

# Runtime Verification

## Lecture 4 : Monitoring with Regular Expressions

<http://www.runtime-verification.org/course>

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This fourth lecture is an introduction to monitoring with regular expressions. We start with the propositional case, without data values. That is, for example, we can express properties about files being opened and closed, but we cannot yet speak about what files. The subsequent lecture will introduce such parameterized regular expressions and how they are supported by the JavaMOP system.

Although this lecture does not yet open up for JavaMOP, you may start playing with it, specifically the ERE (Extended Regular Expressions) part (see last couple of slides of today's lecture).

### Installation

1. You may start getting familiar with JavaMOP. You can access all from the web. There is no need to download anything.

### Reading

1. This week we will read the paper: *MOP: An Efficient and Generic Runtime Verification Framework*, Feng Chen and Grigore Rosu.

### Optional Reading

1. *Adding Trace Matching with Free Variables to AspectJ*, Chris Allan, Pavel Augustinov, Aske Simon Christensen, Laurie Hendren, Sascha Kuzins, Ondrej Lhotak, Oege de Moore, Damien Sereni, Ganesh Sittampalam and Julian Tibble.

### Assignments

This week (lecture 4-5) we will introduce JavaMOP and specifically how to write monitor specifications using extended regular expressions. The three problems presented in lectures 2 and 3 should be specified using extended regular expressions in JavaMOP. Lecture 5 (next lecture) should give you the full background for doing that.