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

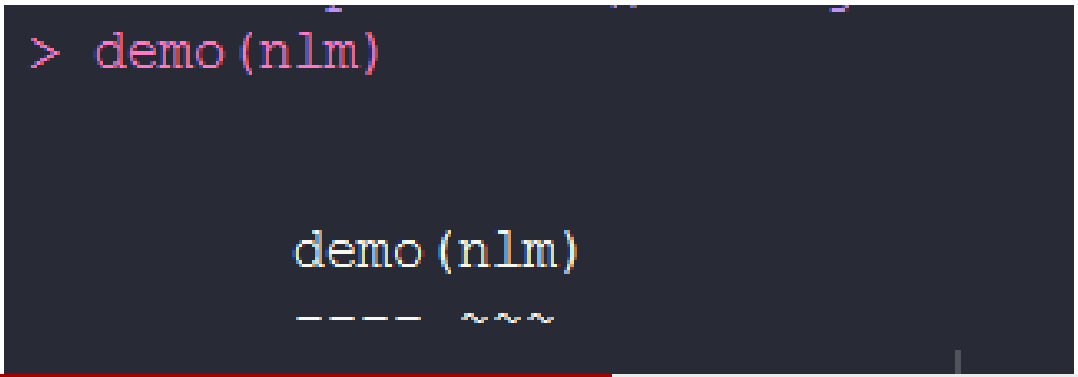
- für manche Pakete gibt es Demos:

```
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")
```

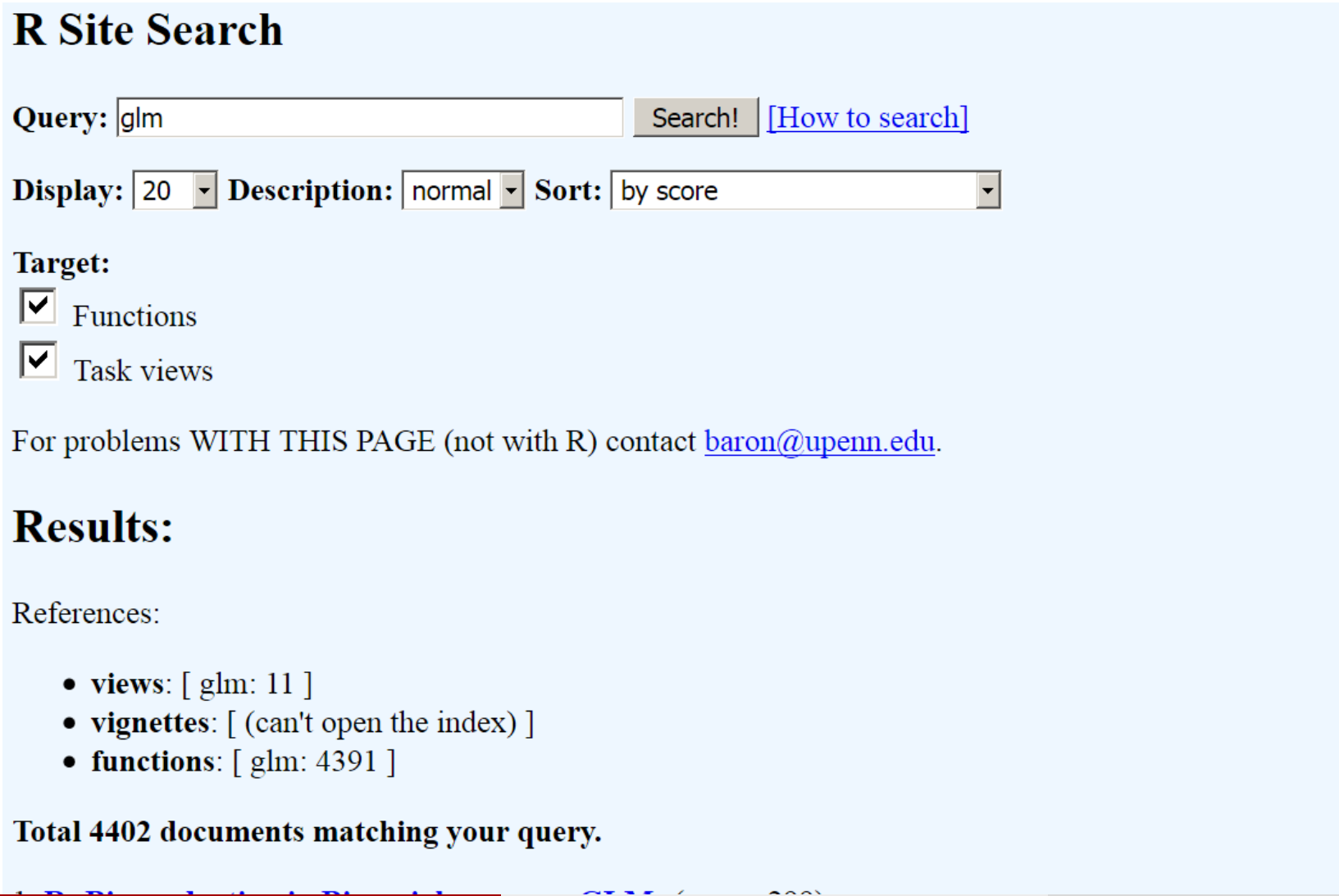
```
##   [1] ".colMeans"       ".lm.fit"           "colMeans"
##   [4] "confint.lm"      "contr.helmert"     "dummy.coef.lm"
##   [7] "getAllMethods"   "glm"               "glm.control"
##  [10] "glm.fit"         "KalmanForecast"    "KalmanLike"
##  [13] "KalmanRun"       "KalmanSmooth"      "kappa.lm"
##  [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"
```

- Funktion kann auch mit **regulären Ausdrücken** verwendet werden...

```
?"regular expression"
```

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]

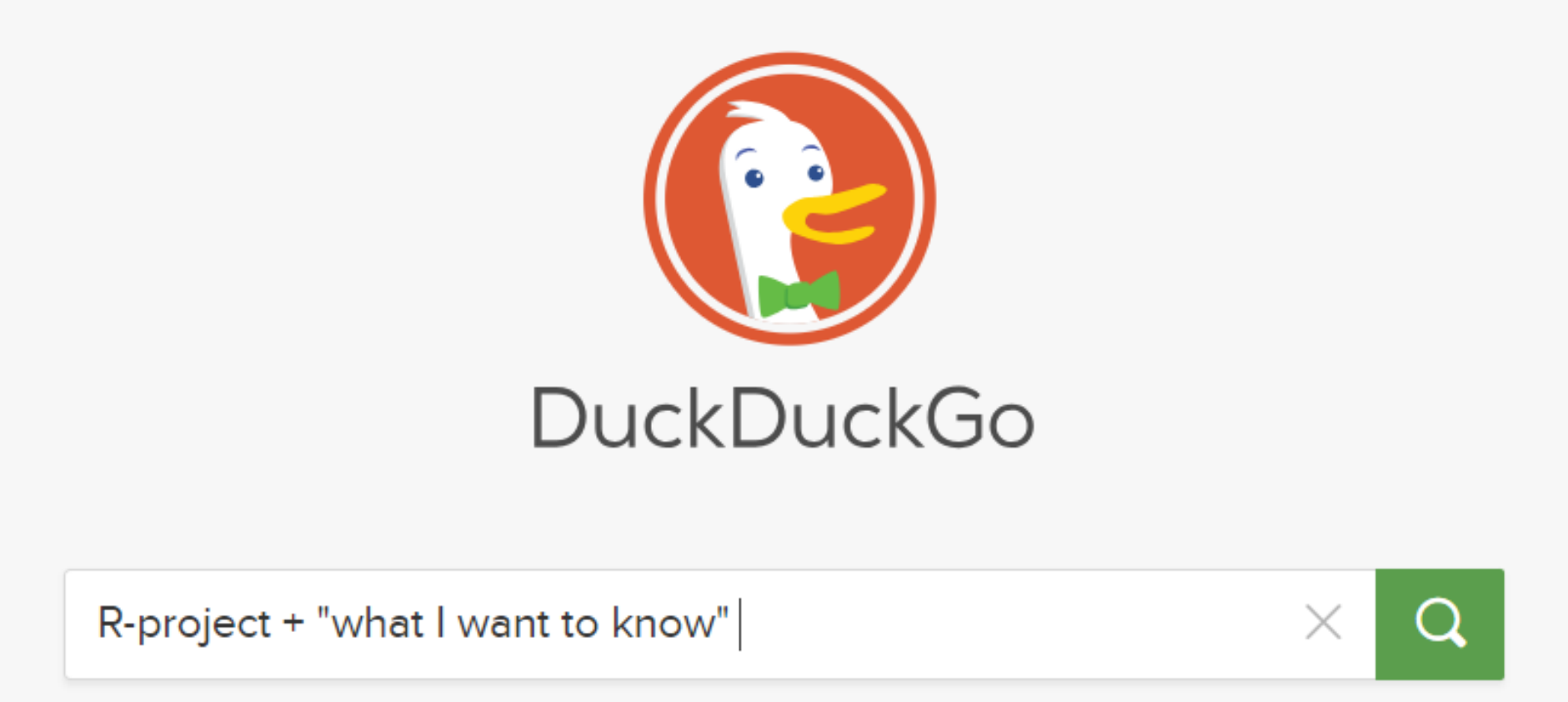
Total 4402 documents matching your query.

Nutzung von Suchmaschinen

- Ich nutze **duckduckgo.de:**

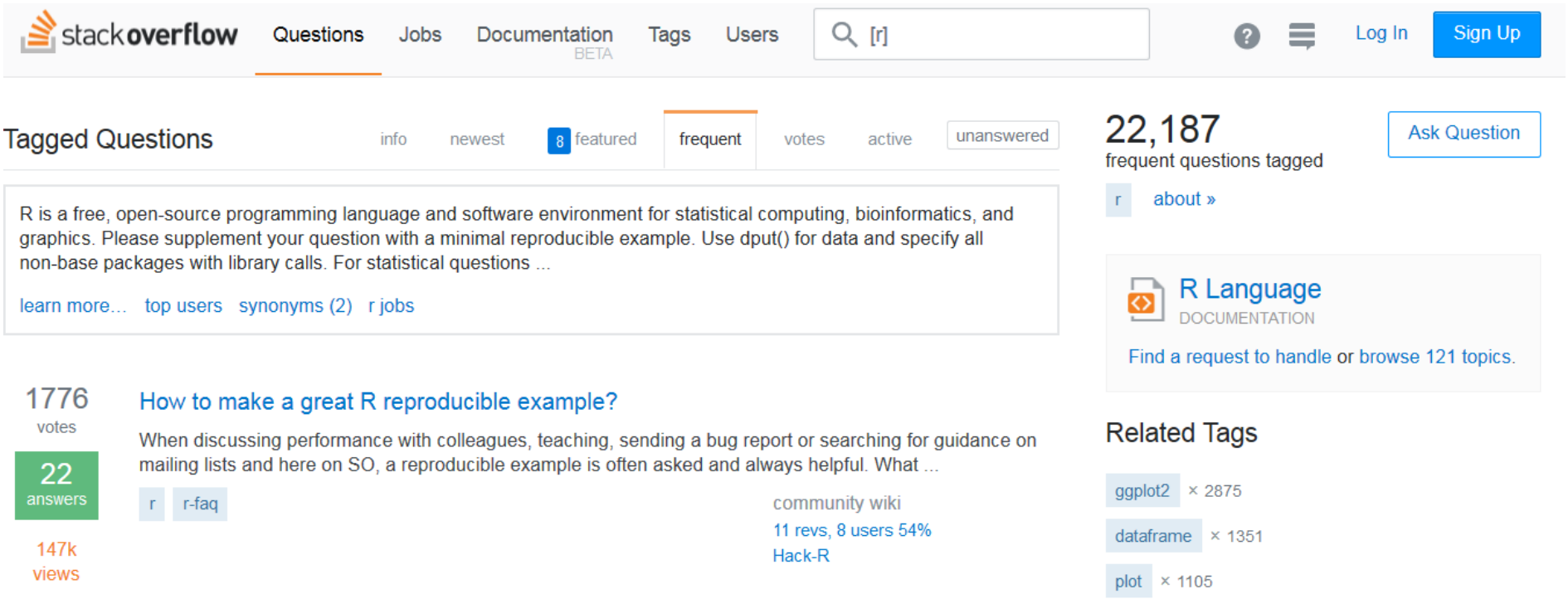
```
R-project + "was ich schon immer wissen wollte"
```

- das funktioniert natürlich für alle Suchmaschinen!



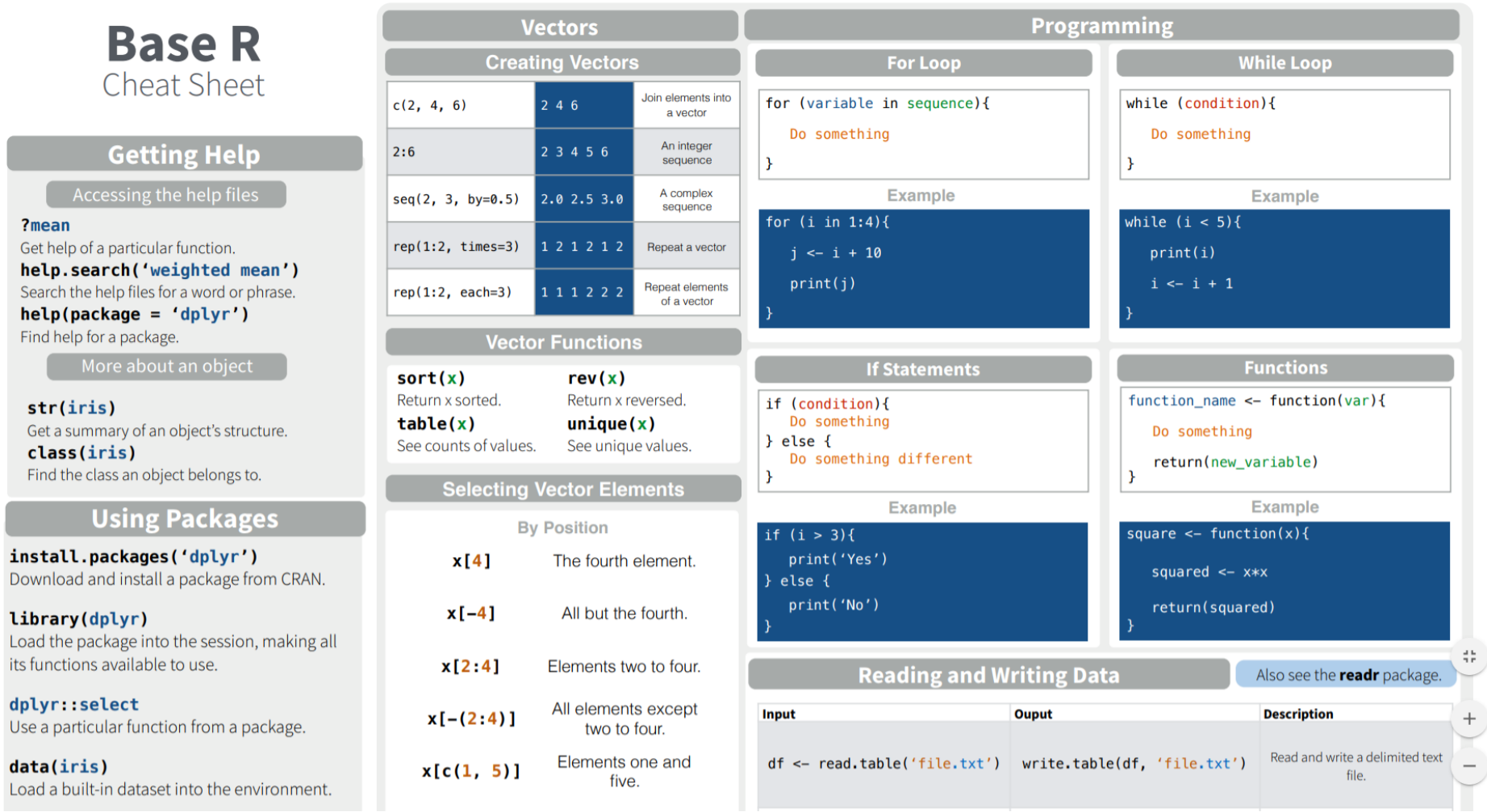
Stackoverflow

- 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)
}
```

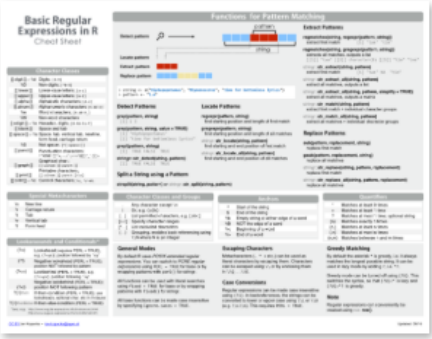
Reading and Writing Data

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.

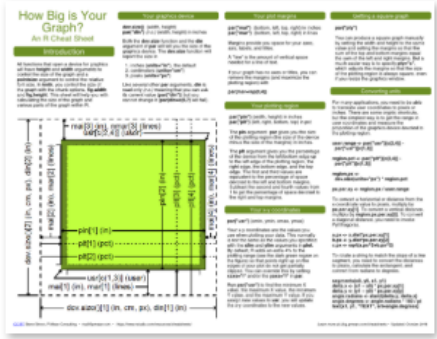
DOWNLOAD

The leaflet package

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

DOWNLOAD

How big is your graph?



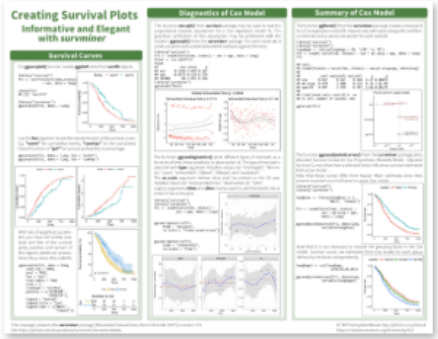
Graph sizing with base R by by Stephen Simon. Updated 10/16.

DOWNLOAD

The eurostat package

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

The survminer package



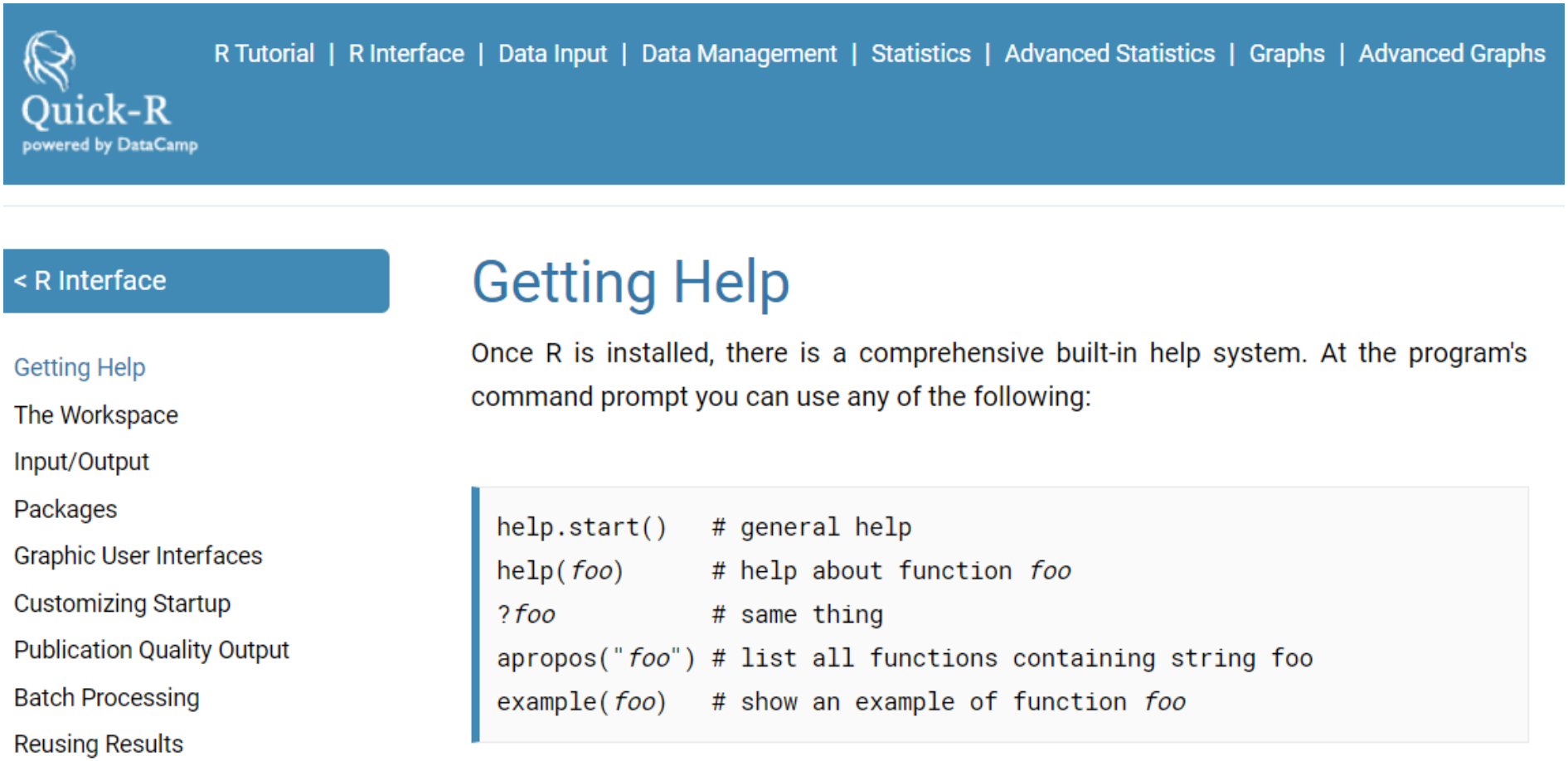
Elegant survival plots, by Przemyslaw Biecek. Updated 03/17.

The sjmisc package

dplyr friendly Data and Variable Transformation, by Daniel Lüdecke.

Quick R

- Immer mit vielen Beispielen und Hilfen bezüglich eines Themas
- Beispiel: **Quick R - Getting Help**



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

LABORATORY FOR APPLIED STATISTICS: Intro to R - Exercises für diese Aufgabe

- 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.