

## Session 3 Discussion

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### Dynamic Software Evolution – Approaches and Issues

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Software evolution is an activity to adapt to requirements changes.

Motivating example with the evolution of a online shopping system, by adding a security form.

Problematic: how to implement dynamic evolution in the software?

—> Using reflection with Javassist. A new class is created at runtime.

Reflection is the only way to change the program in details.

Such an evolution must be done without interrupting the system.

By using model checking, evolution behaviors are verified

—> Maude supports reflection and model checking

Limitations in terms of time to solve, e.g. 24h for 3 users in the motivating example.

Description of the different sequence diagrams, before and after evolution.

Technical slides on Maude, how to use meta-level representations to model reflection