
Evolution of a Software System Architecture - Explained in a Model Situation

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Short description:

The most important decision in the early stage of software development is the design of system architecture. In this talk, we set up a model situation and present such a decision. Then, evolution of the software is simulated. Since in parallel to the evolution of the system and its environment there is also a kind of evolution in the understanding of the underlying domain and problems by the software team, it is obvious that the initial architectural design becomes also a subject of evolution. Kinds and ways of this evolution are the main focus point of this talk. In our model situation, we evolve the system architecture of a web application from a client-server architecture with full single-technology stack to a microfrontends' architecture with distributed heterogenous technology stack. We simulate the evolutionary growth from custom application to software product line. We consider several architectural patterns and (one-way) transformations between them. We discuss the underlying topics to emphasize the importance of a proper architectural envisioning for software projects.

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More about Csaba Szabó:

Csaba Szabó is an associate professor at Department of Computers and Informatics, Faculty of Electrical Engineering and Informatics, Technical University of Košice. He had been coordinating bilateral cooperation projects (2016-17 with University of Minho, Portugal; 2013-14 with Alpen-Adria Universität, Klagenfurt, Austria). He coordinated the successful ERASMUS+ project No. 2017-1-SK01-KA203-035402. He was contact person for the ERASMUS+ 2015-1-SK01-KA107-008876 project (responsible for incoming 5 teacher, 5 Ph.D. and 5 MSc. mobilities from the partner at the Ain Shams University, Cairo, Egypt). He is also coordinating student and teacher mobilities within the ERASMUS+ KA1 programme to 8 universities and within the CEEPUS network to 12 universities. He headed one national project in 2013-14 and he was the vice-head of another national project for 2014-16, both projects were focused on improving Informatics subjects' curricula based on the state-of-the-art of related research and technology. His research focuses on various topics in software engineering including behavioral description of software and testware, requirements engineering, software evolution and autonomic computing. He is the author of over 120 publications and since 2015 he is Editorial Review Board member of the Egyptian Computer Science Journal (ISSN: 1110-2586). Mr. Szabó is actually active in researching energy profiling methods for both software and software processes as well as in software architecture evolution and software project management simulation.