

Providing R Reporting Capabilities to a Web Application from a Version Controlled R Code Database

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Mango were approached to produce a web-based modeling & reporting system for a pharmaceutical customer. The primary goal of the system would be to generate graphical, tabular and textual report items in order to evaluate and compare various pharmacokinetic models. The outputs from the system had to include reports in various formats containing these report items.

A key requirements within the application included the ability to store version-controlled R reporting code which could be readily converted to report items when associated with data sources. Another requirement was the ability to link the output reports to a full audit trail, to ensure any item in any output document can be recreated if requested.

Mango created a reporting mechanism that could be made available to the (Java) web application, while allowing users to interact with reporting code managed in an Oracle database. Communication within the system between the code storage and the application was achieved using an XML-based messaging system , with the result audit trail logging in the database and (optionally) stored within the output documents.

This paper discusses the design and use of R in this distributed manner, and will focus on innovative solutions to the technical challenges this project presented. This paper will conclude by demonstrating firstly the reporting capabilities of the resulting system, then showing the same process as a "behind the scenes" walkthrough.