Proof Visualization Demo

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Introduction

- Understanding a proof is necessary in many situations
  - Interactions with the prover
  - Finding errors in programs
- The proof tree is usually too complex to get an overview
- Proof visualization offers an intuitive visualization

Visualization of a Node in KeY

- Execution traces are extracted from a proof branch
  - Represents Control flow
- Visualization by different views
  - Adapted from classic software debuggers
- The logical part is not visualized

Visualization of a Node in KeY

Visualization of an execution trace is offered in

- Eclipse by the Proof Visualization Plug-In
  - Part of the KeY Eclipse Feature
- the stand-alone KeY-prover
  - Select **Visualize** in the context menu of a node

Proof Visualization Plug-In for Eclipse

- Visualizes execution traces
  - Highlighting statements in the source code
  - Tree view
- Navigation like in classical debuggers with
  - **Step Into**
  - **Step Over**
- Uncaught exceptions are shown

Installing the Proof Visualization Eclipse Plug-In

Installing the KeY Feature (Nightly Build)

- Select:
  Help > Software Updates > Find and Install > Search For New Features
- New remote site:
  `http://i12www.ira.uka.de/~schlager/KeYDists/KeY_Feature/`
- Restart Eclipse
- Open the Proof Visualization View:
  Window > Show View

Visualization Plug-In for Eclipse

DEMO