Developing the KMKE knowledge management system based on design patterns and parallel processing

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Abstract

KMKE provides a knowledge engineering approach to integrating knowledge management activities (such as knowledge modeling, knowledge verification, knowledge storage and knowledge querying) into a systematic framework. In this paper, we develop the KMKE knowledge management system based on design patterns and parallel processing. First, several design patterns are applied to develop the KMKE system for enhancing its flexibility and extensibility. Making the KMKE system flexible and extensible is useful to deal with continuous changes originated in knowledge. Second, JAVA programs and CLIPS programs are bound to offer the capability of knowledge inference for the KMKE system. Knowledge verification and knowledge querying can then be performed through the execution of CLIPS rules. Finally, we propose the Parallel CLIPS to shorten the execution time of the KMKE system. Since a large amount of knowledge may increase the execution time substantially, parallelizing the execution of CLIPS rules in cluster system could effectively reduce the search space of the CLIPS inference engine.

Key words: Knowledge Engineering; Knowledge Management;
Expert Systems ; Design Patterns; Parallel Processing