

Program Monitoring

Lecture 8 : Rule-Based Systems

This eighth lecture introduces the last monitoring specification notation to be presented in this course. We here entertain the idea of a “*super logic*” for monitoring, which embodies the other logics we have been through, including state machines, regular expressions, past time and future time temporal logic, and context free grammars. The lesson introduces two attempts to define such a logic: Eagle and RuleR. While the main emphasis of this lesson is on RuleR, Eagle will be briefly described since it was the first such logic created by the developers of the later RuleR. RuleR is still very much a prototype under development, but quite stable.

Installation

RuleR comes as a jar file (of class files) and a jar file of examples, plus documentation, all wrapped in a zip file. Please send an email to me (Klaus Havelund):

`havelund@gmail.com`

and RuleR will be sent to you by email.

Reading

The reading consists of a research paper and a tutorial. The tutorial should be sufficient for using RuleR, since it is fairly well written. However, the paper may contribute to the understanding.

1. *Rule systems for run-time monitoring: from Eagle to RuleR*, Howard Barringer, David Rydeheard, and Klaus Havelund. Journal paper.
2. *RuleR: A Tutorial Guide, Version 0.1*, Howard Barringer, David Rydeheard, and Klaus Havelund. Explains RuleR step by step.