

Getting Started

- Introducing Reproducible Research
- What Is Reproducible Research?
- Why Should Research Be Reproducible?
- Who Should Read This Book?
- The Tools of Reproducible Research
- Why Use R, knitr/rmarkdown, and RStudio for Reproducible Research?

Book Overview

- Getting Started with Reproducible Research
- The Big Picture: A Workflow for Reproducible Research
- Practical Tips for Reproducible Research
- Getting Started with R, RStudio, and knitr/rmarkdown
- Using R: the Basics
- Using RStudio
- Using knitr and rmarkdown: the Basics
- Getting Started with File Management
- File Paths and Naming Conventions
- Organizing Your Research Project
- Setting Directories as RStudio Projects
- R File Manipulation Commands
- Unix-Like Shell Commands for File Management
- File Navigation in RStudio
- Data Gathering and Storage
- Storing, Collaborating, Accessing Files, and Versioning
- Saving Data in Reproducible Formats
- Storing Your Files in the Cloud: Dropbox
- Storing Your Files in the Cloud: GitHub
- RStudio and GitHub
- Gathering Data with R
- Organize Your Data Gathering: Makefiles
- Importing Locally Stored Data Sets
- Importing Data Sets from the Internet
- Advanced Automatic Data Gathering: Web Scraping
- Preparing Data for Analysis
- Cleaning Data for Merging
- Merging Data Sets
- Analysis and Results
- Statistical Modelling and knitr
- Incorporating Analyses into the Markup
- Dynamically Including Modular Analysis Files
- Reproducibly Random: set.seed

Computationally Intensive Analyses
Showing Results with Tables
Basic knitr Syntax for Tables
Table Basics
Creating Tables from Supported Class R Objects
Showing Results with Figures
Including Non-Knitted Graphics
Basic knitr/rmarkdown Figure Options
Knitting R's Default Graphics
Including ggplot2 Graphics
JavaScript Graphs with googleVis
Presentation Documents
Presenting with knitr/LaTeX
The Basics
Bibliographies with BibTeX
Presentations with LaTeX Beamer
Large knitr/LaTeX Documents: Theses, Books, and Batch Reports
Planning Large Documents
Large Documents with Traditional LaTeX
Knitr and Large Documents
Child Documents in a Different Markup Language
Creating Batch Reports
Presenting on the Web and Other Formats with R Markdown
The Basics
Further Customizability with rmarkdown
Slideshows with Markdown, rmarkdown, and HTML
Publishing HTML Documents Created by R Markdown
Conclusion
Citing Reproducible Research
Licensing Your Reproducible Research
Sharing Your Code in Packages
Project Development: Public or Private?
Is it Possible to Completely Future Proof Your Research?
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