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MODEL DRIVEN SECURITY PATTERNS BASED ON DEPENDENCE VERIFY AND VALIDATE

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Abstract

The spread of open-software services through the Internet increases the importance of security. A security pattern is one of the techniques in which developers utilize security experts' knowledge. Security patterns contain typical solutions about security problems. However there is a possibility that developers may apply security patterns in inappropriate ways due to a lack of consideration on dependencies among patterns. Application techniques of security patterns that consider such dependencies have not been proposed yet. In this project, we propose an automated Application technique of security patterns in model driven software development by defining applications procedures of security patterns to models as model transformation rules with consideration for pattern dependencies. Our technique prevents inappropriate applications such as the application of security patterns to wrong model elements and that in wrong orders. Therefore our technique supports developers apply security patterns to their own models automatically in appropriate ways. Security concerns are present in many software solutions and products. While the functional requirements most often drive the development of models in Model Driven Development (MDD), the modeling of non-functional concerns equals important for a high quality solution. Aspect Oriented Modeling (AOM) is an MDD approach that helps develop higher quality solutions by considering various requirements independently and composing the separate sub solution models into a complete solution. It is possible to express the solutions for different security concerns as Aspects, at both generic and technology specific levels, for use in an AOM-based solution. This project explores some of the possible patterns for the common security concerns of authentication, authorization and data privacy. Generic aspect