Course Project – Query architecture

Jason Wei
Query architecture

Query architecture search for information from a data model.

RSS feed filter
Email finder
Semantics Web and Ontology

Central notion is to apply criterion to some underlying data to select interesting information.
Yahoo Pipes

Diagram of Yahoo Pipes workflow:
- Fetch Feed: URL http://www.osnews.com/files/rece
- Fetch Feed: URL http://rss.cnn.com/rss/cnn_topstories
- Union
- Filter:
  - Permit: items that match all of the following
  - Rules:
    - item.title Contains apple
- Pipe Output
Yahoo Pipes

Demo
Click to add description

Pipe Web Address: http://pipes.yahoo.com/pipes/pipe.info?id=40fee40783b1216813edd41736e469e6 (edit)

Use this Pipe

List
2 items

Apple's 45nm Refresh: How Much of an Improvement?
AndandTech has thoroughly reviewed the new Penryn-based MacBooks and MacBook Pros and concludes: "The biggest improvement by far comes in the battery life department. Just as we had seen earlier, you can expect these new models to outlast their predecessors by a good 7 - 15%. The performance...

Ubuntu Mobile Takes on Apple Touch Interface
"Canonical today hoped to preempt all comers today with news of Ubuntu Mobile. Its first Linux variant aimed at handhelds, the software is tailored for the Mobile Internet Devices expected to launch in spring based on Intel's Silverthorne technology and is designed to recognize basic..."
Eiffel RSS library

Library can be found at:

http://developer.berlios.de/projects/eiffelrss/
Metrics tool in EiffelStudio

A code quality checking tool with seamlessly working style:
  Coding – Metricing – Problem solving – Coding

Highly customizable:
  Define your own metrics to match particular requires

Metric archive comparison:
  Compare measurement of your software to others

Automatic metric quality checking:
  Get warned when some quality criterion are not met
Metrics tool – Evaluate metric

![Image of metrics tool interface]

- **Setup input domain:**
  - root_cluster
  - base
  - net
  - time
  - web

- **Select metric:**
  - Metrics
    - Class
      - Classes
      - Clients
      - Compiled classes
      - Deferred classes
      - Dependents
      - Descendants
      - Effective classes
      - Expanded classes
      - Frozen classes
      - Generic classes
      - Heirs
      - Indirect clients
      - Indirect heirs
      - Indirect parents
      - Indirect suppliers
      - Transitive Enforced classes
# Metrics tool – Investigate result

![](image)

**Metric name:** Classes  
**Type:** Basic  
**Unit:** Class  
**Value:** 377

**Input domain:**

- root_cluster
- base
- net
- time
- web

**Results:**

<table>
<thead>
<tr>
<th>Class</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTML_TABLE</td>
<td>web.table</td>
</tr>
<tr>
<td>HTML_TABLE_CONSTANTS</td>
<td>web.table</td>
</tr>
<tr>
<td>STDIN</td>
<td>webstdio</td>
</tr>
<tr>
<td>STDOUT</td>
<td>webstdio</td>
</tr>
<tr>
<td>SHARED_STDOUT</td>
<td>webstdio</td>
</tr>
<tr>
<td>SHARED_STDIN</td>
<td>webstdio</td>
</tr>
<tr>
<td>HTML_PAGE</td>
<td>web.html</td>
</tr>
<tr>
<td>HTML_TEXT</td>
<td>web.html</td>
</tr>
<tr>
<td>HTML_GENERATOR</td>
<td>web.html</td>
</tr>
<tr>
<td>HTML_CONSTANTS</td>
<td>web.html</td>
</tr>
<tr>
<td>HTML</td>
<td>web.html</td>
</tr>
<tr>
<td>HTML_ROOT</td>
<td></td>
</tr>
</tbody>
</table>

- **web.html**
- **webstdio**
- **web.table**
Metrics tool – Define new metric
How Metrics tool works

Eiffel system hierarchy
How Metrics tool works

Given a library, we want to find deferred features, we need:
First transform that library into a set of features
Then apply criterion “is_deferred” to that feature set
Possibly needed patterns

- Factory
- Visitor
- Composite
- Observer
- Decorator
- Iterator
- Adaptor

...
Possible project tasks

Bring the ability of adding new queryable elements

Enable query for new elements, such as
  AST nodes
  subversion histories
  ...

Or anything that you want to query for
See architecture of an industrial mature compiler/IDE is organized

- Separation different phases of compilation
- Interfaces between GUI and compiler
- Massive design pattern usage

Manipulate data structures while avoiding boring start-off work

- AST nodes ready to use instead of parsing
- Project configuration as basic data model
- Inheritance, type information ready for query

...