Knowledge Formalization in the Age of Wikis

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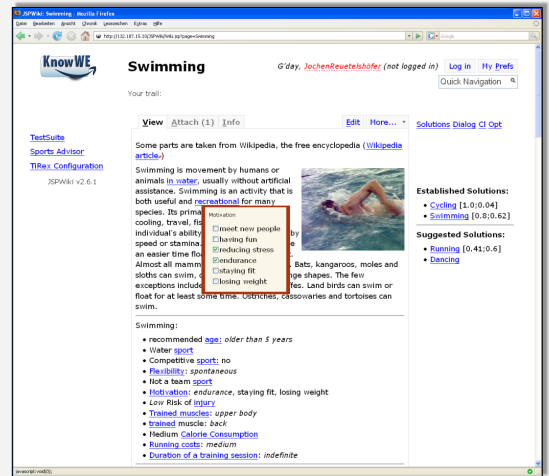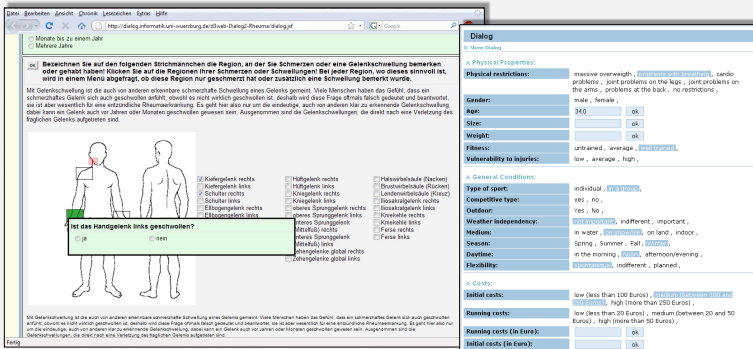
KnowWE

Overview

KnowWE is a semantic wiki designed for the integration of components for diagnostic problem-solving. To support the development of (diagnostic) knowledge systems, components for formalization (markup, editors), for reasoning (rules, decision-trees, fault models) and for executing/testing have been implemented. The goal is to combine the strength of knowledge-based systems with the ease of Wikis to support collaborative knowledge engineering.
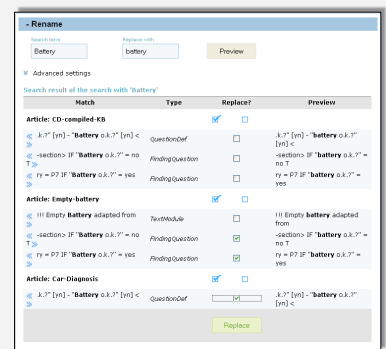
KnowWE

- Wiki-based workflow: collaborative fast and simple editing with immediate feedback.
- Combination of unformalized (startup documents) and (semi-)formalized knowledge.
- Problem-solving knowledge is instantly compiled into a knowledge base after saving a wiki page. It can be tested via starting test cases in user interviews.
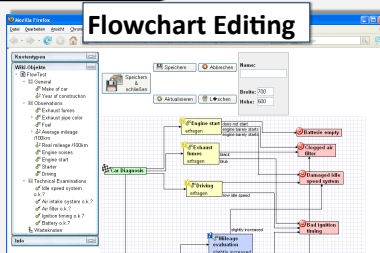

User Interviews

Refactoring

Markups and Editors

- Wiki editing (proprietary markup)
- Additional editors
  - Table/Inline-editing
  - Visual editors
- Syntax highlighting
- Verbose syntax-check
- Integrated refactoring tools
- Unit-test-cases
- Extensibility
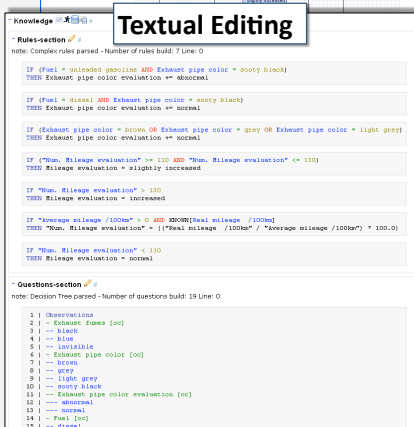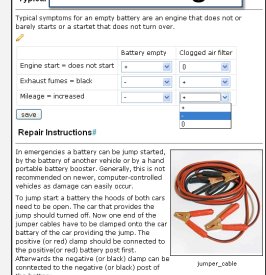
Flowchart Editing

Textual Editing

Table Editing

d3web Engine

- Open-source reasoning for diagnostic problem-solving, e.g. heuristic scoring rules, heuristic decision trees, set-covering fault models
- Implemented as KnowWE extension
- Compatible knowledge interchange with d3web.KnowME

Architecture