Analyzing MoWebA's adaptability across architectures

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Abstract

Specifying architectural properties is still an open issue for Model Driven Web Engineering to address portability, adaptability, and evolution. Several Model-Driven Web methods and methodologies consider extensions that enrich the Platform Independent Model (PIM) or the Platform Specific Model (PSM) to include elements of a particular platform or architecture. However, the degree of independence of the model is critical to achieving adaptability and evolution. Therefore, some authors have proposed a new layer called an Architecture Specific Model (ASM) to model architectural properties. Some evidence suggests that adopting ASM as an intermediate stage between PIM and PSM is a way to facilitate the evolution of web system. This paper focuses on the Architecture Specific Model (ASM) of MoWebA (Model Oriented Web Approach), and analyzes its impact on adaptability across different architectural styles. A case study is presented to validate this issue by extending MoWebA to three different architectures. In such extensions, we analyze the degree of adaptability of MoWebA and the automation of PIM-ASM, as well as the degree of independence of the PIM metamodel. In addition, through three types of questionnaire and other quantitative data, the study analyzes user satisfaction with the adoption of MoWebA.