# A2 Wie bekomme ich Hilfe?

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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)
```

# Vignetten

- 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

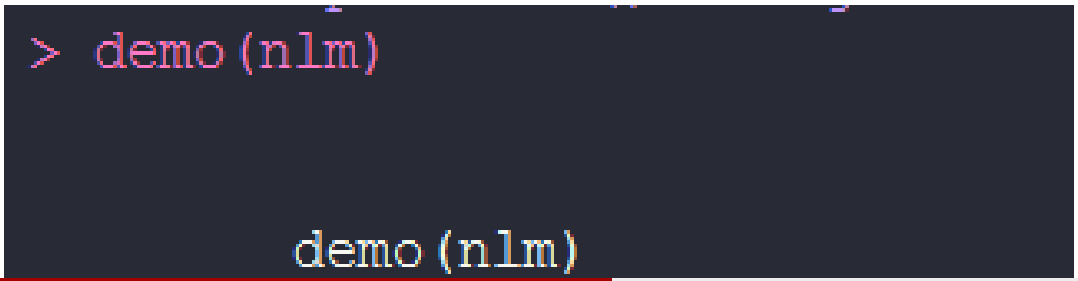
- für manche Pakete gibt es Demos:

```
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)
```



# Die Funktion apropos

- durchsucht alles über den angegebenen String:

```
apropos("lm")
```

```
##   [1] ".colMeans"       ".lm.fit"           "colMeans"
##   [4] "confint.lm"      "contr.helmert"     "dummy.coef.lm"
##   [7] "getAllMethods"   "glm"               "glm.control"
##  [10] "glm.fit"         "KalmanForecast"    "KalmanLike"
##  [13] "KalmanRun"       "KalmanSmooth"      "kappa.lm"
##  [16] "lm"              "lm.fit"            "lm.influence"
##  [19] "lm.wfit"         "model.matrix.lm"   "nlm"
##  [22] "nlminb"          "predict.glm"       "predict.lm"
##  [25] "residuals.glm"   "residuals.lm"      "summary.glm"
##  [28] "summary.lm"
```

- diese Funktion kann auch in Kombination mit **regulären Ausdrücken**

# Suchmaschine für die R-Seite

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

## R Site Search

**Query:** glm Search! [How to search]

**Display:** 20 **Description:** normal **Sort:** by score

**Target:**

☑ Functions

☑ Task views

For problems WITH THIS PAGE (not with R) contact 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

# Nutzung von Suchmaschinen

- Ich nutze **duckduckgo.de:**

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

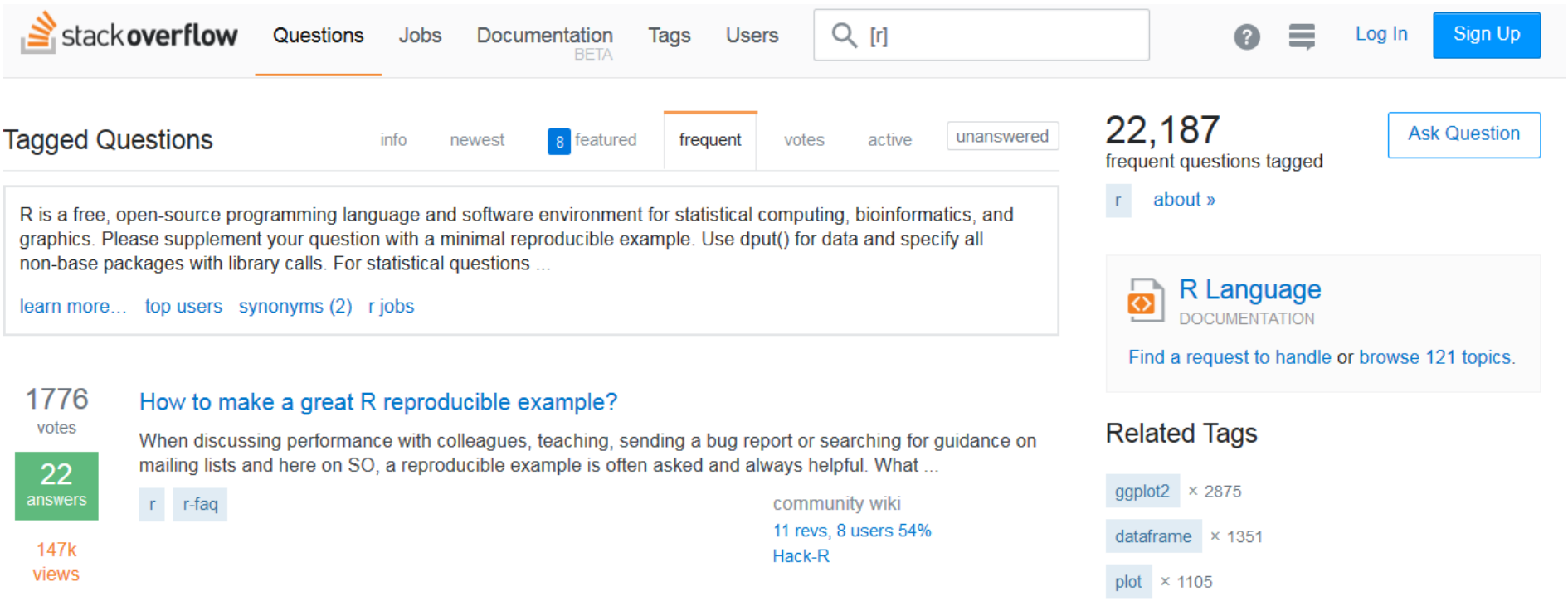
- das funktioniert natürlich für alle Suchmaschinen!

DuckDuckGo

R-project + "what I want to know"

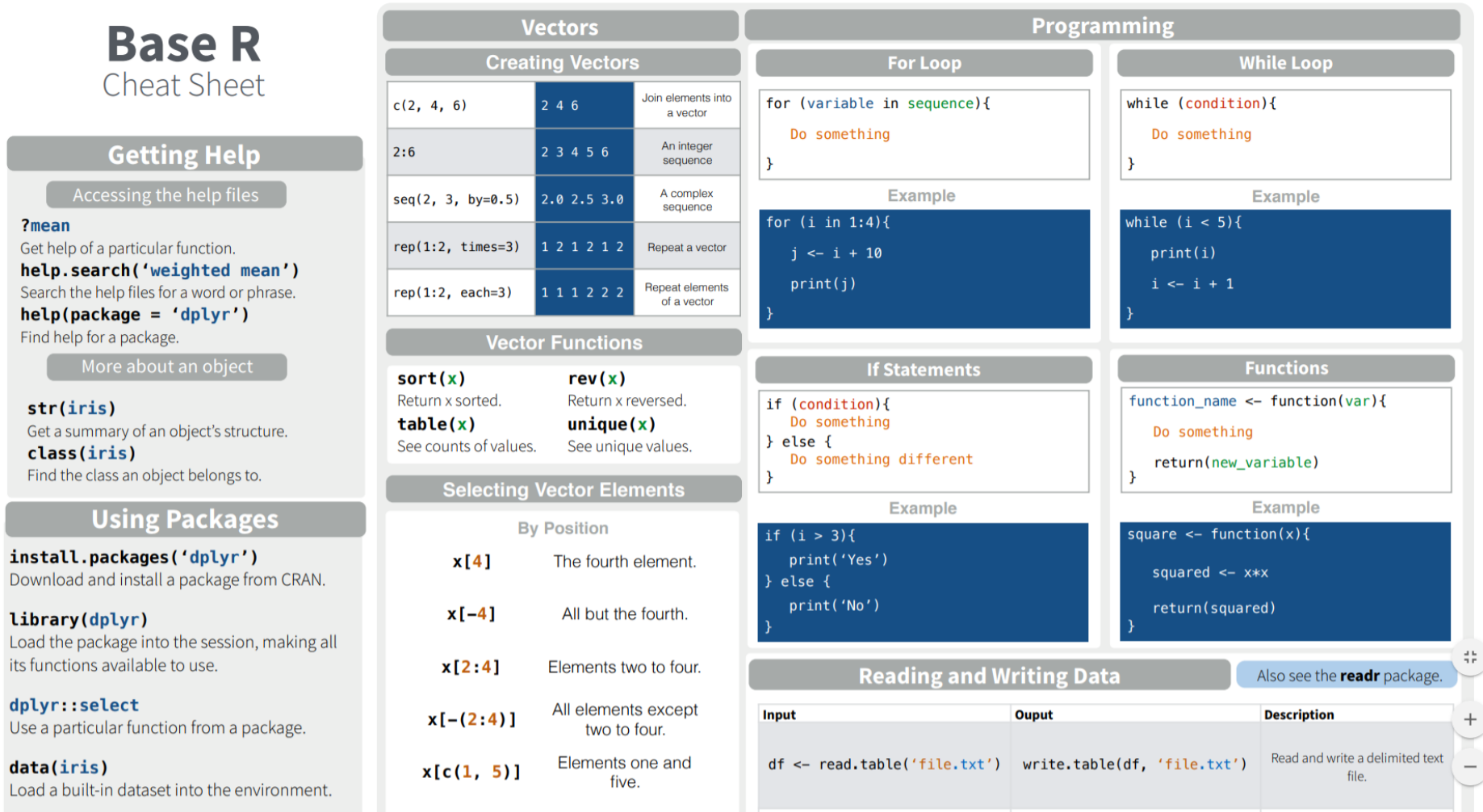
# Stackoverflow

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



# 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

**sort(x)** Return x sorted.
**rev(x)** Return x reversed.
**table(x)** See counts of values.
**unique(x)** See unique values.

#### Selecting Vector Elements

By Position

| | |
|---|---|
| x[4] | The fourth element. |
| x[-4] | All but the fourth. |
| x[2:4] | Elements two to four. |
| x[-(2:4)] | All elements except two to four. |
| x[c(1, 5)] | 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)
}
```

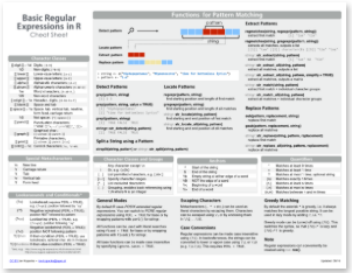
### Reading and Writing Data

Also see the **readr** package.

| Input | Ouput | Description |
|---|---|---|
| df <- read.table('file.txt') | write.table(df, 'file.txt') | Read and write a delimited text file. |

# Mehr Schummelzettel

Regular Expressions



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

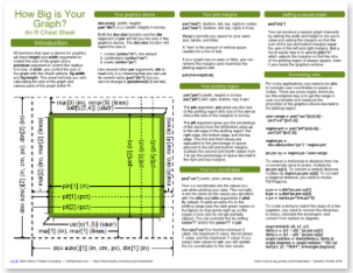
DOWNLOAD

The leaflet package

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

DOWNLOAD

How big is your graph?



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

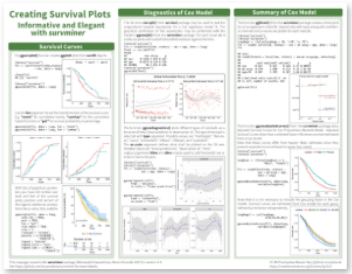
DOWNLOAD

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 Lüdecke. Updated 08/17.

DOWNLOAD

# Quick R

- Immer mit vielen Beispielen und Hilfen 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
```

# Weitere Links

- **Überblick - wie bekommt man Hilfe in R**

[Home]

**Download**

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**

# Aufgabe A2A Hilfe bekommen

- Versuchen Sie den Befehl `?which.min`. Dies öffnet eine Hilfeseite im unteren rechten Fenster von RStudio. Was macht die Funktion?
- Sie müssen den Namen der Funktion kennen, um die Hilfeseite wie oben beschrieben zu öffnen. Manchmal (oft, sogar) kennen Sie den Namen der R-Funktionen nicht; dann kann Ihnen eine **Suchmaschine** helfen. Versuchen Sie zum Beispiel, den Text `R minimum vector` zu suchen.

**Quelle für diese Aufgabe**