Karlsruher Institut für Technologie

Demo: AlgoVer

Institut für Theoretische Informatik

Interaction in Interactive Program Verification

Interaction on:

- different levels of abstraction for interaction
- different representations of the same problem

Switch between levels and/or representations is necessary.

Involved Entities in Interactive Program Verification

- program code
- specification
- proof representation/proof obligation
- proof guidance/interaction

Examples for State-of-the-Art Systems

Three different kinds of Interaction Concepts:

- auto-active
- point-and-click
- text-based

Problems with Interaction in State-of-the-Art Systems

- interaction on different representations
- hidden dependencies between representations
- context change cognitively challenging for the user
- missing interaction possibilities on representations

Goal of our concept

An interactive program verification system that allows implementing and researching different interaction concepts:

- integration of different representations as views
- integration of different interaction concepts
- seamless transition between views

Hypothesis

User interaction needs, depending on the context,

(a) a focussed view on specific elements or

(b) an overview of the bigger picture.

Objectives

The user is ...

1. ... able to use appropriate view at all times
2. ... can easily switch views without loosing focus
3. ... is able to determine the results of costly actions before executing them