TUTORIAL : VERIFICATION OF COMPLEX UML CLASS DIAGRAM WITH OCL CONSTRAINTS USING UMLtoCSP

Date and Venue: 13th Feb, 2015 (Computer Systems Engineering, MUET-JAMSHORO)

Summary
The technology of Model Driven Development (MDD) is growing day by day due to the benefits of automatic model transformation and code generation. In MDD, Unified Modeling Language/Object Constraint Language (UML/OCL) class diagrams play an important role for model design, analysis, and transformation. Therefore, the verification of UML/OCL class diagrams at earlier stages in the development process is an essential task in order to check the correctness of model properties, i.e., verification of a UML/OCL class diagram with several OCL integrity constraints. In this tutorial we will focus on static structure diagrams that describe the structure of a software system, UML class diagrams. Complex integrity constraints can be expressed in OCL. In this context, the fundamental correctness property of a model is satisfiability. Two different notions of satisfiability can be checked - either weak satisfiability or strong satisfiability.

The objective of this tutorial is to address and understand the slicing technique to reduce the complexity of UML class diagram with OCL constraints.

Following outline will be followed in this tutorial:
- Introduction to UML class diagram with OCL constraints.
- UMLtoCSP(UOST) tool for complex verification of model.
- Slicing Techniques implemented in UMLtoCSP(UOST).
- Similar verification tools available in the literature.
- Detailed demonstration for verification of UML class diagrams.

Aim of the Tutorial
After attending this tutorial audience will have an overview about the differences between verification and validation. What is UML class diagram, OCL, UMLtoCSP(UOST) tool for complex verification of class models with different verification methods and several other verification tools. At the end of tutorial audience will be able to verify UML class diagram with OCL constraints. UMLtoCSP(UOST) tool is open source and can be downloaded.

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Registration:
- Registration deadline: 3rd Feb, 2015
- Only first 50 registrations will be entertained

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<tr>
<th>3 days Conference + ½ day Tutorial Participation Fees</th>
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<tr>
<td>(This also includes all 3 Lunches, 4 high Teas, Conference Bag, International Certificate)</td>
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<tr>
<td>Rs. 1500/- Per Individual student</td>
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<td>Rs. 6000/- Per Individual Professional</td>
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Dr. Asadullah Shaikh, Assistant Professor, University of Huddersfield, England

Asadullah Shaikh is PhD in software engineering from University of Southern Denmark. Dr. Shaikh obtained his M.Sc in software engineering and management from Gotteborg University Sweden and B.Sc in software development form university of Huddersfield, England. Dr. Shaikh is currently working as an assistant professor and Coordinator of Seminars and Trainings in the college of Computer Science and Information Systems Najran University, Najran, Saudi Arabia. He has more than 25 publications in the area of software engineering in international journals and conferences. He has also more than 5 years of experience in teaching and research and has worked as a Researcher in UOC Barcelona Spain including University of Southern Denmark.