

Towards the Reverse Engineering of UML Sequence Diagrams Using Petri Nets

Authors : C. Baidada, M. H. Abidi, A. Jakimi, E. H. El Kinani

Abstract : Reverse engineering has become a viable method to measure an existing system and reconstruct the necessary model from its original. The reverse engineering of behavioral models consists in extracting high-level models that help understand the behavior of existing software systems. In this paper, we propose an approach for the reverse engineering of sequence diagrams from the analysis of execution traces produced dynamically by an object-oriented application using petri nets. Our methods show that this approach can produce state diagrams in reasonable time and suggest that these diagrams are helpful in understanding the behavior of the underlying application. Finally we will discuss approaches and tools that are needed in the process of reverse engineering UML behavior. This work is a substantial step towards providing high-quality methodology for effective and efficient reverse engineering of sequence diagram.

Keywords : reverse engineering, UML behavior, sequence diagram, execution traces, petri nets

Conference Title : ICCISE 2016 : International Conference on Computer, Communication and Information Sciences, and Engineering

Conference Location : Jeddah, Saudi Arabia

Conference Dates : January 26-27, 2016