

# Ontology-based Program Comprehension Tool Supporting Website Architectural Evolution

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Abstract	<p>A challenge of existing program comprehension approaches is to provide consistent and flexible representations for software systems. Maintainers have to match their mental models with the different representations these tools provide. In this paper, we present a novel approach that addresses this issue by providing a consistent ontological representation for both source code and documentation. The ontological representation unifies information from various sources, and therefore reduces the maintainers' comprehension efforts. In addition, representing software artifacts in a formal ontology enables maintainers to formulate hypotheses about various properties of software systems. These hypotheses can be validated through an iterative exploration of information derived by our ontology inference engine. The implementation of our approach is presented in detail, and a case study is provided to demonstrate the applicability of our approach during the architectural evolution of a website content management system.</p>
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