Universidade Federal do ABC
Centro de Ciências Naturais e Humanas
X Semana da Biologia da UFABC

Introdução (rápida) ao R

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20/07/2021

Glossário (básico) do R

>getwd()

script

console

>list

argumento

>setwd()

função

>c

>data.frame

editor

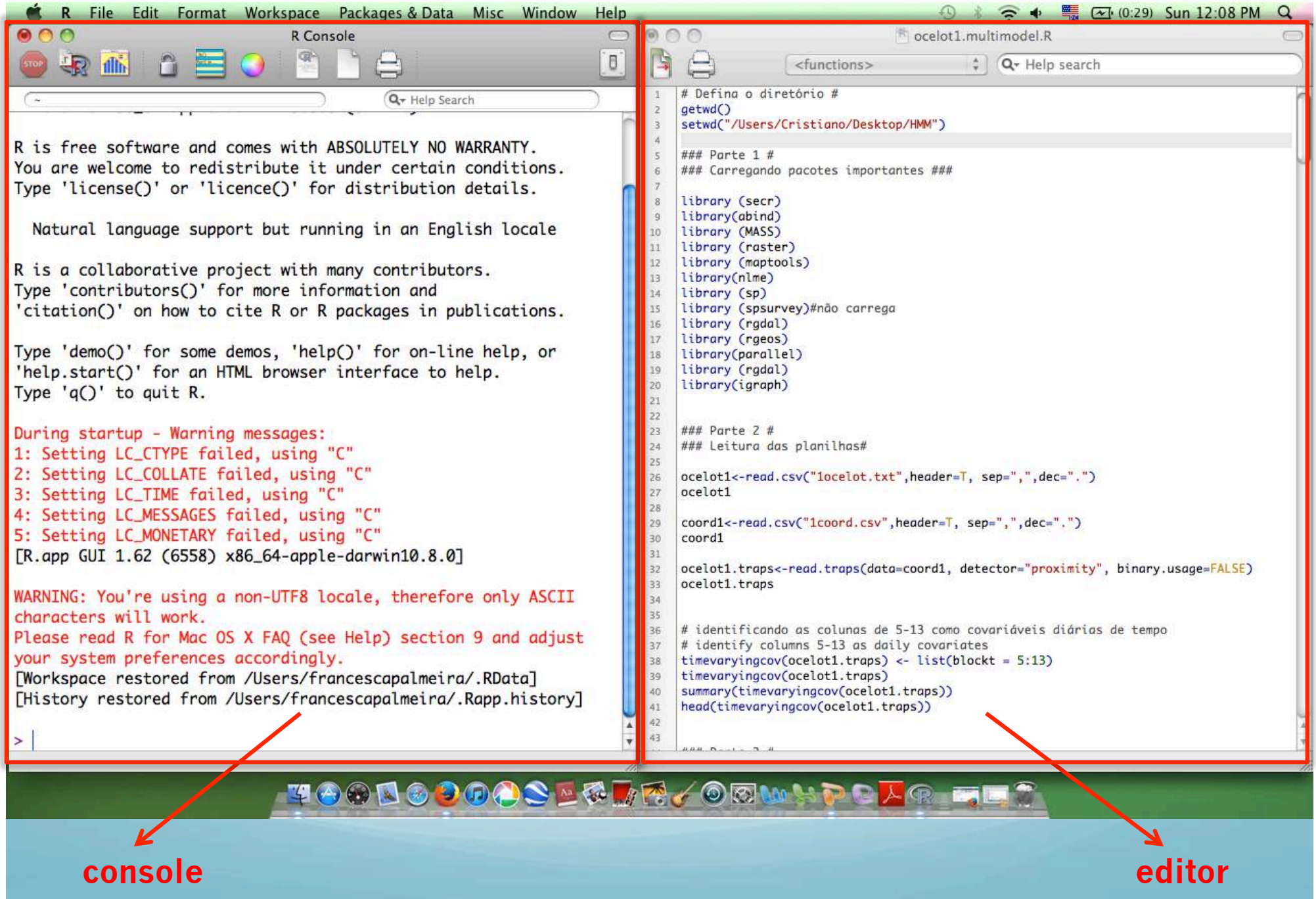
{pacote}

?help

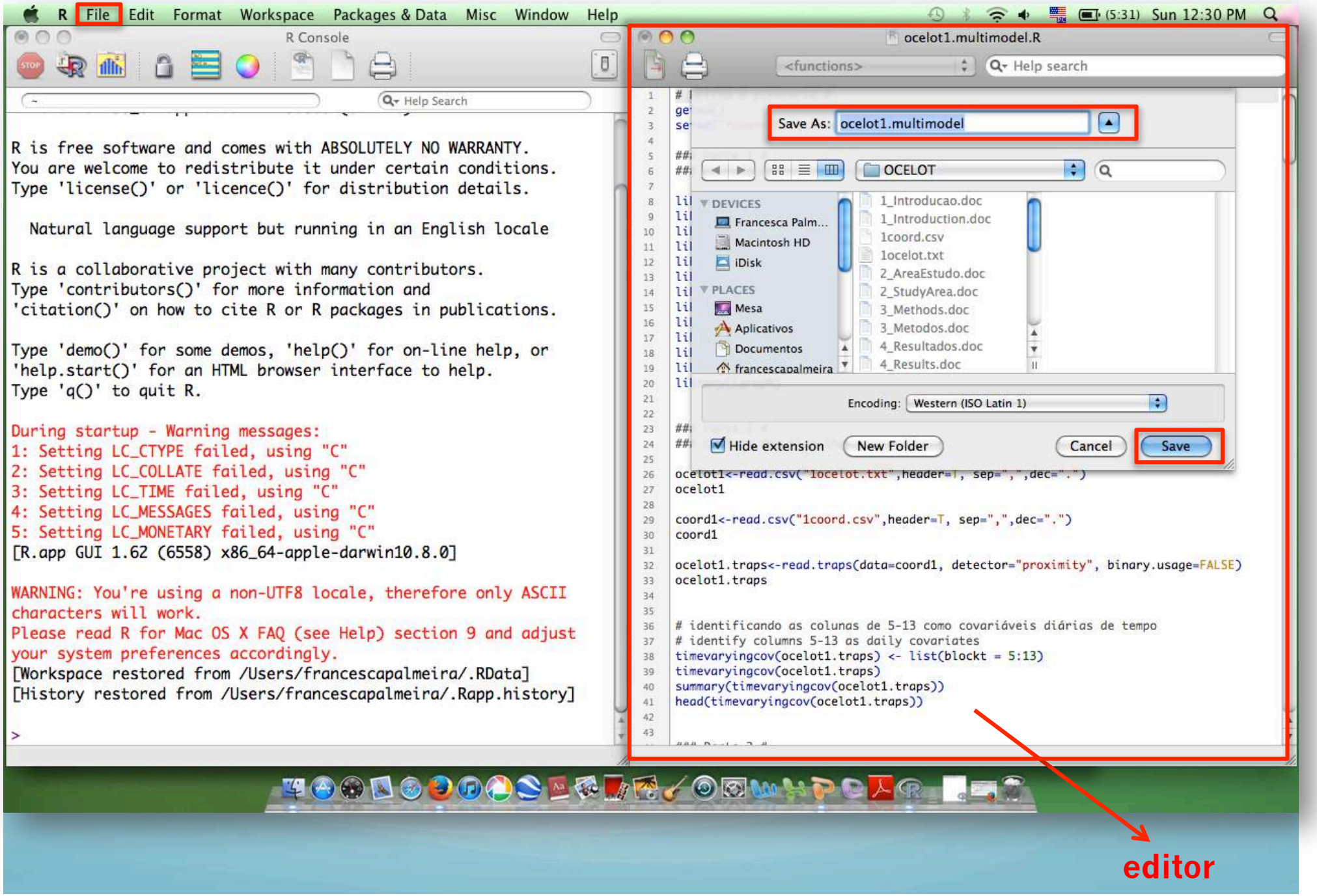
objeto

>matrix

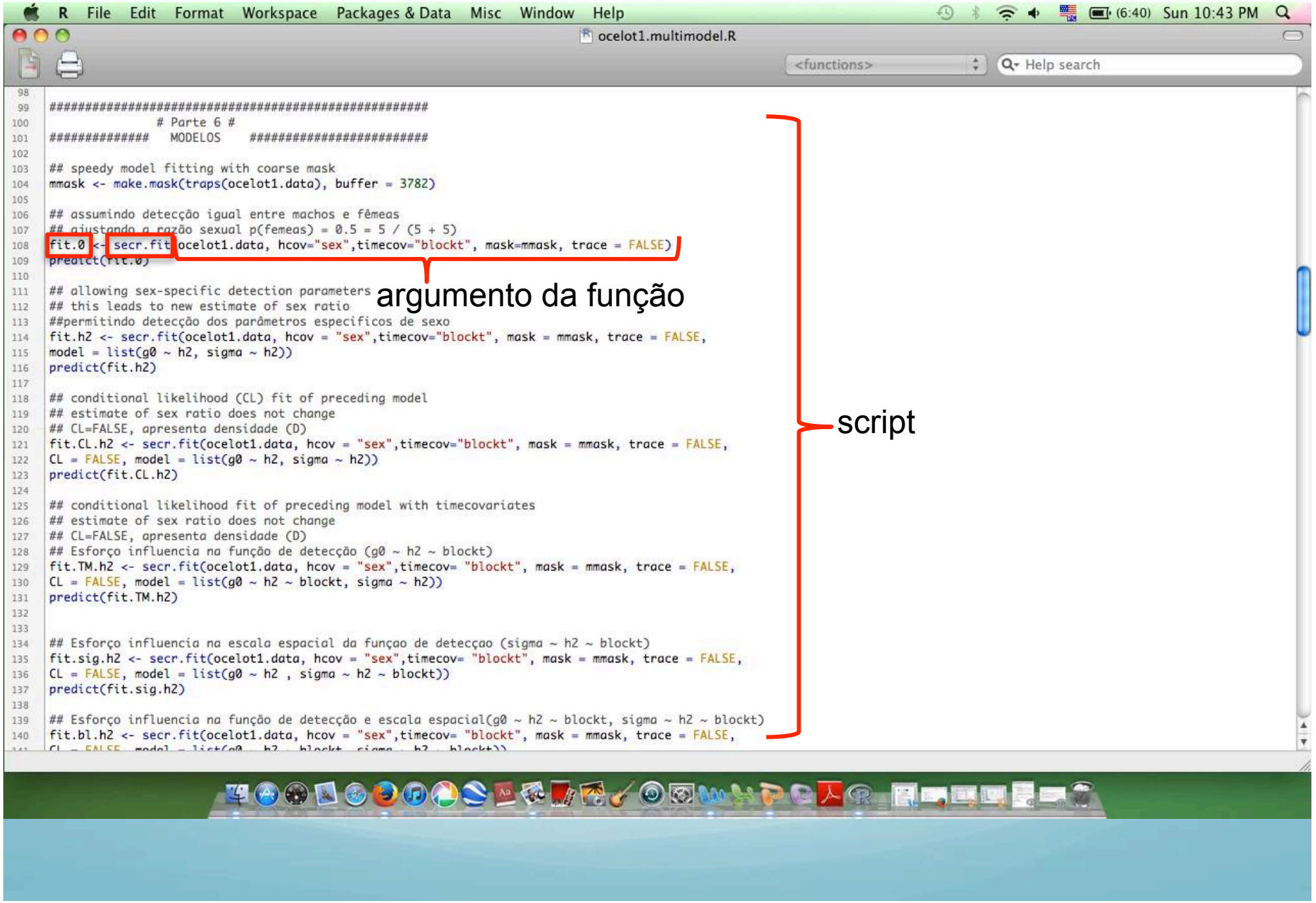
Layout no Mac



Salvar o *script* no editor (Mac)

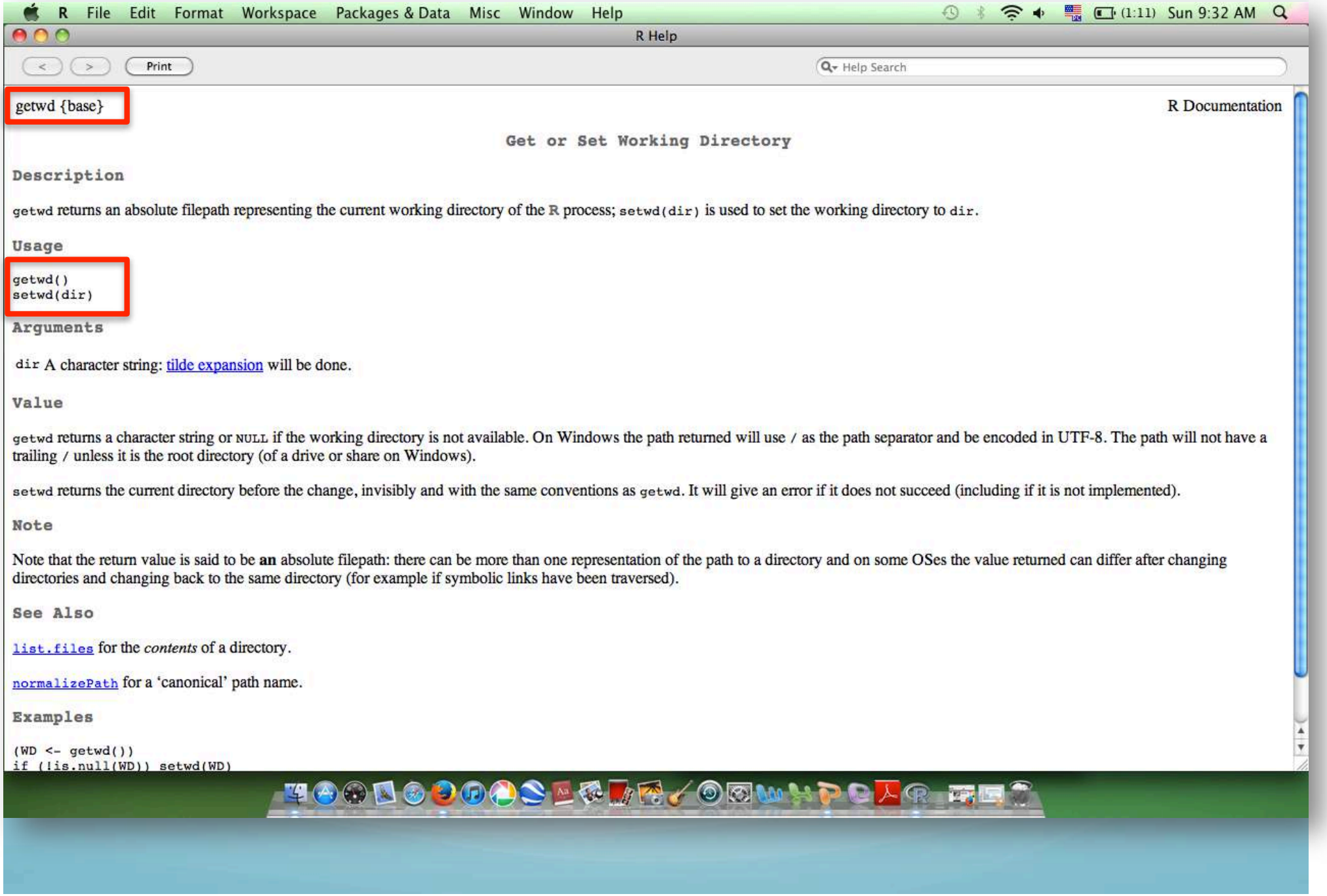


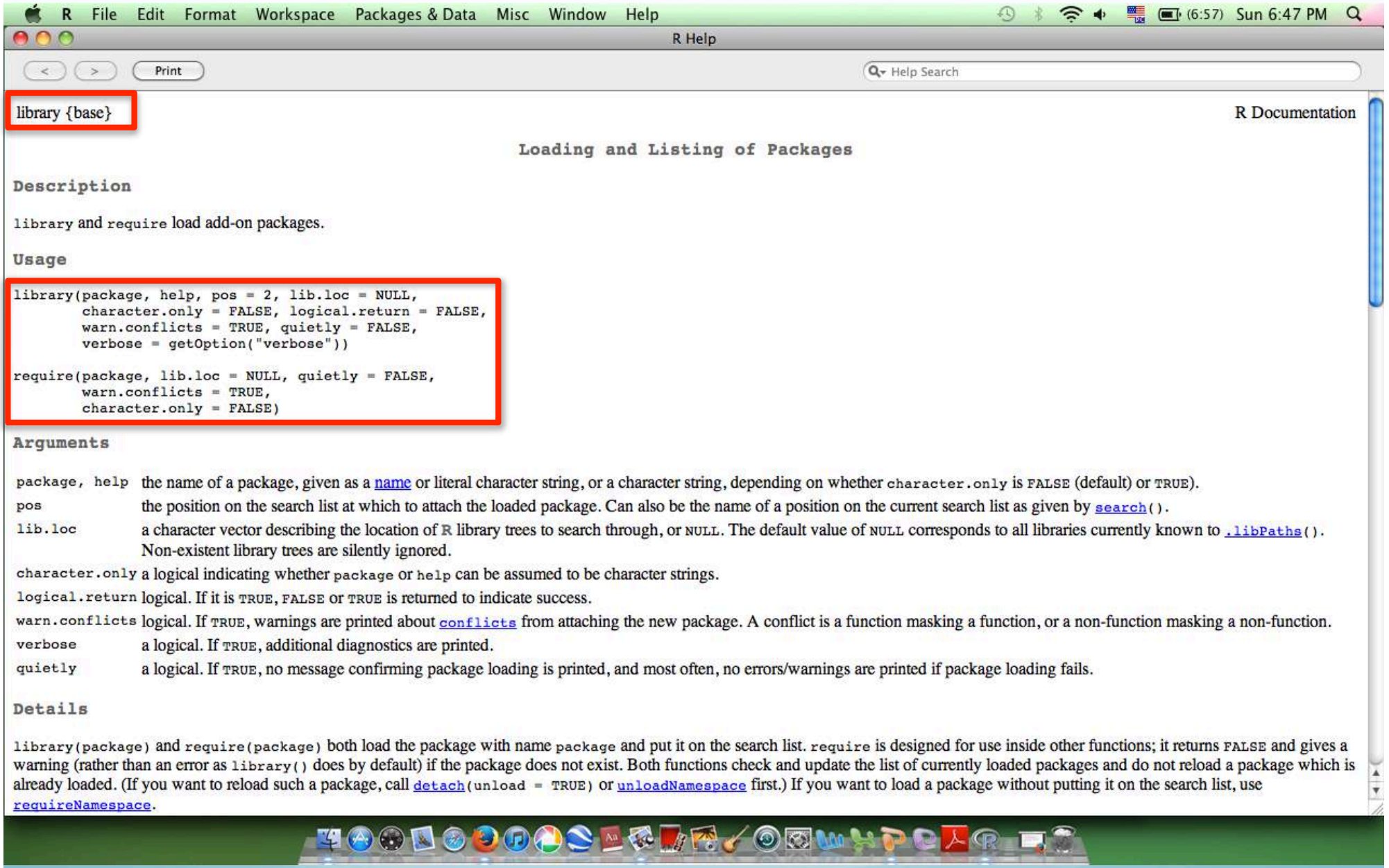
Código do R

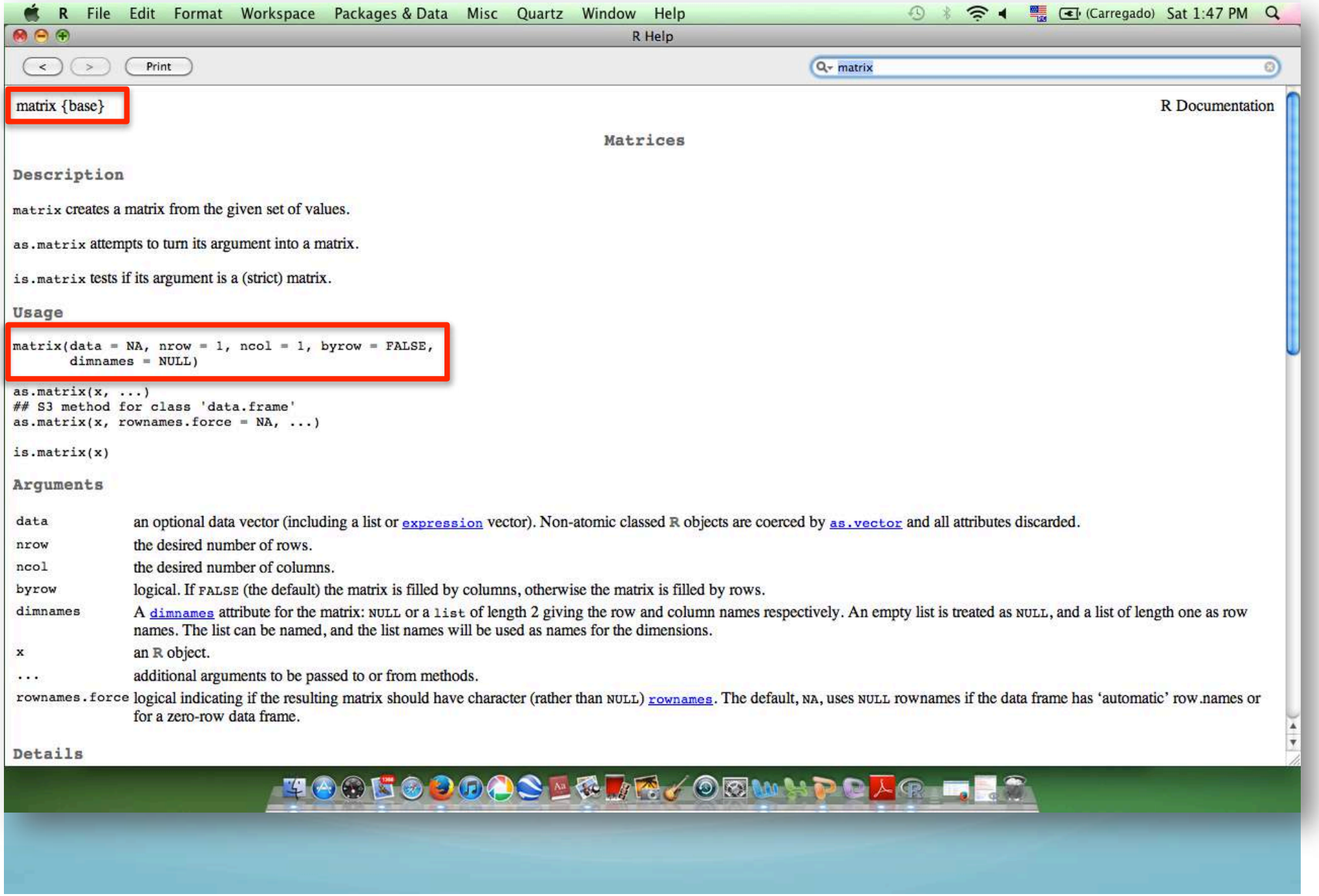


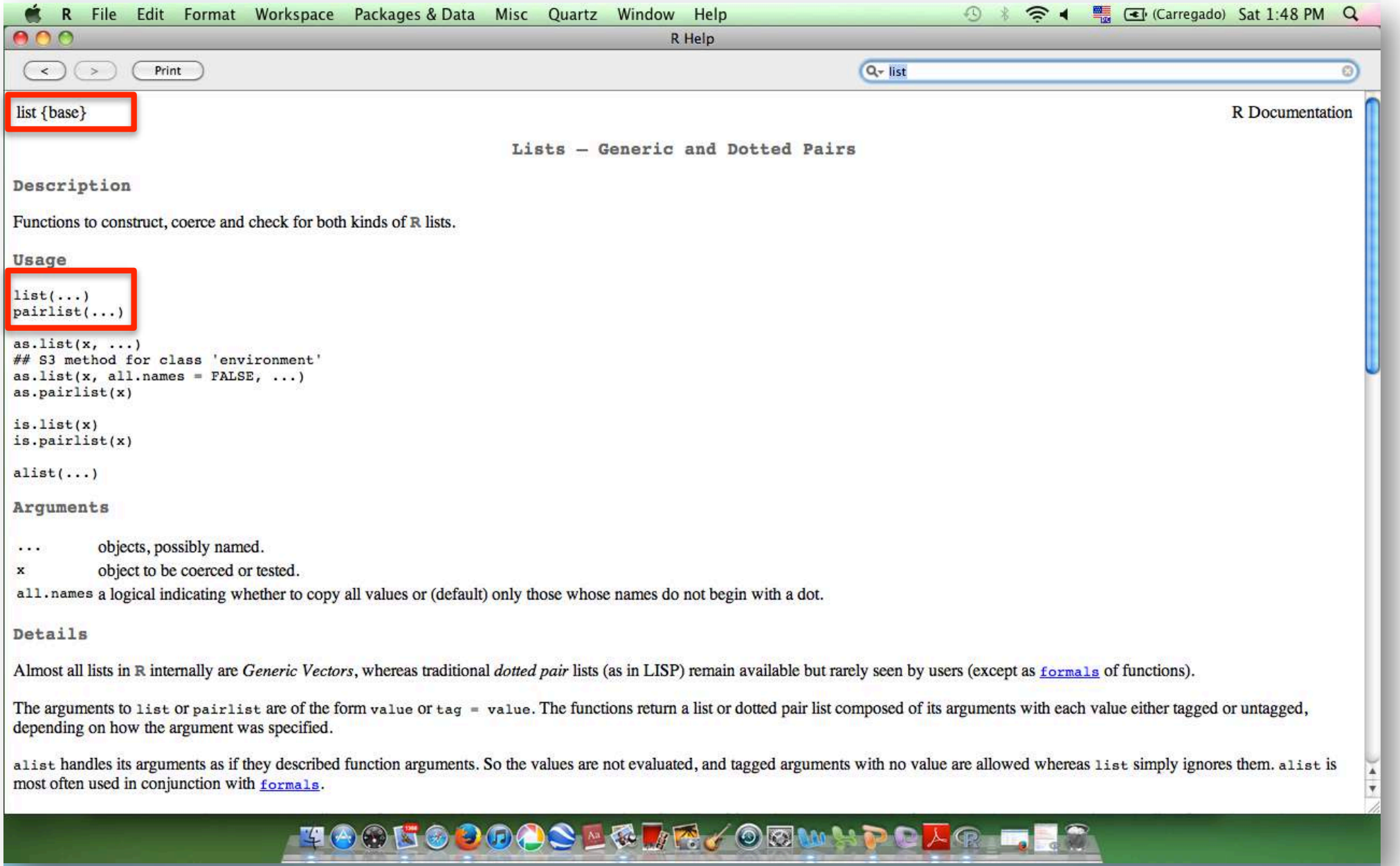

```
98
99  ######################################################
100                 # Parte 6 #
101 ##############   MODELOS    ########################
102
103 ## speedy model fitting with coarse mask
104 mmask <- make.mask(traps(ocelot1.data), buffer = 3782)
105
106 ## assumindo detecção igual entre machos e fêmeas
107 ## ajustando a razão sexual p(femeas) = 0.5 = 5 / (5 + 5)
108 fit.0 <- secr.fit(ocelot1.data, hcov="sex",timecov="blockt", mask=mmask, trace = FALSE)
109 predict(fit.0)
110
111 ## allowing sex-specific detection parameters
112 ## this leads to new estimate of sex ratio
113 ##permitindo detecção dos parâmetros especificos de sexo
114 fit.h2 <- secr.fit(ocelot1.data, hcov = "sex",timecov="blockt", mask = mmask, trace = FALSE,
115 model = list(g0 ~ h2, sigma ~ h2))
116 predict(fit.h2)
117
118 ## conditional likelihood (CL) fit of preceding model
119 ## estimate of sex ratio does not change
120 ## CL=FALSE, apresenta densidade (D)
121 fit.CL.h2 <- secr.fit(ocelot1.data, hcov = "sex",timecov="blockt", mask = mmask, trace = FALSE,
122 CL = FALSE, model = list(g0 ~ h2, sigma ~ h2))
123 predict(fit.CL.h2)
124
125 ## conditional likelihood fit of preceding model with timecovariates
126 ## estimate of sex ratio does not change
127 ## CL=FALSE, apresenta densidade (D)
128 ## Esforço influencia na função de detecção (g0 ~ h2 ~ blockt)
129 fit.TM.h2 <- secr.fit(ocelot1.data, hcov = "sex",timecov= "blockt", mask = mmask, trace = FALSE,
130 CL = FALSE, model = list(g0 ~ h2 ~ blockt, sigma ~ h2))
131 predict(fit.TM.h2)
132
133
134 ## Esforço influencia na escala espacial da funçao de detecçao (sigma ~ h2 ~ blockt)
135 fit.sig.h2 <- secr.fit(ocelot1.data, hcov = "sex",timecov= "blockt", mask = mmask, trace = FALSE,
136 CL = FALSE, model = list(g0 ~ h2 , sigma ~ h2 ~ blockt))
137 predict(fit.sig.h2)
138
139 ## Esforço influencia na função de detecção e escala espacial(g0 ~ h2 ~ blockt, sigma ~ h2 ~ blockt)
140 fit.bl.h2 <- secr.fit(ocelot1.data, hcov = "sex",timecov= "blockt", mask = mmask, trace = FALSE,
```

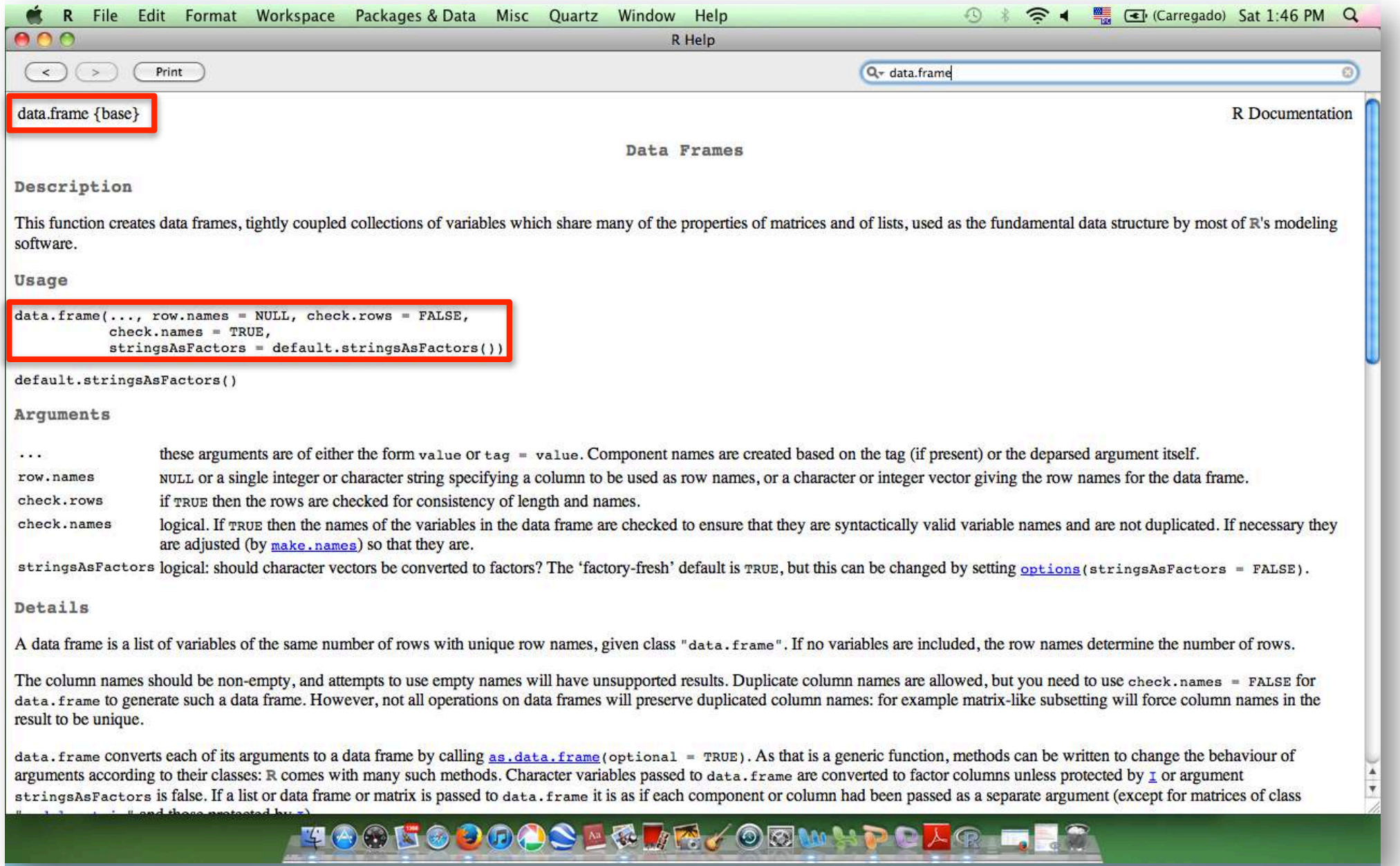
Localizar e definir o diretório de trabalho



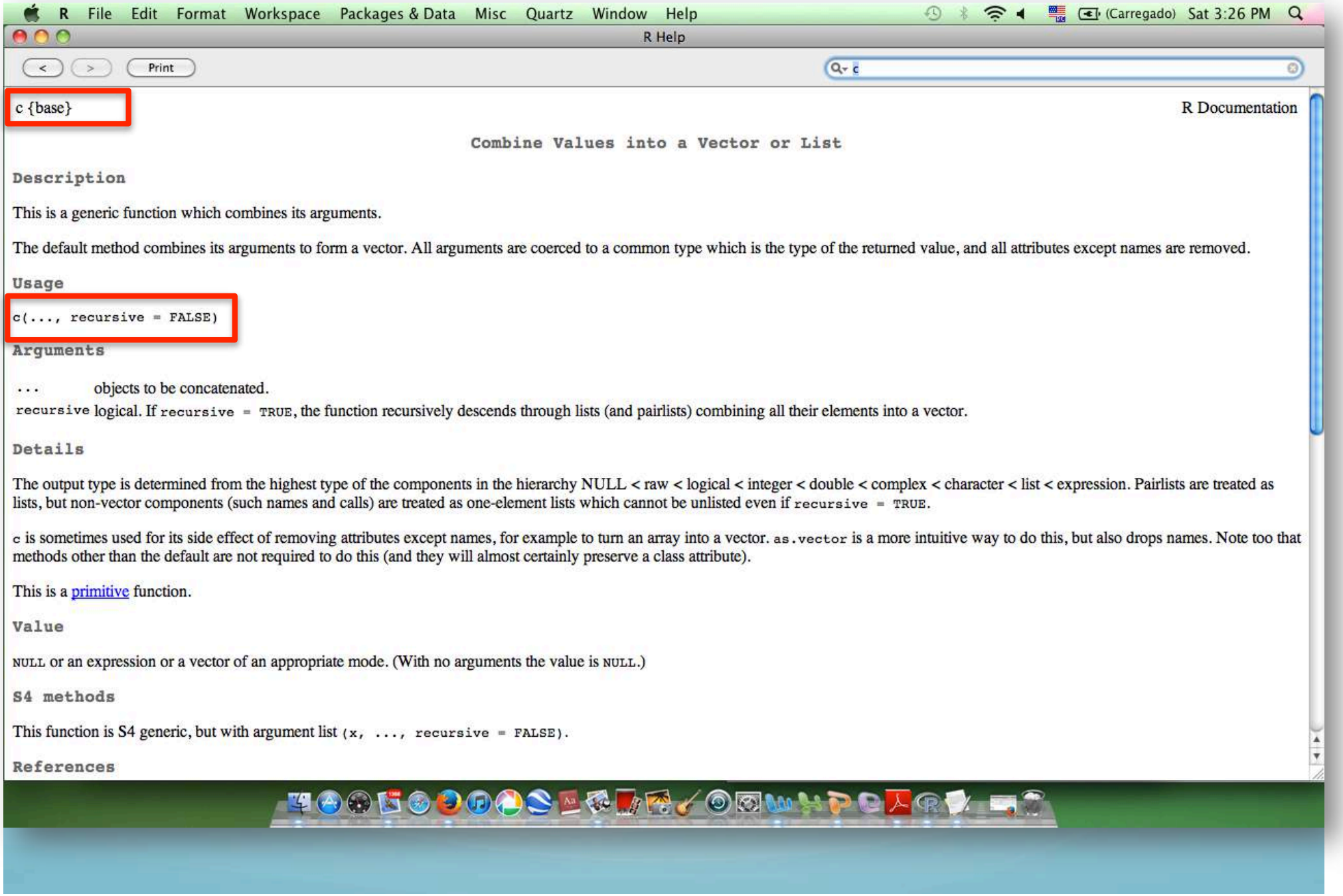

R File Edit Format Workspace Packages & Data Misc Window Help
(6:57) Sun 6:47 PM
R Help
Print
Help Search
library {base}
R Documentation
Loading and Listing of Packages
Description
library and require load add-on packages.
Usage
library(package, help, pos = 2, lib.loc = NULL,
character.only = FALSE, logical.return = FALSE,
warn.conflicts = TRUE, quietly = FALSE,
verbose = getOption("verbose"))
require(package, lib.loc = NULL, quietly = FALSE,
warn.conflicts = TRUE,
character.only = FALSE)
Arguments
package, help the name of a package, given as a name or literal character string, or a character string, depending on whether character.only is FALSE (default) or TRUE).
pos the position on the search list at which to attach the loaded package. Can also be the name of a position on the current search list as given by search().
lib.loc a character vector describing the location of R library trees to search through, or NULL. The default value of NULL corresponds to all libraries currently known to .libPaths(). Non-existent library trees are silently ignored.
character.only a logical indicating whether package or help can be assumed to be character strings.
logical.return logical. If it is TRUE, FALSE or TRUE is returned to indicate success.
warn.conflicts logical. If TRUE, warnings are printed about conflicts from attaching the new package. A conflict is a function masking a function, or a non-function masking a non-function.
verbose a logical. If TRUE, additional diagnostics are printed.
quietly a logical. If TRUE, no message confirming package loading is printed, and most often, no errors/warnings are printed if package loading fails.
Details
library(package) and require(package) both load the package with name package and put it on the search list. require is designed for use inside other functions; it returns FALSE and gives a warning (rather than an error as library() does by default) if the package does not exist. Both functions check and update the list of currently loaded packages and do not reload a package which is already loaded. (If you want to reload such a package, call detach(unload = TRUE) or unloadNamespace first.) If you want to load a package without putting it on the search list, use requireNamespace.


R File Edit Format Workspace Packages & Data Misc Quartz Window Help
(Carregado) Sat 1:47 PM
R Help
Print
matrix
matrix {base}
R Documentation
Matrices
Description
matrix creates a matrix from the given set of values.
as.matrix attempts to turn its argument into a matrix.
is.matrix tests if its argument is a (strict) matrix.
Usage
matrix(data = NA, nrow = 1, ncol = 1, byrow = FALSE,
dimnames = NULL)
as.matrix(x, ...)
S3 method for class 'data.frame'
as.matrix(x, rownames.force = NA, ...)
is.matrix(x)
Arguments
data an optional data vector (including a list or expression vector). Non-atomic classed R objects are coerced by as.vector and all attributes discarded.
nrow the desired number of rows.
ncol the desired number of columns.
byrow logical. If FALSE (the default) the matrix is filled by columns, otherwise the matrix is filled by rows.
dimnames A dimnames attribute for the matrix: NULL or a list of length 2 giving the row and column names respectively. An empty list is treated as NULL, and a list of length one as row names. The list can be named, and the list names will be used as names for the dimensions.
x an R object.
... additional arguments to be passed to or from methods.
rownames.force logical indicating if the resulting matrix should have character (rather than NULL) rownames. The default, NA, uses NULL rownames if the data frame has 'automatic' row.names or for a zero-row data frame.
Details

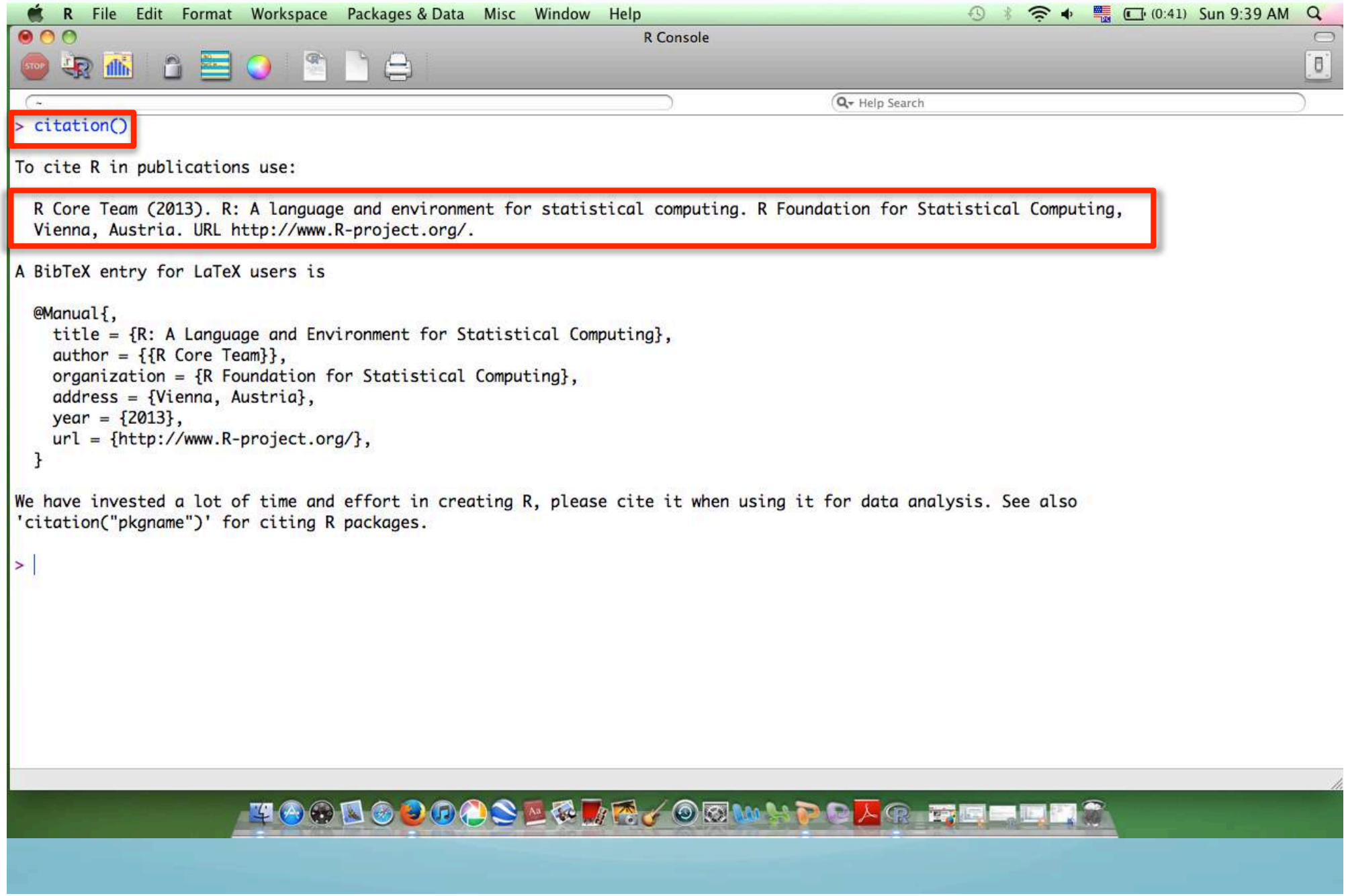

R File Edit Format Workspace Packages & Data Misc Quartz Window Help
(Carregado) Sat 1:48 PM
R Help
Print
list
list {base}
R Documentation
Lists – Generic and Dotted Pairs
Description
Functions to construct, coerce and check for both kinds of R lists.
Usage
list(...)
pairlist(...)
as.list(x, ...)
S3 method for class 'environment'
as.list(x, all.names = FALSE, ...)
as.pairlist(x)
is.list(x)
is.pairlist(x)
alist(...)
Arguments
... objects, possibly named.
x object to be coerced or tested.
all.names a logical indicating whether to copy all values or (default) only those whose names do not begin with a dot.
Details
Almost all lists in R internally are Generic Vectors, whereas traditional dotted pair lists (as in LISP) remain available but rarely seen by users (except as formals of functions).
The arguments to list or pairlist are of the form value or tag = value. The functions return a list or dotted pair list composed of its arguments with each value either tagged or untagged, depending on how the argument was specified.
alist handles its arguments as if they described function arguments. So the values are not evaluated, and tagged arguments with no value are allowed whereas list simply ignores them. alist is most often used in conjunction with formals.


R File Edit Format Workspace Packages & Data Misc Quartz Window Help
(Carregado) Sat 1:46 PM
R Help
Print
data.frame
data.frame {base}
R Documentation
Data Frames
Description
This function creates data frames, tightly coupled collections of variables which share many of the properties of matrices and of lists, used as the fundamental data structure by most of R's modeling software.
Usage
data.frame(..., row.names = NULL, check.rows = FALSE,
check.names = TRUE,
stringsAsFactors = default.stringsAsFactors())
default.stringsAsFactors()
Arguments
... these arguments are of either the form value or tag = value. Component names are created based on the tag (if present) or the deparsed argument itself.
row.names NULL or a single integer or character string specifying a column to be used as row names, or a character or integer vector giving the row names for the data frame.
check.rows if TRUE then the rows are checked for consistency of length and names.
check.names logical. If TRUE then the names of the variables in the data frame are checked to ensure that they are syntactically valid variable names and are not duplicated. If necessary they are adjusted (by make.names) so that they are.
stringsAsFactors logical: should character vectors be converted to factors? The 'factory-fresh' default is TRUE, but this can be changed by setting options(stringsAsFactors = FALSE).
Details
A data frame is a list of variables of the same number of rows with unique row names, given class "data.frame". If no variables are included, the row names determine the number of rows.
The column names should be non-empty, and attempts to use empty names will have unsupported results. Duplicate column names are allowed, but you need to use check.names = FALSE for data.frame to generate such a data frame. However, not all operations on data frames will preserve duplicated column names: for example matrix-like subsetting will force column names in the result to be unique.
data.frame converts each of its arguments to a data frame by calling as.data.frame(optional = TRUE). As that is a generic function, methods can be written to change the behaviour of arguments according to their classes: R comes with many such methods. Character variables passed to data.frame are converted to factor columns unless protected by I or argument stringsAsFactors is false. If a list or data frame or matrix is passed to data.frame it is as if each component or column had been passed as a separate argument (except for matrices of class

Concatenar para formar vetores



Como citar o R em publicações?

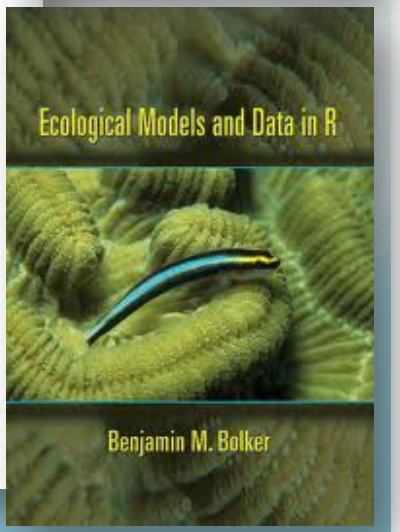


Resumo dos procedimentos gráficos no R

Predictors	Response	Plot choices
single categorical	single categorical	`table`, `barplot` , `dotchart`, `barchart` [L], `dotplot` [L]
multiple categorical	single categorical	as above, plus `mosaicplot`, small multiples (`par(mfrow)`/`par(mfcol)` or `lattice` plots), `sizeplot` [plotrix] or 3D histogram [scatterplot3d, rgl]
circular	categorical	`rose.diag` [CircStats]
circular	continuous	`polar.plot` [plotrix]
none	compositional	`barplot(...,beside=FALSE)`, `barchart(...,stack=TRUE)` [L], `ternaryplot` [vcd], `triax.plot` [plotrix]
single categorical	multiple continuous	`stars`
none or single categorical	single continuous	`boxplot`, `bwplot` [L], violin plots (`bwplot(...,panel=panel.violin)` [L], `vioplot` [vioplot], `stripplot` [L], `barplot2` [gplot] for error bars
continuous+categorical	single continuous	scatterplot (`plot` , `xyplot` [L]) with categories indicated by plotting symbols (`pch`), color (`col`), size (`cex`) or (in `lattice`) `groups` argument
single continuous	single continuous	`plot` , `xyplot` [L]; `lowess`, `supsmu`, `smooth.spline` for curves; `plotCI` [gplots or plotrix] for error bars
multiple continuous	multiple continuous	conditioning plots (`coplot` or `lattice` plots), 3D scatter- or lollipop plots (`cloud` [L], `scatterplot3d` [scatterplot3d] or `plot3d` [rgl]
continuous (time or 1D space)	continuous	`plot`/`xyplot` with `type="l"` or `type="b"`
continuous (2D space)	continuous	`image`, `contour`, `persp`, `kde2d` [MASS], `wireframe` [L], `surface3d` [rgl], `maps` package, `maptools` package, `sp` package

Table 2.1 Summary of graphical procedures. Square brackets denote functions in packages; [L] denotes functions in the `lattice` package.

McMaster University
Inspiring Innovation and Discovery



<http://ms.mcmaster.ca/~bolker/>

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Page tags

ecology

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Ecological Models and Data in R

Data Model | Data Modeling

Chitika | Opt out?

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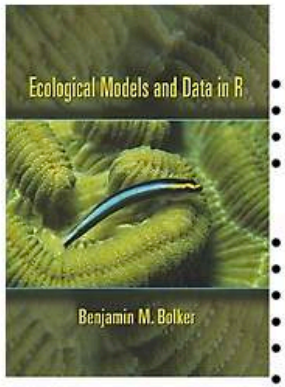
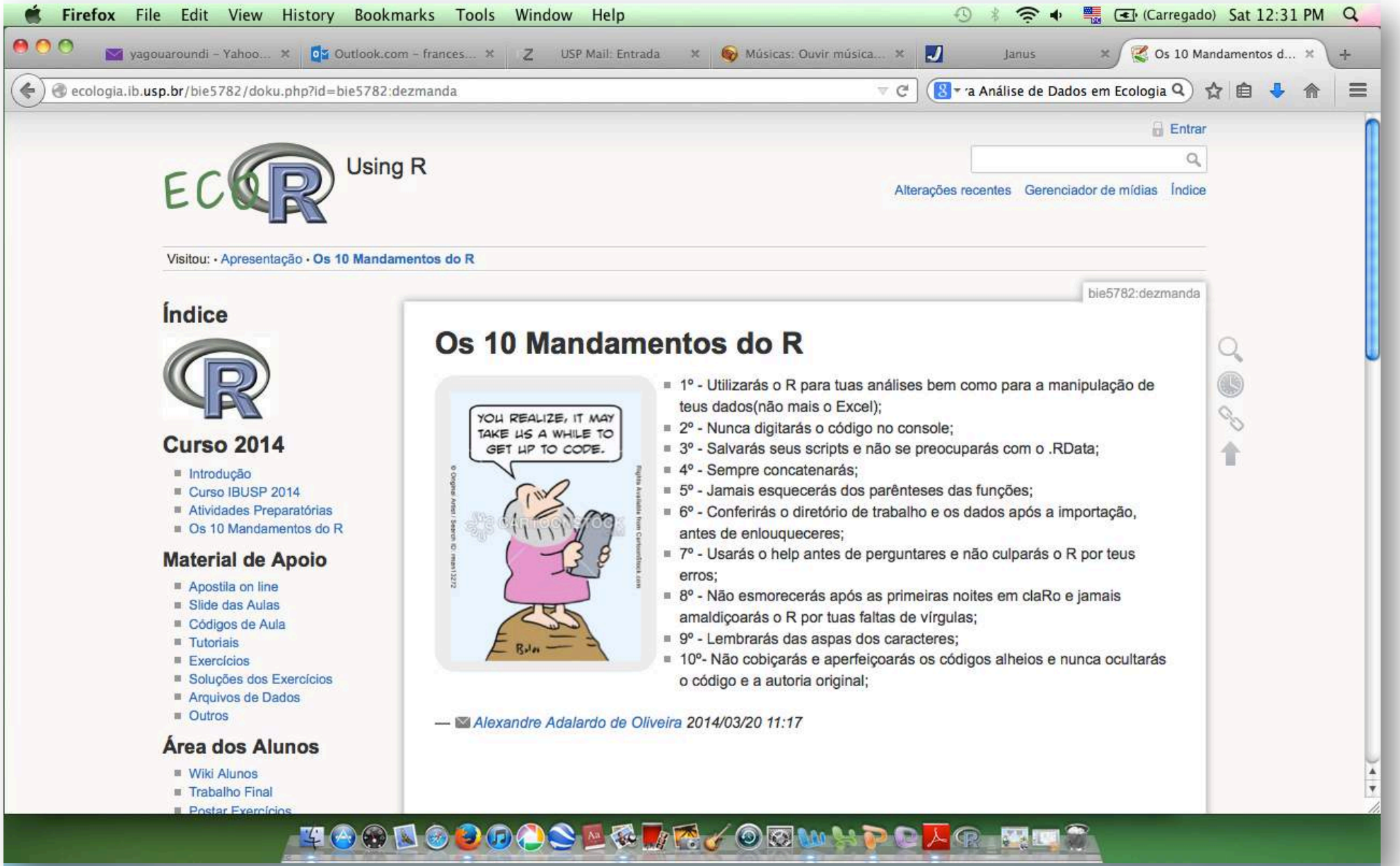


- miscellaneous thoughts (a pseudo-blog/catch-all space)
- errata (not too many I hope)
- answers to frequently asked questions
- clarifications or extensions of discussions in the book, etc.. I am starting out by posting (in the chapters section) (1) notes that I took as I went through the proofs about things I wished I'd said but didn't have room for or couldn't change (2) points that people have made in e-mail since then.
- Courses around the world offered on these topics
- Worked examples of various sorts
- To do list: things I intend to get around to
- EMD in R in the Princeton University Press catalog
- EMD in R on amazon.com
- Reviews[1]
  - Robert Gramacy in *The American Statistician*, August 2009, Vol. 63, No. 3 281 doi:10.1198/tast.2009.br633 (PDF)
  - Rachel Fewster in *Biometrics* 65, 660–673 June 2009 doi:10.1111/j.1541-0420.2009.01247_11.x (PDF)
  - Daniel Bunker in *Ecology*, 90(8), 2009, pp. 2333–2334 (PDF)
  - Carsten Dormann in *Basic and Applied Ecology* 10 (2009) 487, doi:10.1016/j.baae.2009.01.001 (PDF)
  - Matthew Aiello-Lammens in *Quarterly Review of Biology*, 84, 288 (2009), doi:10.1086/644667 (PDF)
  - Pavle Mladenović in MathSciNet reviews
  - B. Hanowell's Evolutionary Modeling Survival Kit blog entry says:

<http://emdbolker.wikidot.com/>



<http://ecologia.ib.usp.br/bie5782/doku.php?id=bie5782:dezmanda>