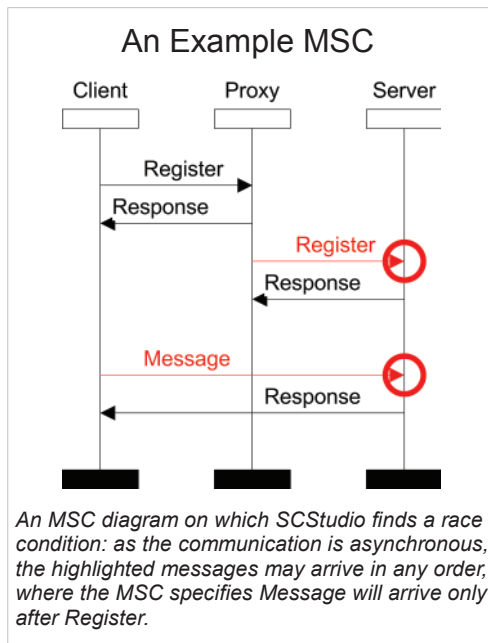


Refactoring of Sequence Chart Studio

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The Sequence Chart Studio (SCStudio) is a user-friendly drawing and verification tool for Message Sequence Charts (MSC). SCStudio supports several checkers that are able to verify properties such as realizability, time consistency, equivalence checking between two MSC diagrams, etc. Some of them are well known, while others are new or non-trivial extensions of existing ones. The graphical front-end is implemented as a Microsoft Visio add-on, whereas checkers are platform independent. SCStudio is an open source project that provides an open interface for additional modules.



Objective

- The primary goal was to extend SCStudio with new types of MSC objects: actions and conditions.
- The tool was initially designed to work with messages as the only type of events on communicating instances, though, and did not allow to reasonably extend it to support other types of events.
- **The purpose of the work was to refactor the application core to enable further extensions.**
- As a consequence, all the algorithms and other dependent code was to be adjusted without affecting their functionality.

Result

- Although the tool pays attention to comply with the Message Sequence Chart recommendation, in case of conditions, the formalism was found to be rather imperfect. An extended syntax and alternative semantics were proposed for conditions.
- Application core code was reviewed, object model fixed.
- Refactoring was proven useful by actually extending SCStudio with the requested MSC objects. As a side-effect, memory problems were greatly reduced.

