

Empowering Software Maintainers with Semantic Web Technologies

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Abstract	Software maintainers routinely have to deal with a multitude of artifacts, like source code or documents, which often end up disconnected, due to their different representations and the size and complexity of legacy systems. One of the main challenges in software maintenance is to establish and maintain the semantic connections among all the different artifacts. In this paper, we show how Semantic Web technologies can deliver a unified representation to explore, query and reason about a multitude of software artifacts. A novel feature is the automatic integration of two important types of software maintenance artifacts, source code and documents, by populating their corresponding sub-ontologies through code analysis and text mining. We demonstrate how the resulting "Software Semantic Web" can support typical maintenance tasks through ontology queries and DL reasoning, such as security analysis, architectural evolution, and traceability recovery between code and documents.
Notes	This paper received the best paper award. ESWC 2007 had 270 submitted papers and an acceptance rate of 17%.
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