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WORKING PAPER

A Systematic Literature Review on the Quality of UML Models

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ABSTRACT

The quality of conceptual models directly affects the quality of the understanding of the application domain and the quality of the final software products that are ultimately based upon them. The field of research into conceptual modelling research is still young and is still evolving. This paper describes a systematic literature review (SLR) of peer-reviewed conference and journal articles published between 1997 and 2007 on this topic so that we may understand the state-of-the-art and then identify any gaps in current research. Six digital libraries were searched, and 193 papers dealing with the quality of UML models were identified and classified into five dimensions: type of model quality, type of evidence, type of research result, type of diagram and research goal. The results indicate that the field is indeed still young and evolving with a great deal of research dedicated to semantic consistency and to improving the understandability of UML diagrams. However, much more empirical research is needed to develop a theoretical understanding of conceptual model quality. The classification scheme developed in this paper can serve as a guide for both researchers and practitioners.

Keywords: UML, conceptual model quality, systematic literature review