

# EINFÜHRUNG IN R - WIE BEKOMMT MAN HILFE?

Jan-Philipp Kolb

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# WIE BEKOMME ICH HILFE?

- Um Hilfe im Allgemeinen zu bekommen:

```
help.start()
```

- Online-Dokumentation für die meisten Funktionen:

```
help(name)
```

- Benutze ?, um Hilfe zu bekommen

```
?mean
```

- `example(lm)` liefert ein Beispiel für die lineare Regression

```
example(lm)
```

- Eine Vignette ist ein Papier, das die wichtigsten Funktionen eines Pakets darstellt.
- Sie enthalten viele reproduzierbare Beispiele.
- Vignetten sind ein neues Werkzeug, deshalb hat nicht jedes Paket eine Vignette.

```
browseVignettes()
```

- Um eine Vignette zu bekommen:

```
vignette("osmdata")
```

# EIN BEISPIEL FÜR EINE VIGNETTE - DAS PAKET OSMDATA

<https://cran.r-project.org/web/packages/osmdata/vignettes/osmdata.html>

## 1. Introduction

`osmdata` is an R package for downloading and using data from OpenStreetMap ([OSM](#)). OSM is a global open access mapping project, which is free and open under the [ODbL licence](#) [[@OpenStreetMap](#)]. This has many benefits, ensuring transparent data provenance and ownership, enabling real-time evolution of the database and, by allowing anyone to contribute, encouraging democratic decision making and citizen science [[@johnson\\_models\\_2017](#)]. See the [OSM wiki](#) to find out how to contribute to the world's open geographical data commons.

Unlike the [OpenStreetMap](#) package, which facilitates the download of raster tiles, `osmdata` provides access to the vector data underlying OSM.

`osmdata` can be installed from CRAN with

```
install.packages("osmdata")
```

and then loaded in the usual way:

```
library(osmdata)
```

```
## Data (c) openStreetMap contributors, ODbL 1.0. http://www.openstreetmap.org/copyright
```

The development version of `osmdata` can be installed with the `devtools` package using the following command:

```
devtools::install_github('osmdatar/osmdata')
```

# Demos

- für manche Pakete gibt es Demos:

```
demo() # zeigt alle verfügbaren Demos
demo(package = "httr") # Zeigt alle Demos in einem Paket

# Ein spezifisches Demo laufen lassen:
demo("oauth1-twitter", package = "httr")
```

- Wenn ein Demo gestartet wird, ist der zugehörige Code in der Konsole sichtbar

```
demo(nlm)
```

```
> demo(nlm)

demo(nlm)
---- ~~~

Type <Return> to start :
```

# DIE FUNKTION APROPOS

- findet alles, was den angegebenen String enthält:

```
apropos("nova")
```

```
## [1] "anova"                "manova"                "power.anova.test"  
## [4] "stat.anova"           "summary.manova"
```

- Auch **reguläre Ausdrücken** können verwendet werden...

```
?"regular expression"
```

```
help.search("^glm")
```

- ?? ist ein Synonym für help.search

# Suchmaschine für die R-Seite

```
RSiteSearch("glm")
```

## R Site Search

Query:   [\[How to search\]](#)

Display:  Description:  Sort:

### Target:

- ☒ Functions  
☒ Task views

For problems WITH THIS PAGE (not with R) contact [baron@upenn.edu](mailto:baron@upenn.edu).

## Results:

### References:

- **views:** [ glm: 11 ]
- **vignettes:** [ (can't open the index) ]
- **functions:** [ glm: 4391 ]

**Total 4402 documents matching your query.**

1. [R: Bias reduction in Binomial-response GLMs](#) (score: 299)

**Author:** *unknown*

**Date:** *Fri, 14 Jul 2017 10:27:38 -0500*

Bias reduction in Binomial-response GLMs Description Usage Arguments Details Value Warnings

brglm {brglm} R Documentation Fits bino

<http://finzi.psych.upenn.edu/R/library/brglm/html/brglm.html> (21,462 bytes)

- Ich nutze **duckduckgo.de**:

R-project + "was ich schon immer wissen wollte"

- das funktioniert natürlich für alle Suchmaschinen!




DuckDuckGo

R-project + "what I want to know" |







- Für alle Fragen zum Programmieren
- Ist nicht auf R fokussiert - aber es gibt **viele Diskussionen zu R-Fragen**
- Sehr detaillierte Diskussionen

 **stackoverflow**

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R is a free, open-source programming language and software environment for statistical computing, bioinformatics, and graphics. Please supplement your question with a minimal reproducible example. Use dput() for data and specify all non-base packages with library calls. For statistical questions ...

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### How to make a great R reproducible example?


When discussing performance with colleagues, teaching, sending a bug report or searching for guidance on mailing lists and here on SO, a reproducible example is often asked and always helpful. What ...

[r](#) [r-faq](#)

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11 revs, 8 users 54%  
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JAN-PHILIPP KOLB

EINFÜHRUNG IN R - WIE BEKOMMT MAN HILFE?

# EIN SCHUMMELZETTEL FÜR BASIS R

<https://www.rstudio.com/resources/cheatsheets/>

## Base R

### Cheat Sheet

#### Getting Help

##### Accessing the help files

###### ?mean

Get help of a particular function.

**help.search('weighted mean')**

Search the help files for a word or phrase.

**help(package = 'dplyr')**

Find help for a package.

##### More about an object

###### str(iris)

Get a summary of an object's structure.

###### class(iris)

Find the class an object belongs to.

#### Using Packages

##### install.packages('dplyr')

Download and install a package from CRAN.

##### library(dplyr)

Load the package into the session, making all its functions available to use.

##### dplyr::select

Use a particular function from a package.

##### data(iris)

Load a built-in dataset into the environment.

#### Vectors

##### Creating Vectors

|                   |             |                             |
|-------------------|-------------|-----------------------------|
| c(2, 4, 6)        | 2 4 6       | Join elements into a vector |
| 2:6               | 2 3 4 5 6   | An integer sequence         |
| seq(2, 3, by=0.5) | 2.0 2.5 3.0 | A complex sequence          |
| rep(1:2, times=3) | 1 2 1 2 1 2 | Repeat a vector             |
| rep(1:2, each=3)  | 1 1 1 2 2 2 | Repeat elements of a vector |

##### Vector Functions

|                       |                    |
|-----------------------|--------------------|
| <b>sort(x)</b>        | <b>rev(x)</b>      |
| Return x sorted.      | Return x reversed. |
| <b>table(x)</b>       | <b>unique(x)</b>   |
| See counts of values. | See unique values. |

##### Selecting Vector Elements

| By Position       |                                  |
|-------------------|----------------------------------|
| <b>x[4]</b>       | The fourth element.              |
| <b>x[-4]</b>      | All but the fourth.              |
| <b>x[2:4]</b>     | Elements two to four.            |
| <b>x[-(2:4)]</b>  | All elements except two to four. |
| <b>x[c(1, 5)]</b> | Elements one and five.           |

#### Programming

##### For Loop

```
for (variable in sequence){  
  Do something  
}
```

##### Example

```
for (i in 1:4){  
  j <- i + 10  
  print(j)  
}
```

##### While Loop

```
while (condition){  
  Do something  
}
```

##### Example

```
while (i < 5){  
  print(i)  
  i <- i + 1  
}
```

##### If Statements

```
if (condition){  
  Do something  
} else {  
  Do something different  
}
```

##### Example

```
if (i > 3){  
  print('Yes')  
} else {  
  print('No')  
}
```

##### Functions

```
function_name <- function(var){  
  Do something  
  return(new_variable)  
}
```

##### Example

```
square <- function(x){  
  squared <- x*x  
  return(squared)  
}
```

#### Reading and Writing Data

Also see the **readr** package.

| Input  | Output                                   | Description                           |
|--|--|---------------------------------------|
| <code>df &lt;- read.table('file.txt')</code> | <code>write.table(df, 'file.txt')</code> | Read and write a delimited text file. |

## Regular Expressions



Basics of regular expressions and pattern matching in R by Ian Kopacka. Updated 09/16.

DOWNLOAD

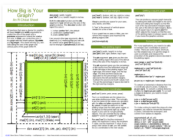
## The leaflet package



Interactive maps in R with leaflet, by Keijie Shi. Updated 05/17.

DOWNLOAD

## How big is your graph?



Graph sizing with base R by Stephen Simon. Updated 10/16.

DOWNLOAD

## The eurostat package



R tools to access the eurostat database, by rOpenGov. Updated 03/17.

DOWNLOAD

## The survminer package



Elegant survival plots, by Przemyslaw Biecek. Updated 03/17.

DOWNLOAD

## The sjmisc package



dplyr friendly Data and Variable Transformation, by Daniel Lüdtke. Updated 08/17.

DOWNLOAD

- Viele Beispiele und Hilfe bezüglich eines Themas
- Beispiel: **Quick R - Getting Help**



Quick-R  
powered by DataCamp

[R Tutorial](#) | [R Interface](#) | [Data Input](#) | [Data Management](#) | [Statistics](#) | [Advanced Statistics](#) | [Graphs](#) | [Advanced Graphs](#)

## < R Interface

### Getting Help

The Workspace

Input/Output

Packages

Graphic User Interfaces

Customizing Startup

Publication Quality Output

Batch Processing

Reusing Results

## Getting Help

Once R is installed, there is a comprehensive built-in help system. At the program's command prompt you can use any of the following:

```
help.start()  # general help
help(foo)     # help about function foo
?foo         # same thing
apropos("foo") # list all functions containing string foo
example(foo)  # show an example of function foo
```

{swirl}

# DER START MIT SWIRL

```
library(swirl)
```

```
## Warning: package 'swirl' was built under R version 3.5.3
```

```
##
```

```
## | Hi! Type swirl() when you are ready to begin.
```

```
swirl()
```

```
> swirl()
```

```
| Welcome to swirl! Please sign in. If you've been here before, use the same  
| name as you did then. If you are new, call yourself something unique.
```

```
What shall I call you? |
```

- Überblick - wie bekommt man Hilfe in R



[\[Home\]](#)

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[CRAN](#)

## Getting Help with R

### Helping Yourself

Before asking others for help, it's generally a good idea for you to try to help yourself. R includes extensive facilities for accessing documentation and searching for help. There are also specialized search engines for accessing information about R on the internet, and general internet search engines can also prove useful ([see below](#)).

- Eine Liste mit HowTo's
- Eine Liste mit den wichtigsten R-Befehlen

## HILFE FÜR `WHICH.MIN`

- Tippe den Befehl `?which.min` in die Konsole. Dies öffnet eine Hilfeseite im unteren rechten Fenster von RStudio. Wofür kann man die Funktion `which.min` nutzen?
  - Der Name der Funktion muss bekannt sein, um die Hilfeseite so zu öffnen. Manchmal (oft, sogar) kennen man den Namen der R-Funktionen nicht; dann kann eine **Suchmaschine** helfen. Suche bspw. mit den Begriffen `R minimum vector`.
- 
- Quelle: - LABORATORY FOR APPLIED STATISTICS: Intro to R - **Exercises**