

Knowledge Transformation from Task Scenarios to View-based Design Diagrams

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Abstract

A large body of research in software requirement engineering domain has been dedicated to enhancing the structure of task scenarios using scenario schemas and pre-defined structures. However, less attention has been paid to the application of schemas in extracting design knowledge from scenarios. In this paper, we propose a schema-based technique to extract the design knowledge embodied in the text of scenarios and represent them using multi-view design diagrams. In this context, we define a framework and a scenario syntax that allow for generating a set of structured scenarios that cover the requirements of a software system. We define a novel scenario schema to parse the informal text of scenarios and populate an objectbase to maintain the design knowledge building blocks. Consequently, a set of guidelines are defined to incrementally build design diagrams for software views such as data and function. As a case study, the design diagram generation for a restaurant system is presented.

KEYWORDS: Knowledge; Transformation; Scenario; Schema; Design; Multiple Views; Object base.