Model-Based Problem Solving for University Timetable Validation and Improvement

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Constraint satisfaction problems can be expressed very elegantly in state-based formal methods such as B. However, can such specifications be directly used for solving real-life problems? We will try to answer this question in this contribution with regard to the university timetabling problem. We report on an ongoing project to build a formal model-based curriculum timetable validation tool. In this tool we use a formal specification as the basis to validate timetables from a student's perspective and to support incremental modification of timetables. In our presentation we will focus on introducing the problem domain, describing the formalization in B and our approach to execute the formal model in a production system using ProB.[1]

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[1] An extended article based on this work has been accepted for publication at the 20th International Symposium on Formal Methods