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A Platform for Experimenting with Language Constructs for Modularizing Crosscutting Concerns

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Context

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- Often “hacked in”, by modifying compiler/ interpreter code
- Semantics only found in:
  - Implementation
  - High-level documentation

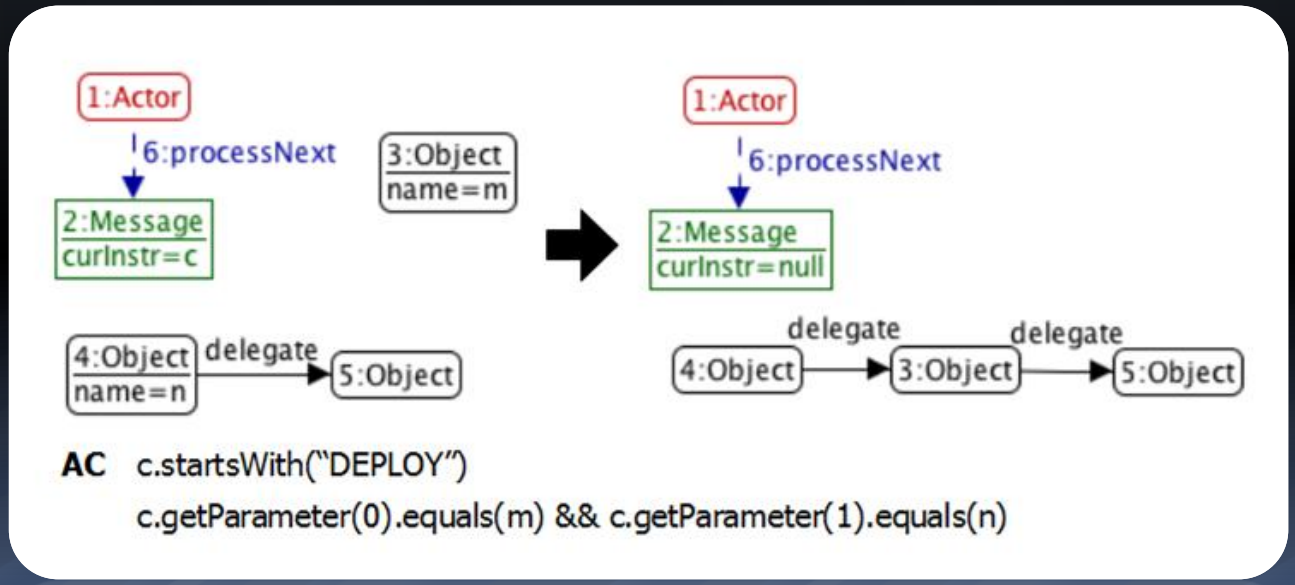
Introducing delMDSOC

- delMDSOC (delegation-based MDSOC):
  an executable model of a virtual machine, meant for MDSOC languages

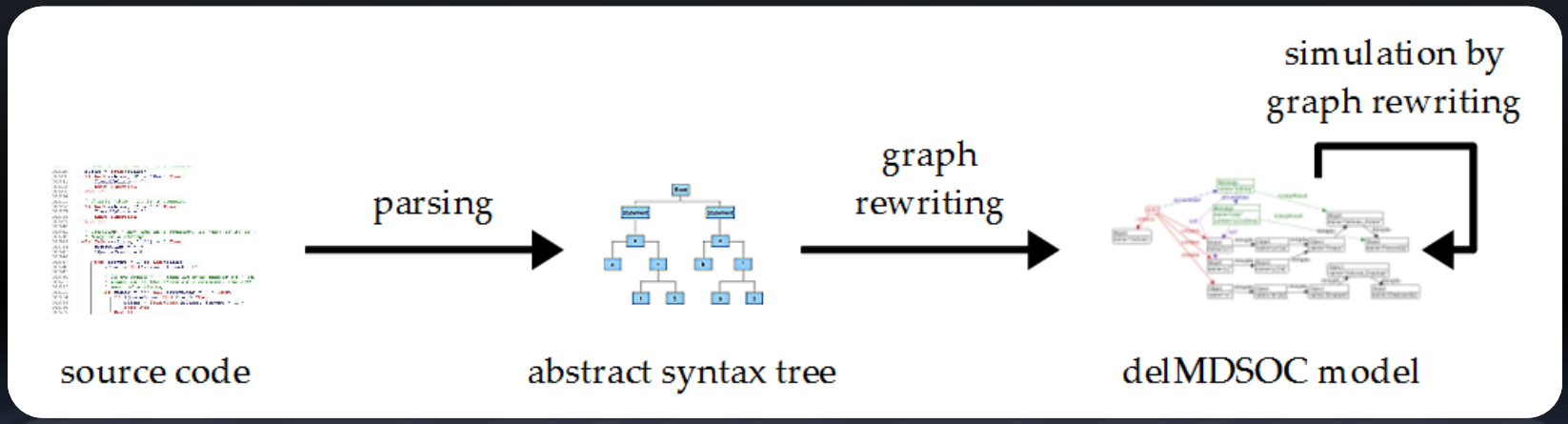
- MDSOC (multi-dimensional separation of concerns):
  languages aiming to improve SOC,
  e.g. aspect-oriented, context-oriented, role-oriented, … languages

Graph rewriting

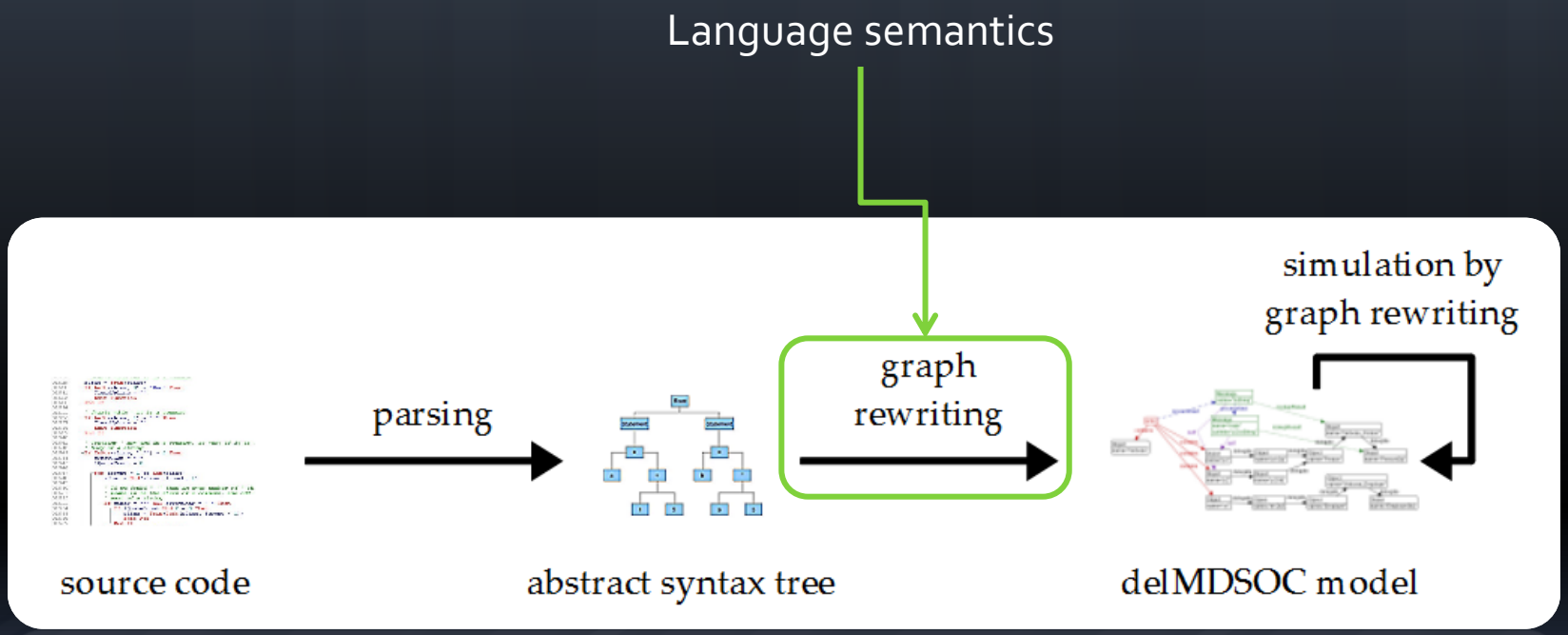
- Model is specified with graph rewriting; created with the AGG tool



Program Simulation



Program Simulation

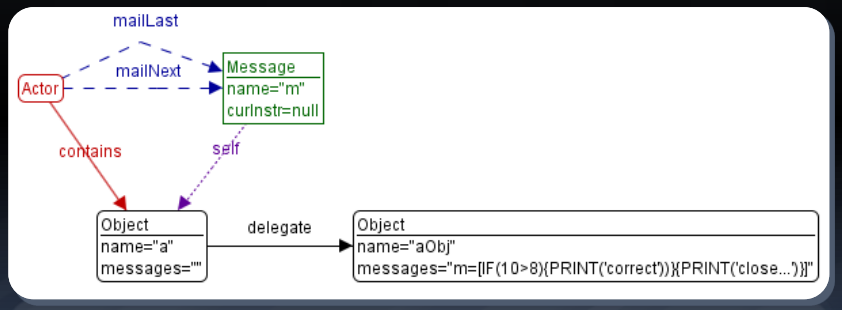


Tooling issues

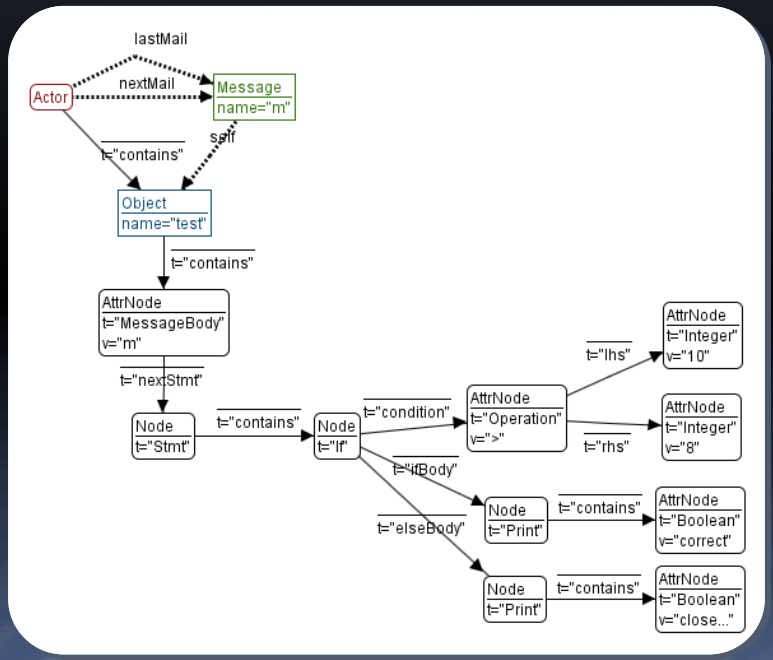
- Maturity of graph rewriting tool support:
  - AGG changes at ± the same pace as delMDSOC
  - Changing delMDSOC may imply adapting all examples built on top
  - Interchanging graphs and transformations between tools

Tooling issues

- Trade-off between specifying information as attributes, versus nodes and edges



VS



Tooling issues

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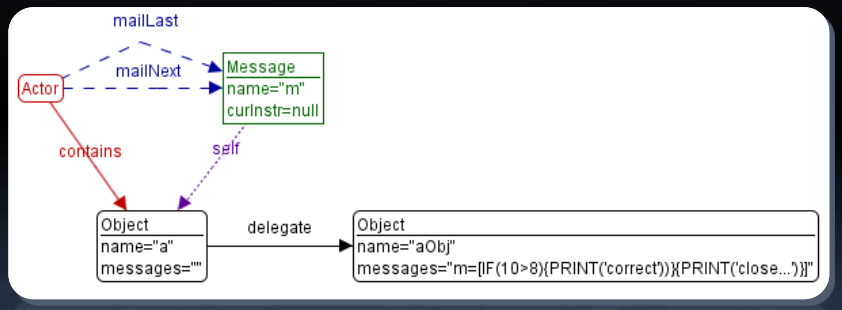

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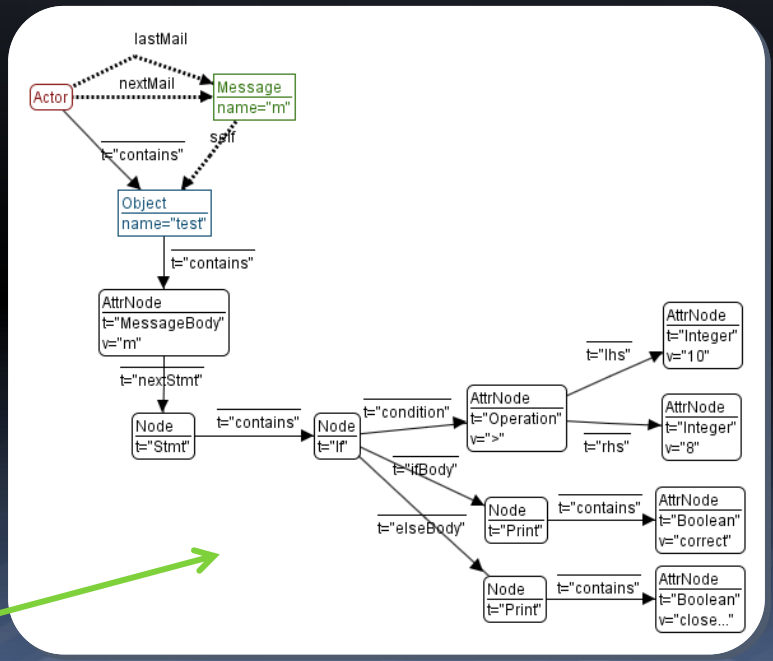

Navigation techniques for large graphs needed

Q&A

For more information: http://fots.ua.ac.be/delmdsoc