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Enhancing Decision-Making Consistency in Business Process using a Rule-Based Approach

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Case of Business Intelligence Process

Abstract

Decision-making in Business Process is a real challenge, given its technical complexity and organizational impact. Mostly, decision-making is based on business rules fired by an inference engine using facts reflecting the context of the current process task. Focus on a task alone and in isolation from the rest of the process can easily lead to inconsistency in decision-making. In this paper, we aim to improve the importance of consistency of decision-making throughout the process. To fulfill this aim, our contribution is to propose Consistency Working Memory RETE (CWM-RETE): a Framework based on the Rete Algorithm as a pattern-matching algorithm to simulate inference; and MongoDB as a document-oriented database to serialize business rules. This framework enables the compatibility of decision-making throughout the business process. The experimentation is based on the Business Intelligence process as a case study and it is shown that the decision-making process can generate different results depending on whether consistency functionality is enabled or not.

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