Intézeti szeminárium

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Cím: Some semantic technologies for teaching informatics

Absztrakt:
The semantics is an integral part of a formal definition of a programming language. It is important for software engineers and IT specialists to understand the meaning of programs and/or behavior of them. Based on our experience with teaching formal semantics we have prepared a package of modules that help us and to students to understand the most used semantic methods - structural operational semantics and denotational semantics. The first module translates a program written in a programming language to abstract machine code, and the second module emulates stepwise execution of abstract machine code. The denotational semantics is very useful semantic method that requires quite deep knowledge of mathematical principles. A fruitful approach seems to be visualisation of program execution based on given semantic method. We have developed denotational approach based on category theory and we have implemented software tool that produces visualisation of program execution. An integral part of our software package is very powerful tool for working with arithmetic and boolean expressions. All of these tools have been tested in teaching process and they actively help to better understanding of formal semantics.

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