A Model Driven Approach and a Tool for Specification and Generation of Software Systems

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resumen:

Despite the constant growth of information technologies, as well as their enriching Information Systems (ISs) with novel capabilities, "ideal" methods and techniques to develop ISs are still far from obvious. There are various approaches that may be applied to improve the process of IS development. Our focus is on the usage of model driven approaches. Through our research, we have created an approach and a model driven tool that provides IS modelling and prototype generation. Its name is Integrated Information Systems CASE Tool, or IIS*Case, for short. Our approach, which is an alternative to more conventional methodologies based on the ER (Entity-Relationship) or UML modelling techniques, is mainly based on the usage of Model Driven Software Development (MDSD) and Domain Specific Language (DSL) paradigms. The main idea is to provide the necessary Platform Independent Model (PIM) meta-level concepts to IS designers, so that they can easily model semantics in an application domain and then apply a number of complex algorithms to produce database schema specifications and IS executable code, without any considerable expert knowledge. By this, at the level of PIM specifications, IIS*Case provides conceptual modelling of database schemas and business applications. Starting from such PIM models as a source, a chain of model-to-model and model-to-code transformations is performed in IIS*Case to obtain executable program code of software applications and database scripts for a selected target platform. In this talk we will give an overview of our approach, as well as the related MDSD and DSL concepts and techniques in which it is based on.

sobre Ivan Luković:

Ivan Luković works as a full professor at the Faculty of Technical Sciences of University of Novi Sad, Serbia, where he lectures in several Computer Science and Informatics courses. From 2001 – 2010 he was also a visiting professor at the Faculty of Science of University of Montenegro in Podgorica. From 2006 – 2009 he was Editor-in-Chief of Computer Science and Information Systems (ComSIS) Journal, while he currently holds a position of Vice Editor-in-Chief. His research interests are related to Database Systems and Software Engineering. Main research focus is in Theory of Data Models, System Design, particularly Logical and Physical Database Design, and Development and Usage of Model Driven Software Development (MDSD) or CASE tools in Software Engineering and System Design. He is the (co-)author of over 80 papers, 4 books, and 30 industry projects and software solutions in the area.