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Requirement patterns : An approach for streamlining requirements engineering in software product families (Article)

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Abstract

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Reusable structure is essential in all reuse-based software development processes. This provides a solid foundation for seamless management of reusable artefacts especially in software product line engineering (SPLE). One of the potential benefits provided by a well-defined structure is systematic reuse of these artefacts. Requirements pattern approach provides guidelines for requirement engineers to reuse and specify requirements. Although a plethora of research on requirements pattern have been reported in the literature, no research available focuses on requirement engineering (RE) activities of SPLE. In this paper, we present an anatomy of software requirement pattern (SRP) for SPLE with a structured example from e-learning domain. To enable practitioners, understand the concept of requirement pattern more, we present a meta-model for the SRP concepts and their relationships. In addition, we describe how the requirement pattern approach, streamlines RE activities, design for and with reuse in both domain and application engineering processes of SPLE. The requirement pattern approach thus helps in achieving systematic requirements reuse (RR) and generation of structured software requirement specification (SRS) for individual applications. © 2019, World Academy of Research in Science and Engineering. All rights reserved.

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