

Software design patterns in R

Friedrich Schuster^{1,*}

1. HMS Analytical Software GmbH, Heidelberg, Germany

*Contact author: friedrich.schuster@analytical-software.de

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The long-term development of R-programs and packages not only leads to a growing code base, but also to increased code complexity and stronger interdependencies between packages and functions. As a result the required training times as well as the development and maintenance costs tend to rise substantially, especially for large applications. In a corporate environment, software quality and maintenance are a major cost factor. One answer to this challenge of software engineering are "Software Design Patterns". Design patterns are reusable general solutions to commonly occurring problems in software design. Design patterns assist the software development process in different ways: (1) by providing tested and proven development paradigms, patterns speed up development and reduce errors. (2) Patterns facilitate the familiarization with unknown code. (3) Patterns improve communication between developers. This presentation will focus on well-known development patterns and their applicability to R and on the identification of specific patterns for R.

References

Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides (1994). Design Patterns. Elements of Reusable Object-Oriented Software. Addison-Wesley.