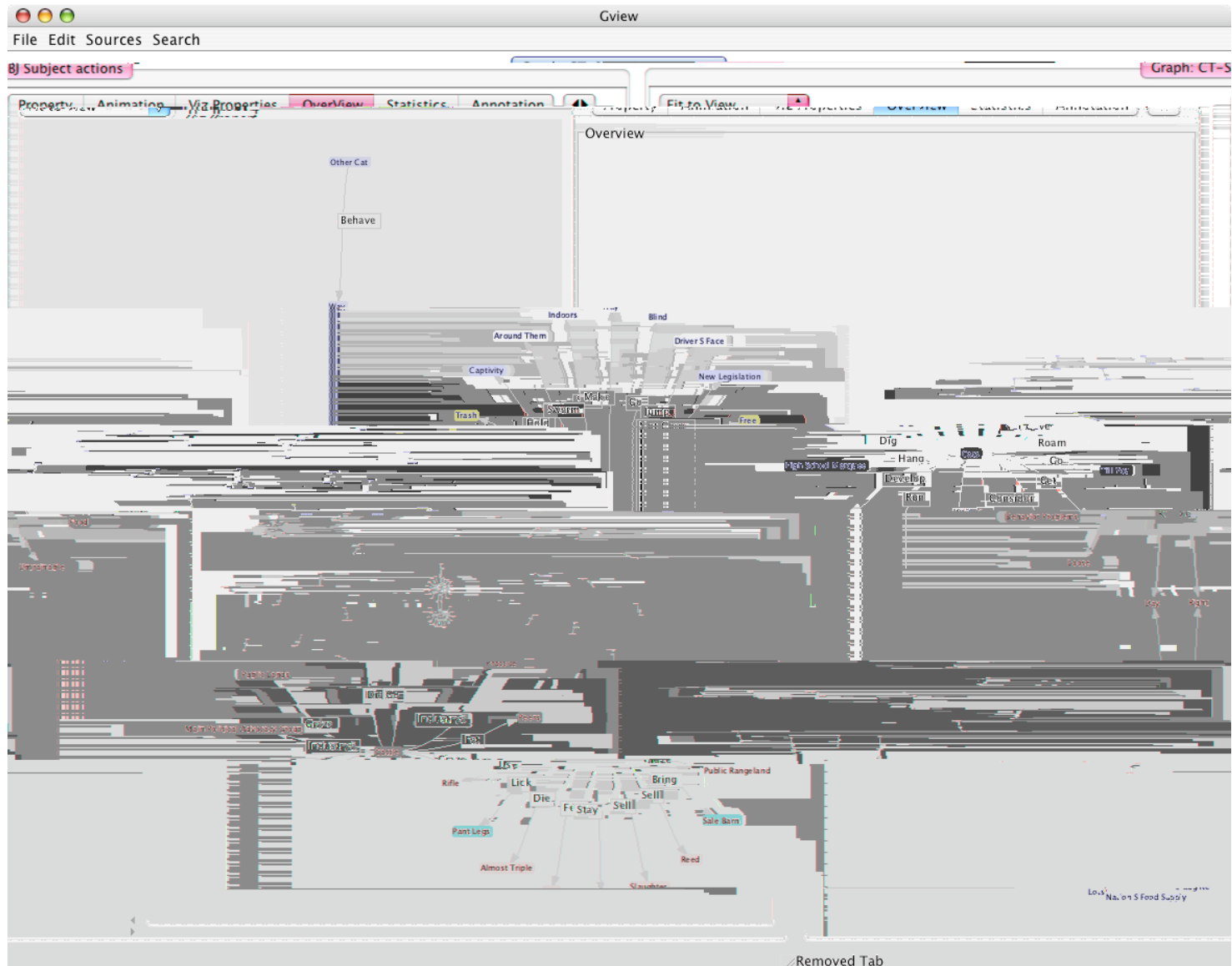
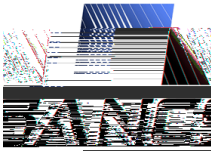
// Creating a transaction and running a simple query
System.out.println("----- Answer retrieved -----");
AnswerTransformer at = r.getAnswerTransformer();
Transaction t = r.createNewTransaction();
Query query = at.createQuery(uriQuery);
//query.setContextURI(uriContext);
Transaction t = r.createNewTransaction();
//query.setContextURI(uriContext);

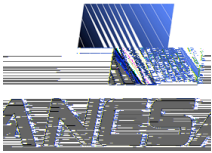
}
System.out.println("-----");

```

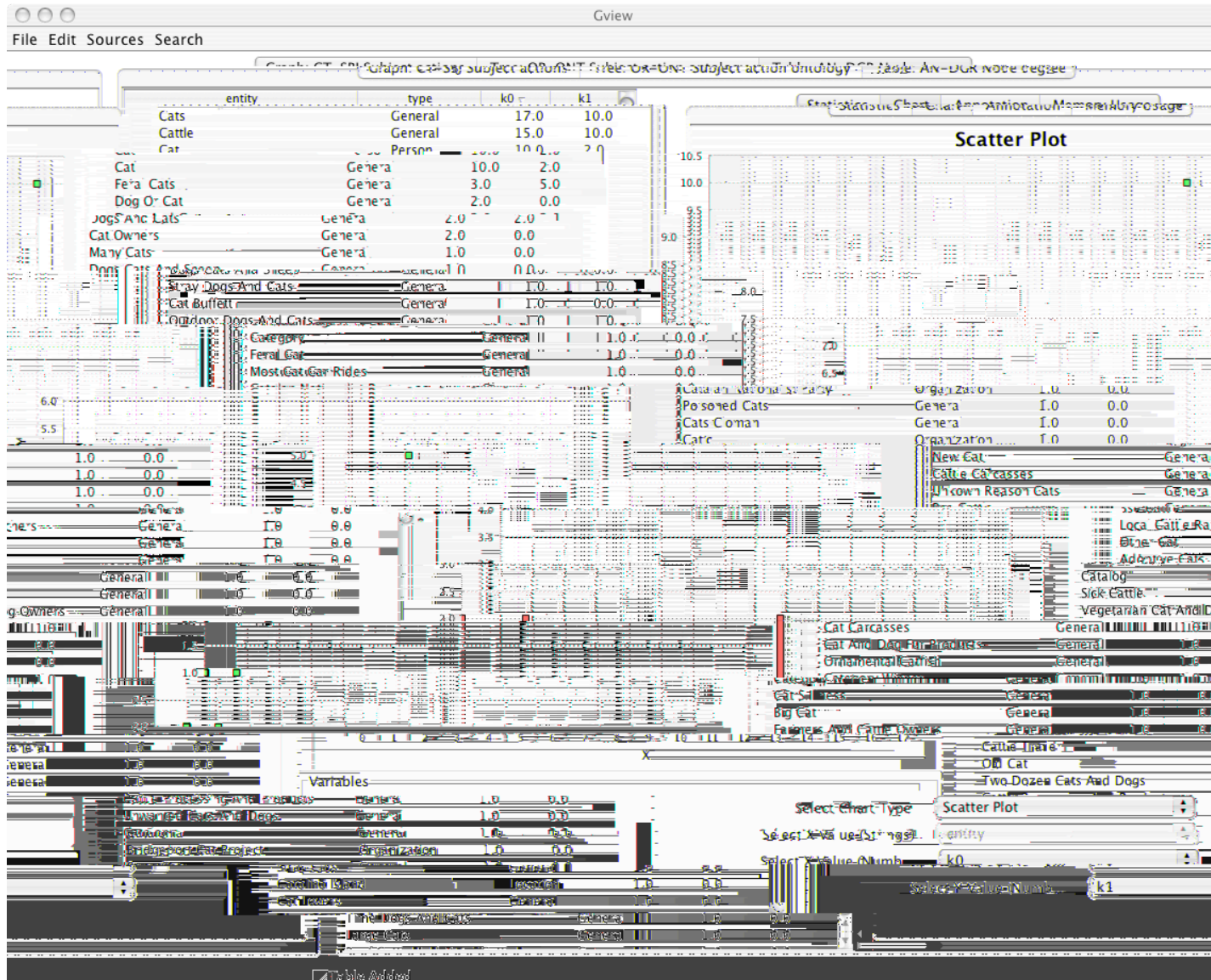


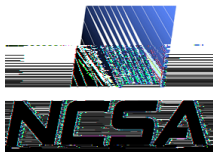
- SAL encapsulates the XML results in transformable Answer objects
- Answers can be transformed to feed visualization packages
- For instance answers can be transformed to:
 - GraphML
 - TreeML
 - ...
- Extensible via XSLT
- Prefuse, JFreeChart, Swing





The screenshot displays the Cytoscape software interface. At the top, the menu bar includes 'File', 'Edit', 'Sources', and 'Search'. The main window title is 'Cytoscape'. Below the menu bar, there are tabs for 'Graph: CT-SBJ Subject actions' and 'Tree: OR-ONT Subject action ontology'. A 'Fit to View' button and a 'Distance' slider (set to 10) are visible. The central area shows a graph visualization with nodes and edges. To the right, there are several control panels: 'Layout Properties' (with 'Organization: Farmington Police Department' and 'Location: Home'), 'NodeLinkTreeLayout', 'Layout Characteristics' (with 'Left-Right' and 'Depth Level Spacing' sliders), 'Radius Increment' (with a slider from 0 to 1000), 'Minimum Radius' (with a slider from 0 to 400), and 'Framing Space' (with a slider from 0 to 400). At the bottom, there is an 'Attention' panel with a search bar and a 'Disabled All Tab Animations' checkbox.





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