RKWard - Manual

9/10/23

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Welcome

This is a book manual of **RKWard**. **RKWard** is an easy to use and easily extensible **IDE/GUI for R**.

The current and official documentation can be found here:

Overview

Screenshots

User Documentation

Versions

The RKWard version used in this book is 0.7.5 - 24 Oct 2022.

The **R Version** is **4.2.0** (Windows 10 x64 (build 19045) - x86_64-w64-mingw32/x64 (64-bit))

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1 About RKWard

1.1 **RKWard Mission statement**

RKWard is meant to become an easy to use, transparent frontend to the R-language, a very powerful, yet hard-to-get-into scripting-language with a strong focus on statistic functions. It will not only provide a convenient user-interface, however, but also take care of seamless integration with an office-suite. Practical statistics is not just about calculating, after all, but also about documenting and ultimately publishing the results.

RKWard then is (will be) something like a free replacement for commercial statistical packages. In addition to ease of use, three aspects are particularily important:

- It will be a transparent interface to the underlying R-language. That is, it will not hide the powerful syntax, but merely provide a convenient way, in which both newbies and R-experts can accomplish most of their tasks. A GUI can never provide an interface to the whole power of a language like R. In some cases users will want to tweak some functions to their particular needs and esp. to automate some tasks. By making the "inner workings" visible to the user, **RKWard** will make it easy for the user to see where and how to use R-syntax to accomplish their goals.
- For the output, **RKWard** strives to separate content and design to a high degree. It will not try to design its own tables/graphs, etc, which have to be converted to the style used in the rest of a publication by hand. Currently **RKWard** uses HTML for its output. Using appropriate style definitions reformatting this output to match the rest of the publication will be easily doable. In future releases **RKWard** will even seek stronger integration with existing office suites.
- It relies on a language, that is not only very powerful, but also extensible, and for which dozens of extensions already exist.

And of course, it is free (as in free speech).

Current status

Perhaps the best way to get an impression of the current state of **RKWard** (other than installing and trying it) is to have a look at the Screenshots. A status page focused on the internal components is here.

In summary:

RKWard currently offers a lot of useful features for developing R code. This functionality makes **RKWard** highly useful as an IDE for R experts, today. The number of graphical dialogs to give access to statistical functions is still rather limited. Users coming from competing graphical statistics suites will find a lot is still missing, but possibly the functionality you need most is already implemented in the growing number of plugins. Why don't you give it a try to find out? It is also possible to add your own dialogs as plugins (see Developer Information#Plugin developers). As far as office integration is concerned, **RKWard** still has a long way to go. However, results are stored to in HTML format, however, making it easy to copy-and-paste or import them into text-processing or other office tools.

1.2 About RKWard

About RKW	ard			?	\times
RKWard Version 0.7.5					
About	Components	Authors	Thanks To		
Frontend to th	e R statistics langu	Jage			
 Friedri 	eviewed article in chsmeier, T. & the statistics language	RKWard Team	(2022). RKWard	: Fronte	
(c) 2002 - 2022	2				
https://rkward	.kde.org				
License: Licenc	a Pública Geral GN	IU versão 2			
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RKWard is developed by a community of volunteers.

Figure 1.1: About **RKWard**

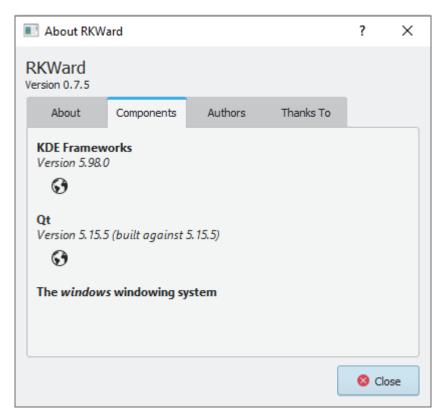


Figure 1.2: **RKWard** Components

 About RKWard ? × RKWard Version 0.7.5 About Components Authors Thanks To Please use https://bugs.kde.org to report bugs. Thomas Friedrichsmeier Project leader / main developer Pierre Ecochard C++ developer between 2004 and 2007 Prasenjit Kapat Many plugins, suggestions, plot history feature Meik Michalke Many plugins, suggestions, rkwarddev package Stefan Roediger Many plugins, suggestions, marketing, translations 		
About Components Authors Thanks To		
Please use https://bugs.kde.org to report bugs.		
Version 0.7.5 About Components Authors Thanks Please use https://bugs.kde.org to report bugs. Thomas Friedrichsmeier Project leader / main developer Pierre Ecochard C++ developer between 2004 and 2007 Prasenjit Kapat Many plugins, suggestions, plot history feature Meik Michalke Many plugins, suggestions, rkwarddev package Stefan Roediger		
	8 Cl	ose

Figure 1.3: ${\bf RKWard}$ Authors

1.3 RKWard 0.7.5 - 24 Oct 2022

A new release, **RKWard** 0.7.5, is available for download, today.

The most visible changes are the inclusion of many new and improved code snippets, and option to restart the R backend without leaving RKWard (this can be very useful when trying to make sure that a script is fully reproducible), and various improvements to code completion in scripts and the R Console.

As usual, we're looking forward to your feedback suggestions, and contributions!

The changes in detail:

New features and improvements

- Added: Partial completions (Tab-key) consider completion candidates from all visible completion groups
- Added: R's dynamic completions (importantly for ":::", "?", and "@") are merged into the already provided completions
- Added: Add option to offer code completion/hinting in all file types not just R scripts (e.g. in .Rmd files)
- Changed default behavior (new installations, only): Up/down without alt navigate completion items if visible in console/editor
- Added: Provide tooltips on symbols in scripts and R console
- Added: Many new basic and advanced R, R Markdown and LaTeX snippets, including complete R Markdown templates
- Added: Allow to select search provider, when searching for a term online
- Added: Allow to restart R backend (e.g. for testing that scripts or packages will work in a fresh session)
- Changed: Actions to restart the R backend, interrupt all commands and configure the R backend arranged in a hmburger menu
- Added: Crosstabs N to N: Simplify labels, add option to control table layout
- Added: Change mechanism for detection of object changes

Bug fixes

- Fixed: Backend failed to start when installed in a path with spaces on Windows volumes without 8.3 support
- Fixed: Trying to restart backend could cause a hang, on Windows
- Fixed: In corner cases, cancelling commands could lead to a lockup
- Fixed: IRT Cronbach's Alpha did not work for subsets, if the data.frame name contains dots
- Fixed: Action to remove several rows in data editor, simultaneously, always remained disabled

- Fixed: Workspace browser would not always show change, immediately, when object type changes
- Fixed: Crash when using the "Git blame" kate plugin
- Fixed: Problem installing R support package in some configurations
- Fixed: Menubar would disapper after opening script editor, in some configurations
- Fixed: Very long error messages during R markdown preview could cause the preview window to become too wide
- Fixed: Expresssions spanning several lines would not be shown, correctly, in "R Console"mode script preview
- Fixed: Fix focus problems, and better efficiency for data previews (as used in data import dialogs)
- Fixed: Excel import plugin failed to accept file name
- Fixed: Fix zooming help/output pages with Ctrl+scroll wheel, when compiled with QWebEngine
- Fixed: Fix problem handling rkward:// links from dialogs on some sytems
- Fixed: Fix object name completion for (irregular) names starting with numbers or underscores

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2 Main Window

2.1 Main Window

The main application window with a dashboard of recent files and common tasks. At the left and there are several buttons to expand / collapse tool windows (RKWard 0.7.5).

	Welcome to RKWard	
My recent script files • C.J.sers/luiso/RKWard_manual/menu_stitions.amd • C.J.Sers/luiso/RKWard_manual/menu_life.gmd • C.J.Sers/luiso/RKWard_manual/menu_windows.amd • C.J.Sers/luiso/RKWard_manual/manu/midow.amd • C.J.Sers/luiso/RKWard_manual/manu/midow.amd • C.J.Sers/luiso/RKWard_manual/MARE.md • C.J.Sers/luiso/RKWard_manual/Make.amd • C.J.Sers/luiso/RKWard_manual/Make.amd	My recent workspaces • C/Users/hisorRKWard_manual/tkward_book.RData Choose another file	
My recent output files Choose another file	Import or enter data • Enter new data • Import data	
Useful settings Install R and RKWard packages Further add-on related settings (e.g., ot/project integration) Startup options (including this page)	Documentation starting points • RKWard for RV Users • RKWard for RV Users • RKWard Add-Ons • Trouble Shootiny / FAQ • External links, project homepage	

Figure 2.1: Main Window

The application window with the Workspace Browser, Data Editor, File Browser, and RConsole tabs expanded and attached to the main window.

The placement can be re-arranged, and each individual window can also be detached as a separate top level window (Windows > Detach).

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1 > 1 E. Commandog MacConsele St Help search 10 Project Q. Search			C/User/bing/Award R (王)

Figure 2.2: Tabs

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	Useful settings • install R and RKWard packages •ber add-on related settings (e.g., git/project integration) • Startup options (including this page)	Documentation starting points • EKWard for new Users • EKWard for Users • EKWard Add-Ons • Indek Shoding / EAQ • Indek Shoding / EAQ • External Inds. scienceLhomesage	
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Figure 2.3: Tabs Position

3 Menu File

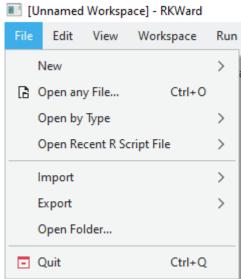


Figure 3.1: Menu File

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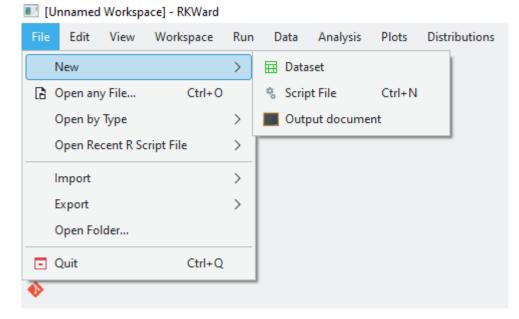


Figure 3.2: Menu File - New

[Unnamed Workspace] - RKWard

File	Edit	View	Workspace	Run	[)ata	Analysis	Plots	Distributions	Windows
	New			>	ave	\sim				
6	Open an	y File	Ctrl+O							
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	Open Re	ecent R So	ript File	>	6	Open	RKWard O	utput File		
	Import			>	Γ					
	Export			>						
	Open Fo	lder								
Ð	Quit		Ctrl+Q							
ø										

Figure 3.3: Menu File - Open by Type

[Unnamed Workspace] - RKWard

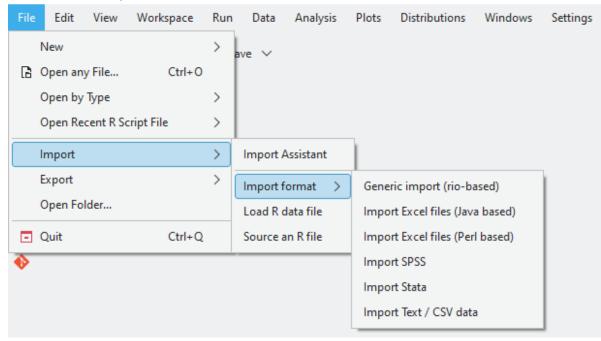


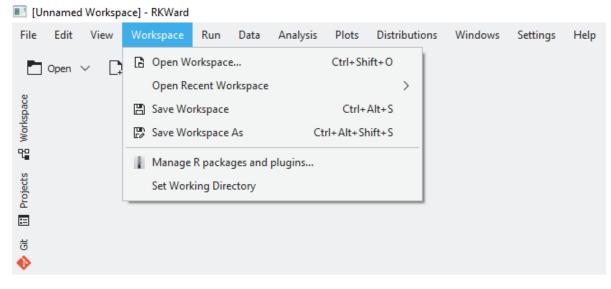
Figure 3.4: Menu File - Import

[Unnamed Workspace] - RKWard

File	Edit	View	Workspace	Run	Data	Analysis	Plots	Distributions
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60	Open any	File	Ctrl+O					
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h	mport			>				
E	Export			>	Create p	ackage skel	eton	
C	Open Fol	der			Export R	Markdown		
	Quit		Ctrl+Q		Export Ta	able / CSV fi	les	
•				_	Export v	ector or mat	trix data	
					Save obj	ects as R da	ta	

Figure 3.5: Menu File - Export

4 Menu Workspace





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5 Menu Windows

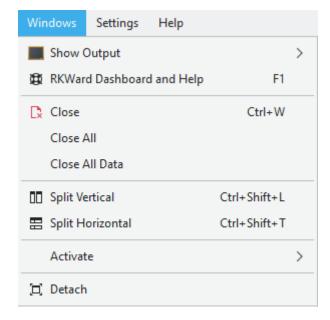


Figure 5.1: Menu Windows

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6 Menu Settings

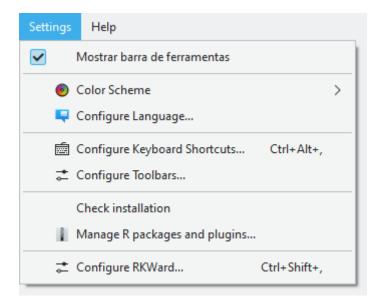


Figure 6.1: Menu Settings

6.1 Configuring and Loading Packages

This dialog allows to easily load/unload multiple packages simultaneously.

Thousands of add-on packages can be downloaded for R. RKWard offers a graphical interface to browse, install, and update such packages.

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oad / Unload R pack	ages Install / Up	date / Remove	R packages Mar	ge RKWard Plugins	
nstalled packages				Loaded packages	
Name ^	Title	Version	Location	Name	^
arrow	Integration to '	8.0.0	C:/Users/	— base	
— askpass	Safe Password E	1.1	C:/Users/	- datasets	
assertthat	Easy Pre and Po	0.2.1	C:/Users/	— graphics	
— available	Check if the Titl Interesting	1.0.5	C:/Users/	→ Load — methods	
- backports	Reimplementati	1.4.1	C:/Users/	rkward	
- base	The R Base Pack	4.2.0	C:/Progra	< Unloadstats	
— base64enc	Tools for base64	0.1-3	C:/Users/		
— bit	Classes and Me	4.0.4	C:/Users/	Gen S	
bit64	A S3 Class for V	4.0.5	C:/Users/		
blob	A Simple S3 Cla ('BLOBS')	1.2.3	C:/Users/		
- bookdown	Authoring Book	0.27	C:/Users/		
- boot	Bootstrap Funct	1.3-28	C:/Progra		
- brew	Templating Fra	1.0-7	C:/Users/		
— brio	Basic R Input O	1.1.3	C:/Users/		
- broom	Convert Statisti	1.0.5	C:/Users/		
— bslib	Custom 'Bootst	0.3.1	C:/Users/		

Figure 6.2: Menu Settings - Load/Unload Packages

oad / Unload	R packages Install /	/ Update / Remove R packages	Manage RKWard	d Plugins			
how only pa	ckages matching: Se	earch				Show only packages providing RKWa	ard dialog
<u>i</u>	Status	Name ^	Title	Version	Location	1	
		renv	Project Environ	0.15.5	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
		reprex	Prepare Reprod	2.0.2	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
		rex	Friendly Regula	1.2.1	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
		rkward	RKWard GUI su	0.7.5	C:/Use	rs/luisg/.rkward/.rkward_packages/402	
	•••	rkwardtests	RKWard Plugin	0.7.5	C:/User	rs/luisg/.rkward/.rkward_packages/402	
	•••	rlang	Functions for B	1.1.1	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
	•••	rmarkdown	Dynamic Docu	2.24	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
	•••	roxygen2	In-Line Docum	7.2.1	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
	•••	rpart	Recursive Partiti	4.1.16	C:/Prog	gram Files/RKWard/lib/R/library	
	•••	rpart.plot	Plot 'rpart' Mod	3.1.1	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
	•••	rprojroot	Finding Files in	2.0.3	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
		rsconnect	Deployment Int Applications	0.8.27	C:/User	rs/luisg/AppData/Local/R/win-library/4.2	
stall packag	es to: C:\Users\luisg	\AppData\Local/R/win-library/	/4.2 🗸 🗌 Insta	II suggested p	ackages	🔁 Configure Re	positories

Figure 6.3: Menu Settings - Install Packages

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stalled plug	jin groups (.pluginmap files)				
ctive	Title	ID	Status		
~	Analysis	rkward::analysis	Loaded	Add	_
~	Data transformation and conversion	rkward::data	Loaded	Add	_
/	Distributions	rkward::distribu	Loaded		
Load / Unload f Installed plugin Active	Embedded plugins	rkward::embed	Loaded		
/	Data Import and Export	rkward::import	Loaded	Remo	/e
/	Item Response Theory	rkward::irt	Loaded		
	Menu structure definition	rkward::menu	Loaded		
/	Plots	rkward::plots	Loaded		
	Plugins under development	rkward::under		~ U	ρ
/	Graphics Device add-ons	rkward::x11device	Loaded		
				~ 00	

Figure 6.4: Menu Settings - RkWard Plugins