

Partial Generation of Contextualized Metadata in a Collaborative Modeling Environment

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Function of Metadata in General

- General
 - Indexing
 - Retrieving
 - Re-using
 - Pre-information
- Learning material
 - Network learning scenarios



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Problems with handling Metadata

- Critical problems concerning user given metadata:
 - Reliability of user provided data
 - Incompleteness
 - Inconsistency
- Requirements
 - Minimize users' tedious work
 - Ensure reliable data (how?)

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Problems with handling Metadata

- Approach
 - Automation of metadata generation
 - Use task context
 - Use tool information
 - Consider document histories
- Aims
 - Provide content based awareness in a user community
 - Enhance semantic retrieval
 - Build and connect learning communities

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Exploiting Task Context in a Modeling Environment

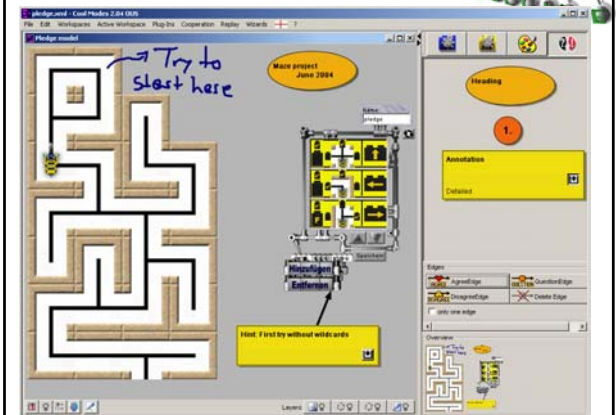
- Collaborative Open Learning and MODELing System = Cool Modes
- Supports discussions and synchronous cooperative modeling in various domains
- All plugins synchronously usable, mixing and combining different representations

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Cool Modes



Interfaces

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Tool-embedded Retrieval Strategies

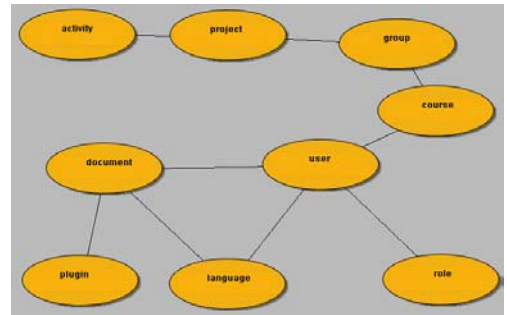
- Associative lookup strategy
 - Generate a query from the user's document
- One simple generalization step
 - Relevant slot (specified)
 - Free slot (requested)
 - Not relevant slot

Tool-embedded Retrieval Strategies

- Associative lookup strategy

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Task context from underlying ontology

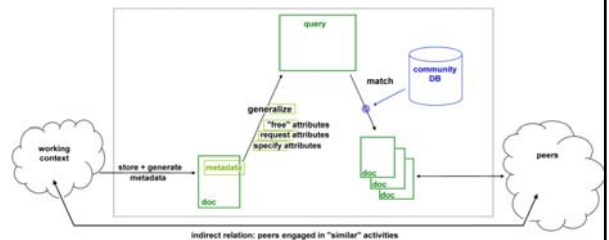


Metadata slots considered

- Enrich standard conform set of metadata, e.g. LOM
- Enrichment
 - Used tools
 - Context information
- Metadata types
 - Tool specific or independent
 - Context specific or independent

		context	
		ind.	spec.
tool	ind.	Date	Activity, e.g. project
	spec.	Plugin, e.g. UML	Contributors, e.g. Maria

Associative Lookup Strategy



Implementation

- XML based queries against Web Service
- General query patterns
 - Specified attribute: slot with value used as filter
 - Requested attribute: slot without value
 - Not relevant slots do not appear at all
- Results
 - Refine the query by a found document
 - Usually no content transmission
 - Document download

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Retrieval Query and Answer

XML representation

```
<query_result>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author">
      <value>Maria</value>
    </slot>
  </entity>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author" />
  </entity>
</query_result>
```

query

```
<query_pattern>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author" />
  </entity>
</query_pattern>
```

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Retrieval Query and Answer

XML representation

```
<query_pattern>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author" />
  </entity>
</query_pattern>
```

query

```
<query_result>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author">
      <value>Maria</value>
    </slot>
  </entity>
  <entity>
    <slot name="plug-in">
      <value>MazeDesign</value>
    </slot>
    <slot name="author">
      <value>Lena</value>
    </slot>
  </entity>
</query_result>
```

input for new query

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Outlook

- Use of document flows
 - Document history
 - Social Navigation
- Query patterns
 - Searching for documents which are similar to the one the user is currently working on
 - Build macros from typical searches

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Meta
Data
Thank you

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