

Normalizing relational database schemas using Mathematica

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Abstract

In this paper, basic relational database (DB) normalization algorithms are implemented efficiently as Mathematica modules. It was observed that, Mathematica provided a straightforward platform as opposed to previous ones, mainly Prolog based tools which required complex data structures such as linked list representations with pointers. A Java user interface called JMath-Norm was designed to execute the Mathematica modules in a systematic way. For this purpose, Mathematica's Java link facility (JLink) is utilized to drive the Mathematica kernel. JMath-Norm provides an effective interactive tool in an educational setting for teaching DB normalization theory.