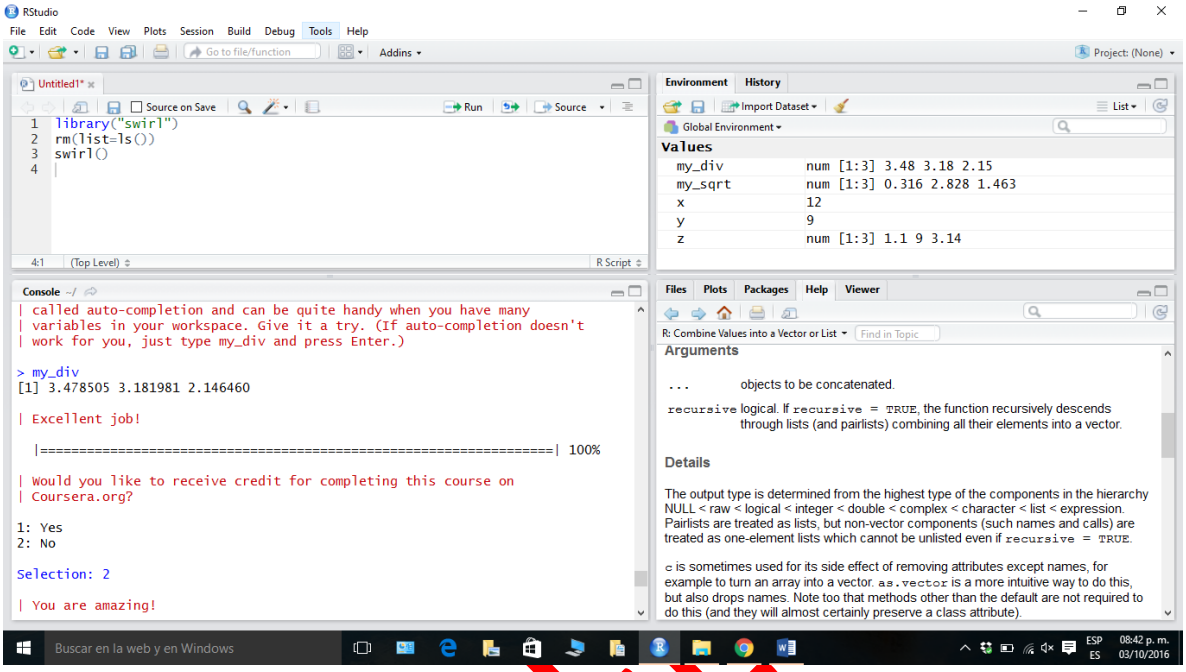
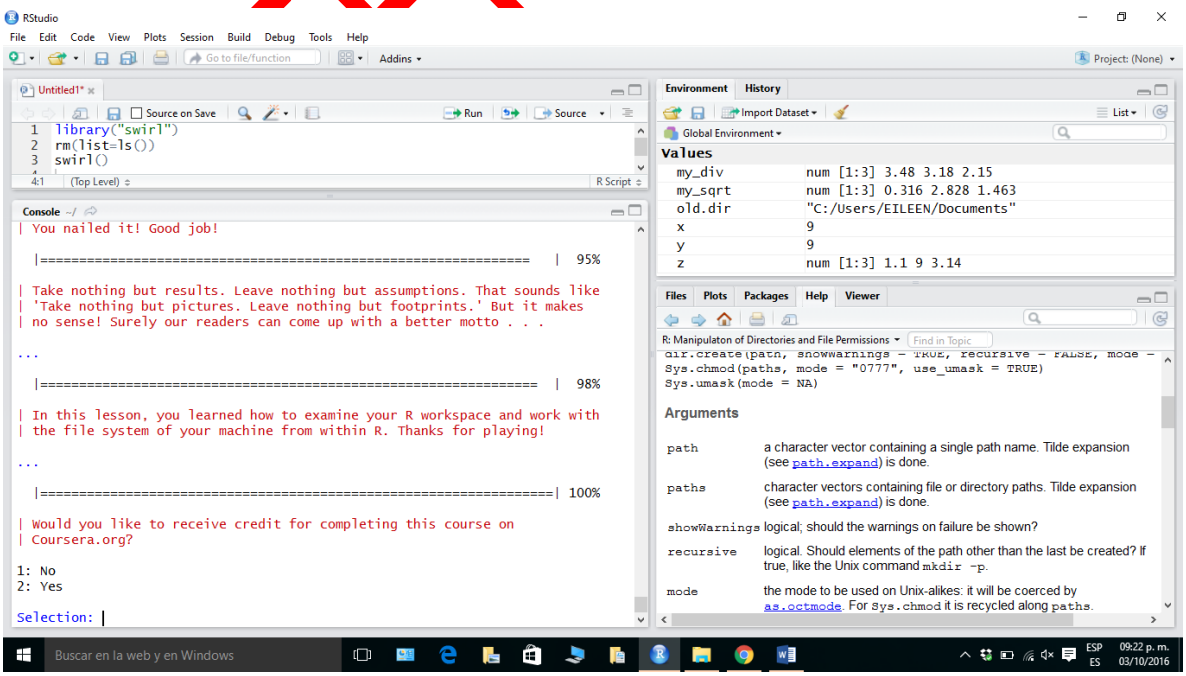
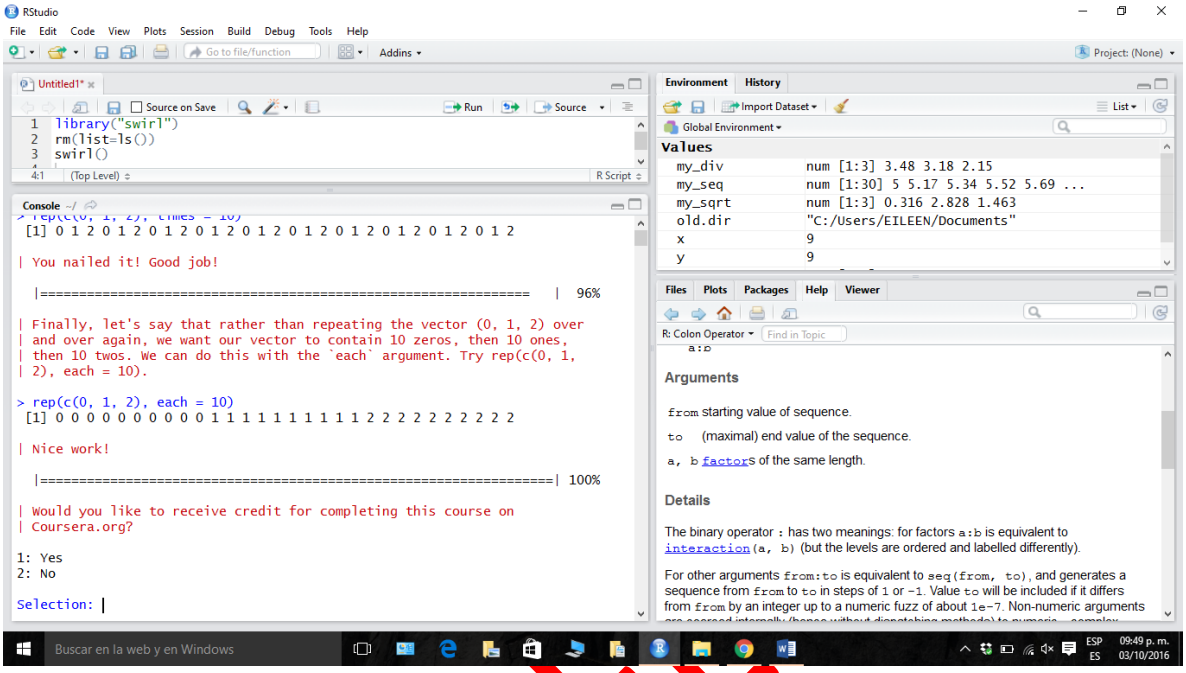
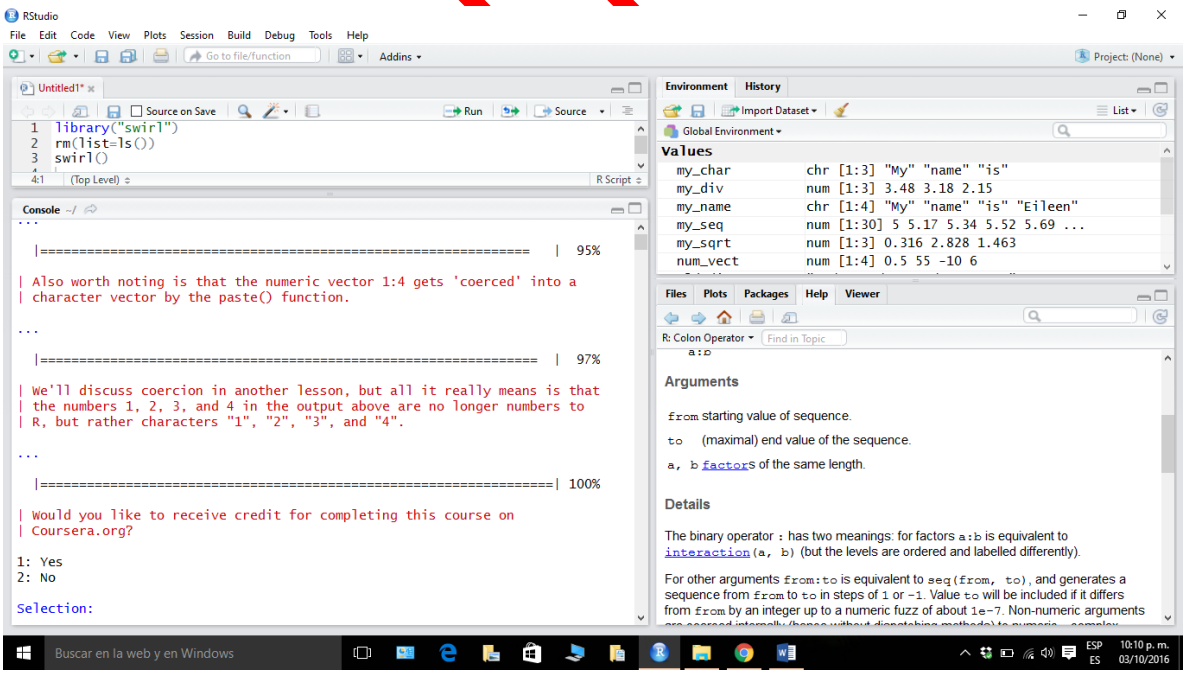
Lección 1


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
Environment History
Values
my_div num [1:3] 3.48 3.18 2.15
my_sqrt num [1:3] 0.316 2.828 1.463
x 12
y 9
z num [1:3] 1.1 9 3.14
Console
| called auto-completion and can be quite handy when you have many
| variables in your workspace. Give it a try. (If auto-completion doesn't
| work for you, just type my_div and press Enter.)
> my_div
[1] 3.478505 3.181981 2.146460
| Excellent job!
| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection: 2
| You are amazing!
Files Plots Packages Help Viewer
Arguments
... objects to be concatenated.
recursive logical. If recursive = TRUE, the function recursively descends through lists (and pairlists) combining all their elements into a vector.
Details
The output type is determined from the highest type of the components in the hierarchy NULL < raw < logical < integer < double < complex < character < list < expression. Pairlists are treated as lists, but non-vector components (such names and calls) are treated as one-element lists which cannot be unlisted even if recursive = TRUE.
c is sometimes used for its side effect of removing attributes except names, for example to turn an array into a vector. as.vector is a more intuitive way to do this, but also drops names. Note too that methods other than the default are not required to do this (and they will almost certainly preserve a class attribute).
Buscar en la web y en Windows
ESP ES 08:42 p. m. 03/10/2016

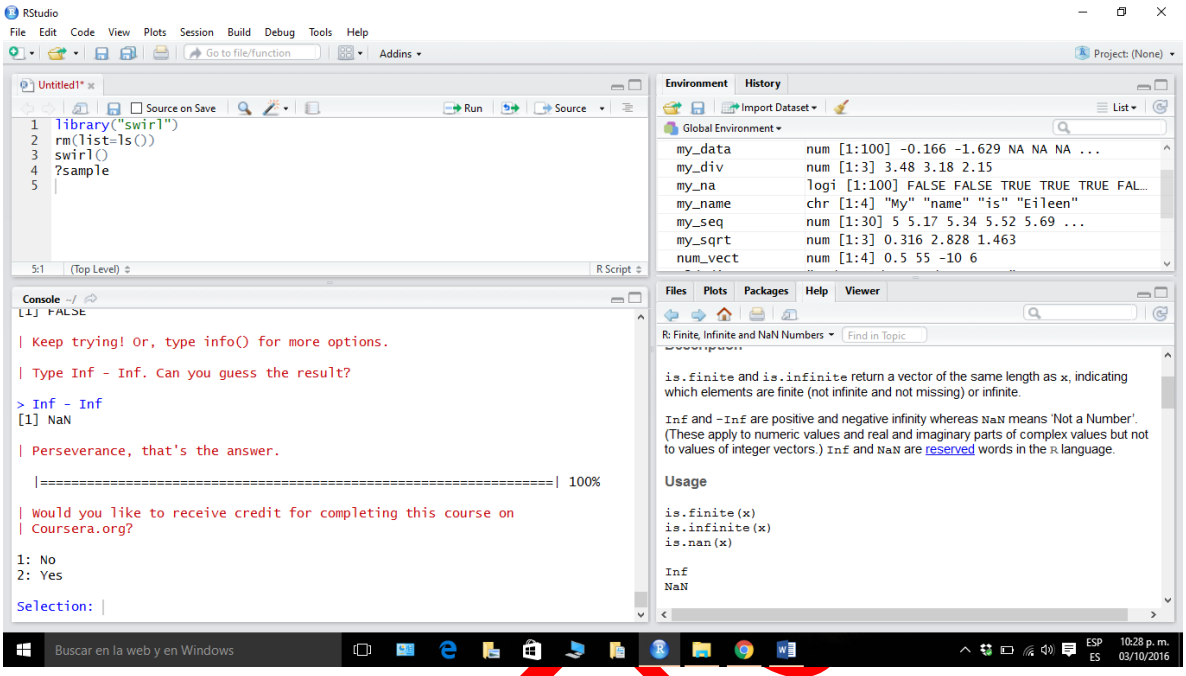

RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
Environment History
Values
my_div num [1:3] 3.48 3.18 2.15
my_sqrt num [1:3] 0.316 2.828 1.463
old.dir "C:/Users/EILEEN/Documents"
x 9
y 9
z num [1:3] 1.1 9 3.14
Console
| You nailed it! Good job!
| 95%
| Take nothing but results. Leave nothing but assumptions. That sounds like
| 'Take nothing but pictures. Leave nothing but footprints.' But it makes
| no sense! Surely our readers can come up with a better motto . . .
...
| 98%
| In this lesson, you learned how to examine your R workspace and work with
| the file system of your machine from within R. Thanks for playing!
...
| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: No
2: Yes
Selection:
Files Plots Packages Help Viewer
Sys.chmod(paths, mode = "0777", use_umask = TRUE)
Sys.umask(mode = NA)
Arguments
path a character vector containing a single path name. Tilde expansion (see path.expand) is done.
paths character vectors containing file or directory paths. Tilde expansion (see path.expand) is done.
showWarnings logical; should the warnings on failure be shown?
recursive logical. Should elements of the path other than the last be created? If true, like the Unix command mkdir -p.
mode the mode to be used on Unix-alikes: it will be coerced by as.octmode. For Sys.chmod it is recycled along paths.
Buscar en la web y en Windows
ESP ES 09:22 p. m. 03/10/2016

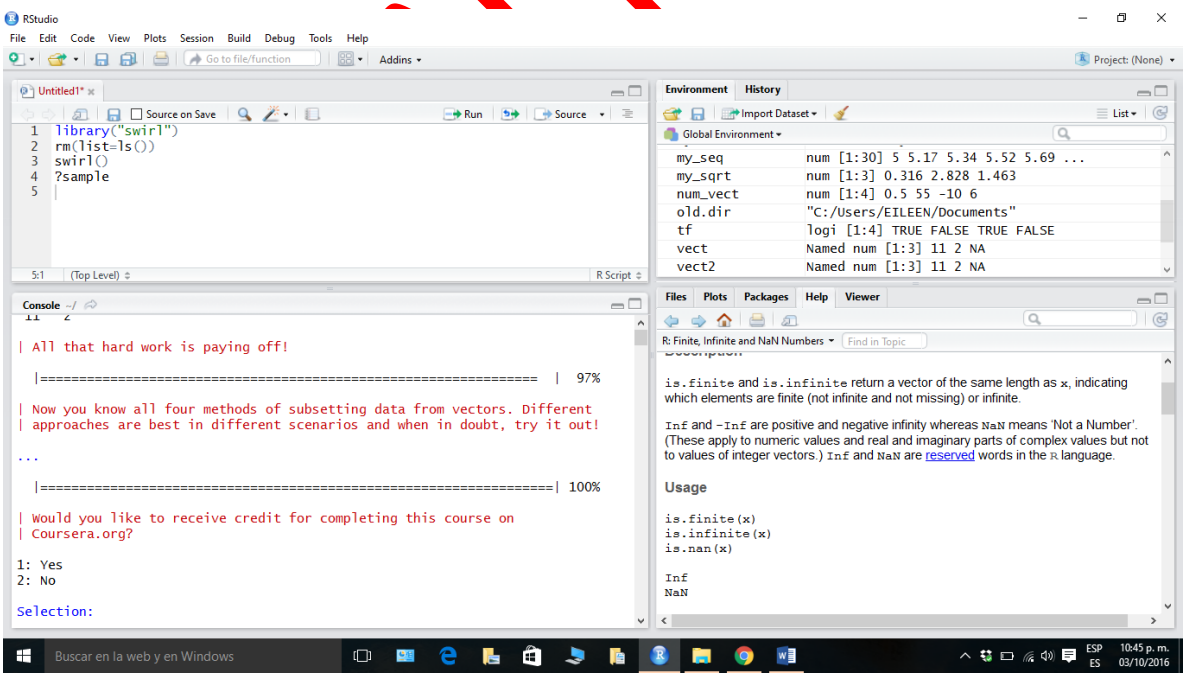
Lección 2


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
Console
[1] 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2
| You nailed it! Good job!
| Finally, let's say that rather than repeating the vector (0, 1, 2) over
| and over again, we want our vector to contain 10 zeros, then 10 ones,
| then 10 twos. We can do this with the `each` argument. Try rep(c(0, 1,
| 2), each = 10).
> rep(c(0, 1, 2), each = 10)
[1] 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2
| Nice work!
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Environment History
Values
my_div num [1:3] 3.48 3.18 2.15
my_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...
my_sqrt num [1:3] 0.316 2.828 1.463
old.dir "C:/Users/EILEEN/Documents"
x 9
y 9
Files Plots Packages Help Viewer
Arguments
from starting value of sequence.
to (maximal) end value of the sequence.
a, b factors of the same length.
Details
The binary operator : has two meanings: for factors a:b is equivalent to interaction(a, b) (but the levels are ordered and labelled differently).
For other arguments from:to is equivalent to seq(from, to), and generates a sequence from from to to in steps of 1 or -1. Value to will be included if it differs from from by an integer up to a numeric fuzz of about 1e-7. Non-numeric arguments

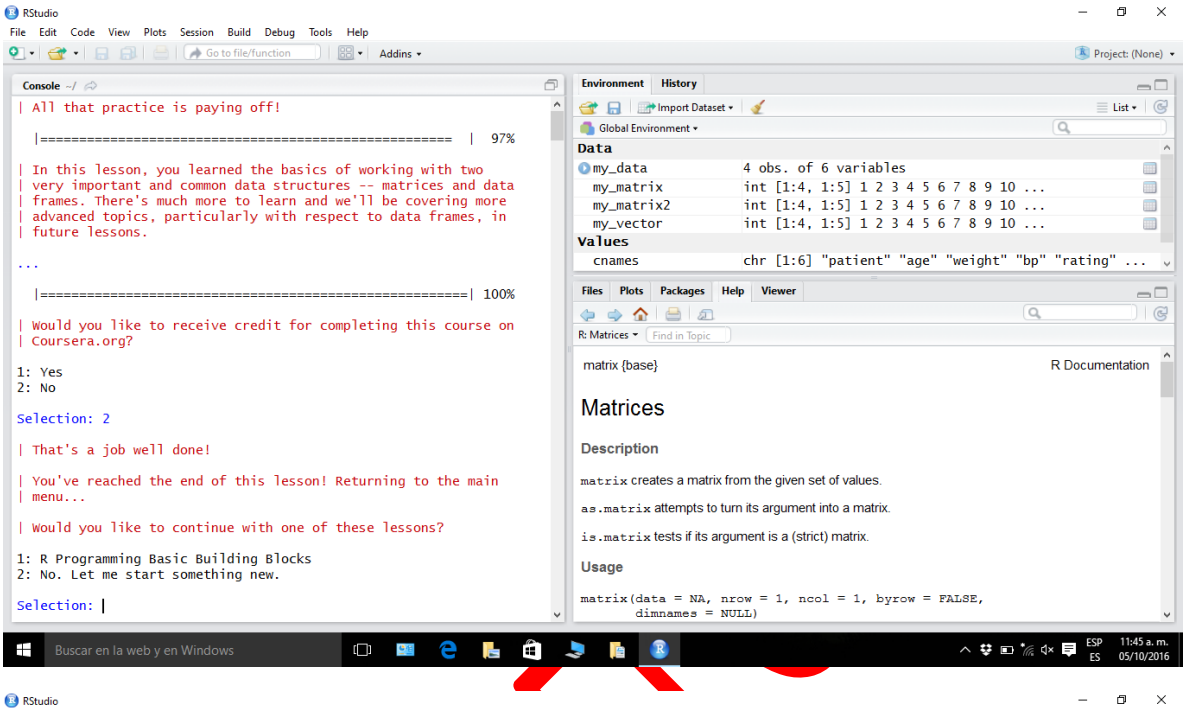

RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
Console
| Also worth noting is that the numeric vector 1:4 gets 'coerced' into a
| character vector by the paste() function.
| We'll discuss coercion in another lesson, but all it really means is that
| the numbers 1, 2, 3, and 4 in the output above are no longer numbers to
| R, but rather characters "1", "2", "3", and "4".
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Environment History
Values
my_char chr [1:3] "My" "name" "is"
my_div num [1:3] 3.48 3.18 2.15
my_name chr [1:4] "My" "name" "is" "Eileen"
my_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...
my_sqrt num [1:3] 0.316 2.828 1.463
num_vect num [1:4] 0.5 55 -10 6
Files Plots Packages Help Viewer
Arguments
from starting value of sequence.
to (maximal) end value of the sequence.
a, b factors of the same length.
Details
The binary operator : has two meanings: for factors a:b is equivalent to interaction(a, b) (but the levels are ordered and labelled differently).
For other arguments from:to is equivalent to seq(from, to), and generates a sequence from from to to in steps of 1 or -1. Value to will be included if it differs from from by an integer up to a numeric fuzz of about 1e-7. Non-numeric arguments

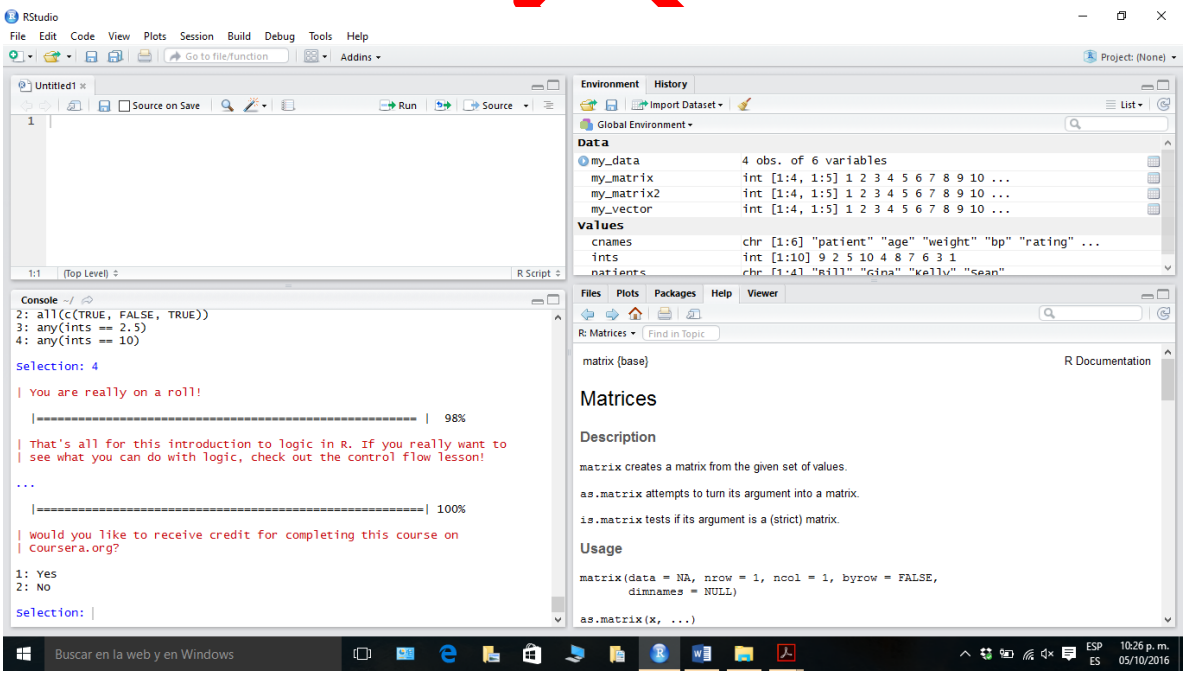
Lección 3


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
4 ?sample
5
Environment History
my_data num [1:100] -0.166 -1.629 NA NA NA ...
my_div num [1:3] 3.48 3.18 2.15
my_na logi [1:100] FALSE FALSE TRUE TRUE TRUE FAL...
my_name chr [1:4] "My" "name" "is" "Eileen"
my_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...
my_sqrt num [1:3] 0.316 2.828 1.463
num_vect num [1:4] 0.5 55 -10 6
Console
| Keep trying! Or, type info() for more options.
| Type Inf - Inf. Can you guess the result?
> Inf - Inf
[1] NaN
| Perseverance, that's the answer.
| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: No
2: Yes
Selection:
Files Plots Packages Help Viewer
is.finite and is.infinite return a vector of the same length as x, indicating which elements are finite (not infinite and not missing) or infinite.
Inf and -Inf are positive and negative infinity whereas NaN means 'Not a Number'. (These apply to numeric values and real and imaginary parts of complex values but not to values of integer vectors.) Inf and NaN are reserved words in the R language.
Usage
is.finite(x)
is.infinite(x)
is.nan(x)
Inf
NaN
Buscar en la web y en Windows
ESP ES
10:28 p. m. 03/10/2016

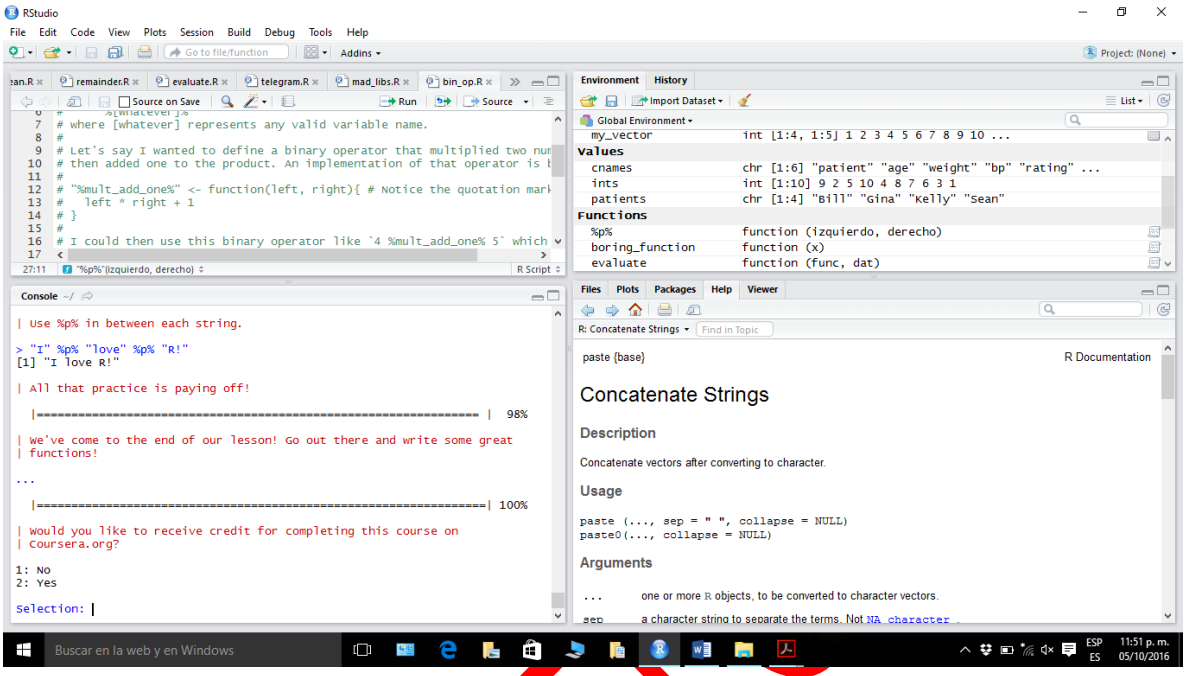

RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1*
1 library("swirl")
2 rm(list=ls())
3 swirl()
4 ?sample
5
Environment History
my_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...
my_sqrt num [1:3] 0.316 2.828 1.463
num_vect num [1:4] 0.5 55 -10 6
old.dir "C:/Users/EILEEN/Documents"
tf logi [1:4] TRUE FALSE TRUE FALSE
vect Named num [1:3] 11 2 NA
vect2 Named num [1:3] 11 2 NA
Console
| All that hard work is paying off!
| 97%
| Now you know all four methods of subsetting data from vectors. Different
| approaches are best in different scenarios and when in doubt, try it out!
...
| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Files Plots Packages Help Viewer
is.finite and is.infinite return a vector of the same length as x, indicating which elements are finite (not infinite and not missing) or infinite.
Inf and -Inf are positive and negative infinity whereas NaN means 'Not a Number'. (These apply to numeric values and real and imaginary parts of complex values but not to values of integer vectors.) Inf and NaN are reserved words in the R language.
Usage
is.finite(x)
is.infinite(x)
is.nan(x)
Inf
NaN
Buscar en la web y en Windows
ESP ES
10:45 p. m. 03/10/2016

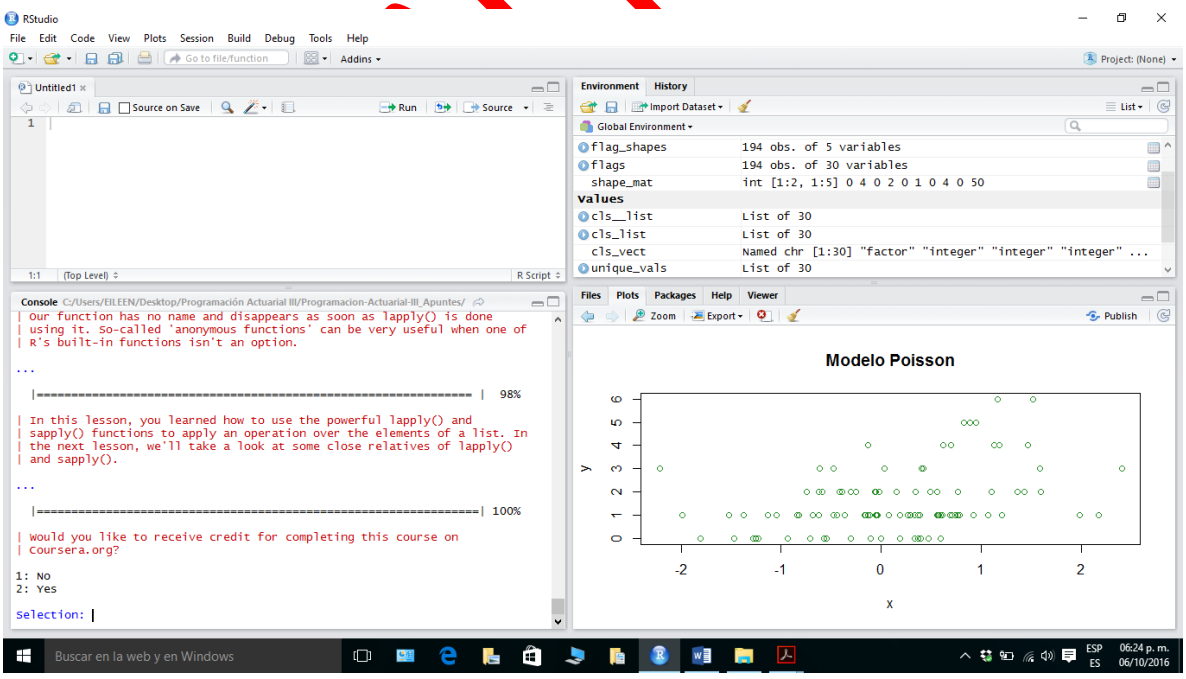
Lección 4


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Console ~/
| All that practice is paying off!
|========== | 97%
| In this lesson, you learned the basics of working with two
| very important and common data structures -- matrices and data
| frames. There's much more to learn and we'll be covering more
| advanced topics, particularly with respect to data frames, in
| future lessons.
...
|==========| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection: 2
| That's a job well done!
| You've reached the end of this lesson! Returning to the main
| menu...
| Would you like to continue with one of these lessons?
1: R Programming Basic Building Blocks
2: No. Let me start something new.
Selection:
Environment History
Import Dataset
Global Environment
Data
my_data 4 obs. of 6 variables
my_matrix int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
my_matrix2 int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
my_vector int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
Values
cnames chr [1:6] "patient" "age" "weight" "bp" "rating" ...
Files Plots Packages Help Viewer
R: Matrices
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)
Buscar en la web y en Windows
ESP ES
11:45 a. m. 05/10/2016

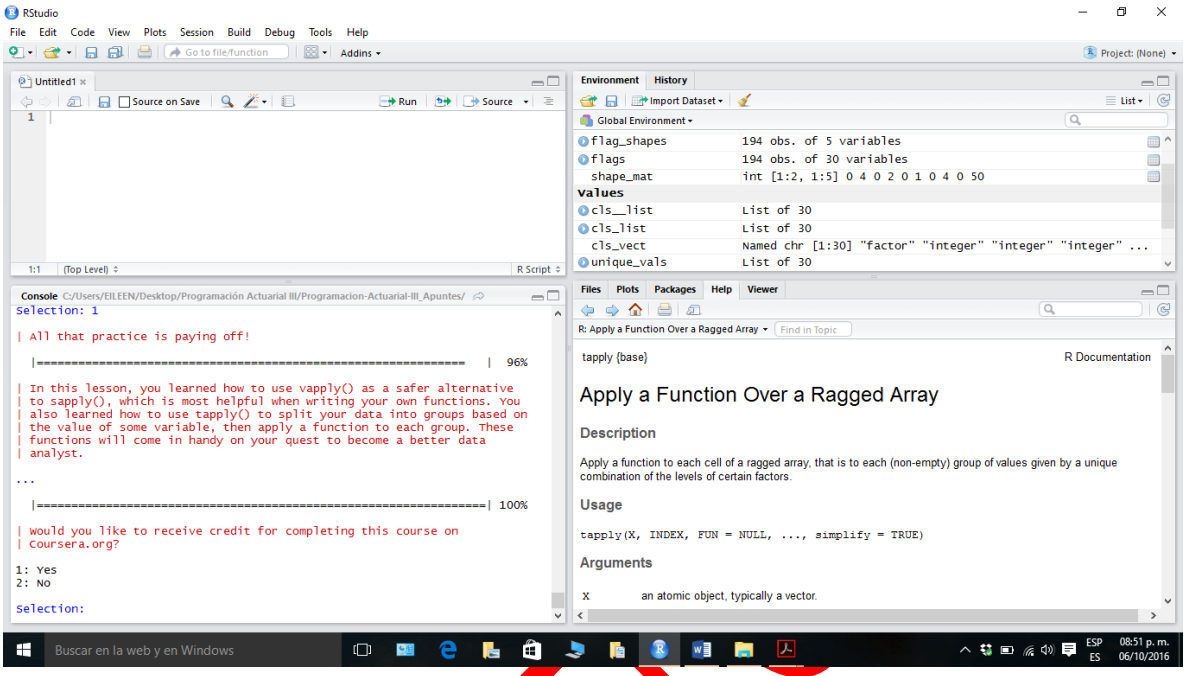

RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1
Source on Save
Run
Source
1
Console ~/
2: all(c(TRUE, FALSE, TRUE))
3: any(ints == 2.5)
4: any(ints == 10)
Selection: 4
| You are really on a roll!
|========== | 98%
| That's all for this introduction to logic in R. If you really want to
| see what you can do with logic, check out the control flow lesson!
...
|==========| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Environment History
Import Dataset
Global Environment
Data
my_data 4 obs. of 6 variables
my_matrix int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
my_matrix2 int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
my_vector int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
Values
cnames chr [1:6] "patient" "age" "weight" "bp" "rating" ...
ints int [1:10] 9 2 5 10 4 8 7 6 3 1
Files Plots Packages Help Viewer
R: Matrices
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, ...)
Buscar en la web y en Windows
ESP ES
10:26 p. m. 05/10/2016

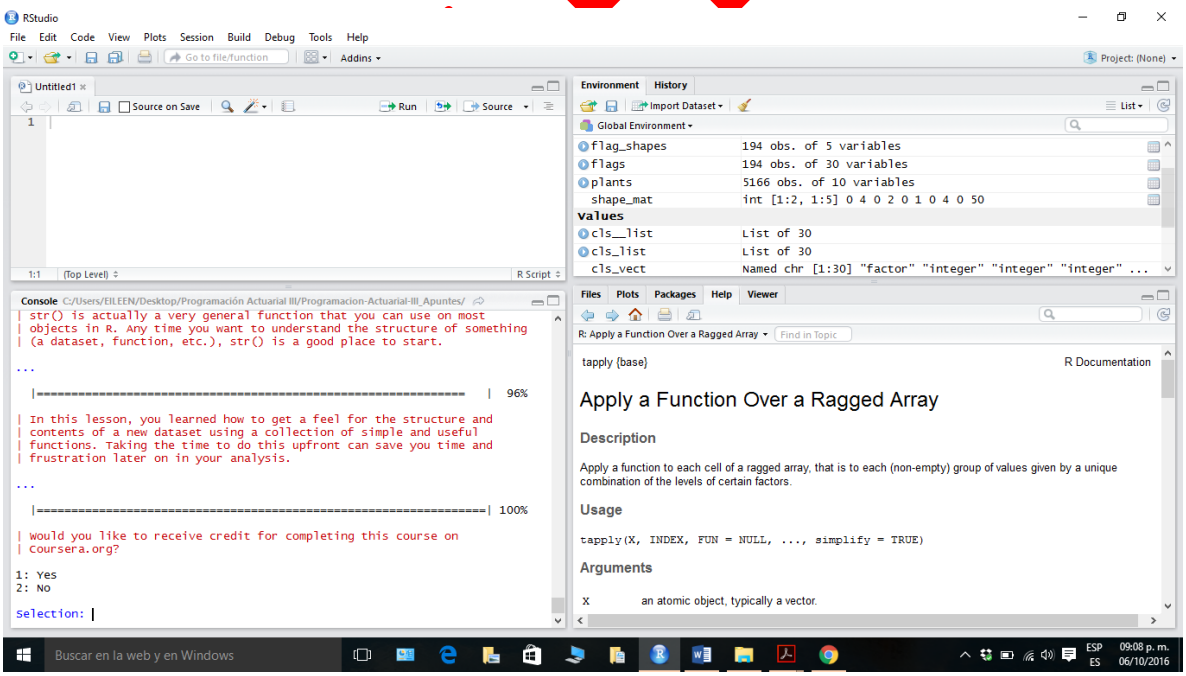
Lección 5


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Addins
Project: (None)
remainder.R evaluate.R telegram.R mad_libs.R bin_op.R
Source on Save
Run
Source
where [whatever] represents any valid variable name.
Let's say I wanted to define a binary operator that multiplied two nu
then added one to the product. An implementation of that operator is
"%mult_add_one%" <- function(left, right){ # Notice the quotation mar
left * right + 1
}
I could then use this binary operator like `4 %mult_add_one% 5` which
"%p%"(izquierdo, derecho)
R Script
Console ~/
| Use %p% in between each string.
> "I" %p% "love" %p% "R!"
[1] "I love R!"
| All that practice is paying off!
98%
| We've come to the end of our lesson! Go out there and write some great
| functions!
100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: No
2: Yes
Selection:
Environment History
Import Dataset
List
Global Environment
my_vector int [1:4, 1:5] 1 2 3 4 5 6 7 8 9 10 ...
Values
cnames chr [1:6] "patient" "age" "weight" "bp" "rating" ...
ints int [1:10] 9 2 5 10 4 8 7 6 3 1
patients chr [1:4] "Bill" "Gina" "Kelly" "Sean"
Functions
%p% function (izquierdo, derecho)
boring_function function (x)
evaluate function (func, dat)
Files Plots Packages Help Viewer
R: Concatenate Strings
Find in Topic
paste {base}
R Documentation
Concatenate Strings
Description
Concatenate vectors after converting to character.
Usage
paste (..., sep = " ", collapse = NULL)
paste0(..., collapse = NULL)
Arguments
... one or more R objects, to be converted to character vectors.
sep a character string to separate the terms. Not NA_character_.
Buscar en la web y en Windows
ESP ES
11:51 p. m.
05/10/2016

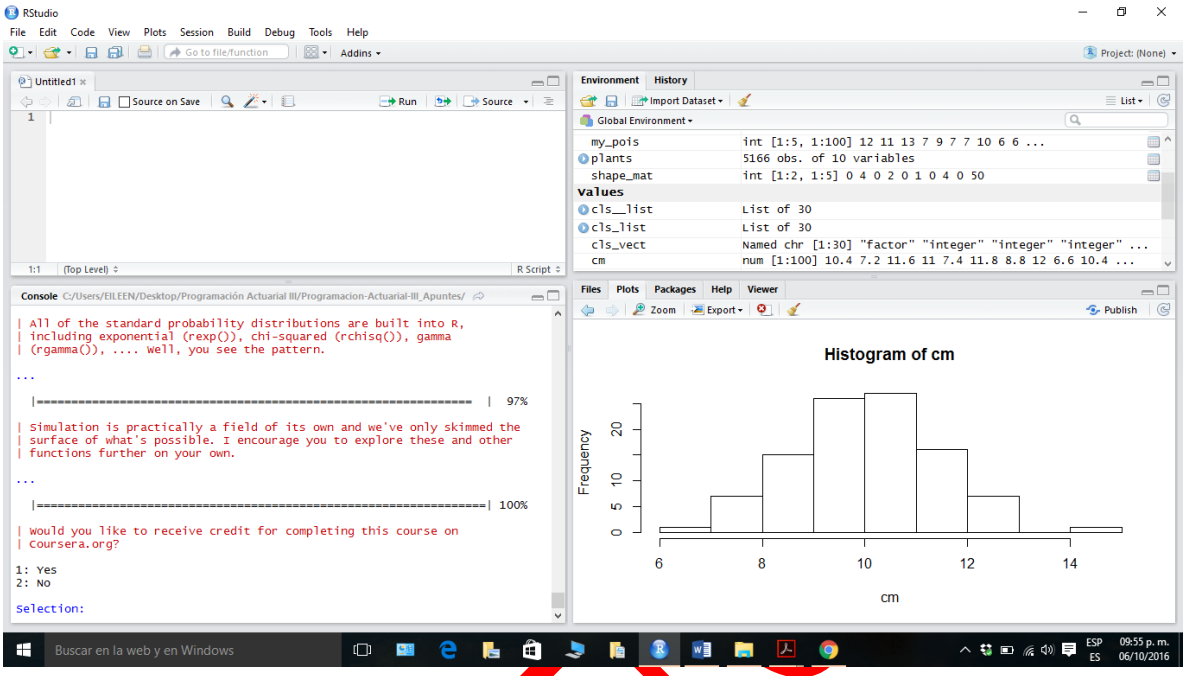

RStudio
File Edit Code View Plots Session Build Debug Tools Help
Addins
Project: (None)
Untitled1
Source on Save
Run
Source
1:1
(Top Level)
R Script
Console C:/Users/EILEEN/Desktop/Programación Actuarial III/Programacion-Actuarial-III_Apuntes/
| Our function has no name and disappears as soon as lapply() is done
| using it. So-called 'anonymous functions' can be very useful when one of
| R's built-in functions isn't an option.
98%
| In this lesson, you learned how to use the powerful lapply() and
| sapply() functions to apply an operation over the elements of a list. In
| the next lesson, we'll take a look at some close relatives of lapply()
| and sapply().
100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: No
2: Yes
Selection:
Environment History
Import Dataset
List
Global Environment
flag_shapes 194 obs. of 5 variables
flags 194 obs. of 30 variables
shape_mat int [1:2, 1:5] 0 4 0 2 0 1 0 4 0 50
Values
cls__list List of 30
cls_list List of 30
cls_vect Named chr [1:30] "factor" "integer" "integer" "integer" ...
unique_vals List of 30
Files Plots Packages Help Viewer
Zoom
Export
Publish
Modelo Poisson
y
x
0
1
2
3
4
5
6
-2
-1
0
1
2
Buscar en la web y en Windows
ESP ES
06:24 p. m.
06/10/2016

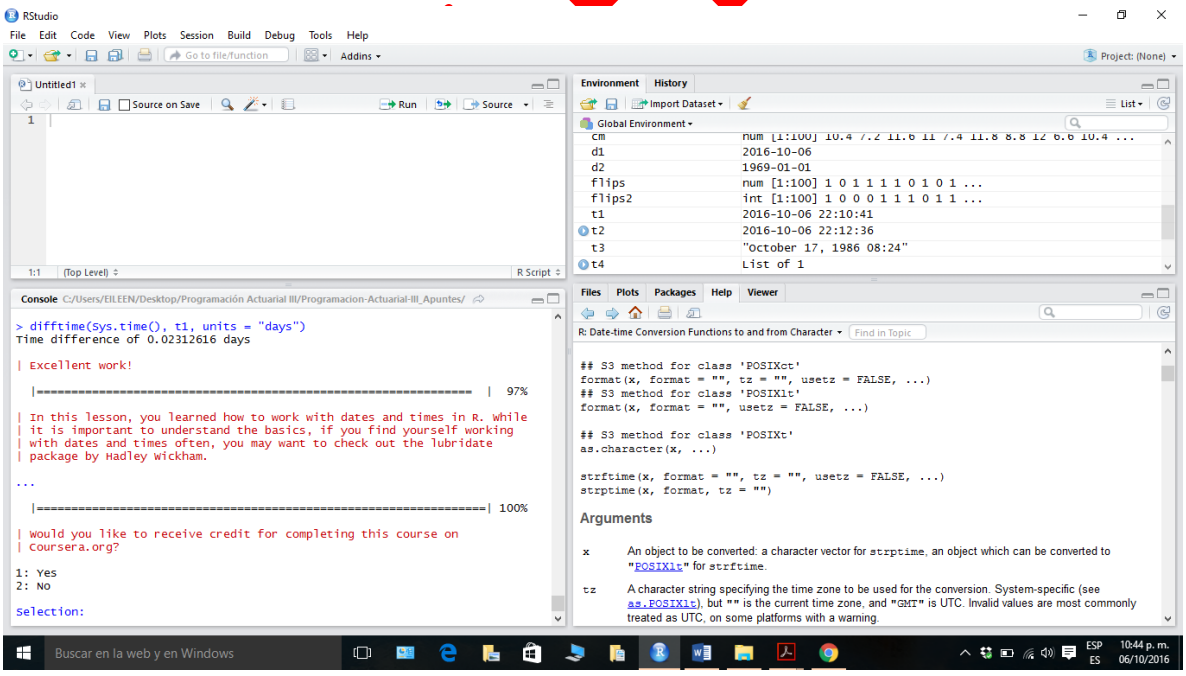
Lección 6


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1
Source on Save
Run
Source
1:1 (Top Level)
R Script
Console C:/Users/EILEEN/Desktop/Programación Actuarial III/Programacion-Actuarial-III_Apuntes/
Selection: 1
| All that practice is paying off!
|==| 96%
| In this lesson, you learned how to use vapply() as a safer alternative
| to sapply(), which is most helpful when writing your own functions. You
| also learned how to use tapply() to split your data into groups based on
| the value of some variable, then apply a function to each group. These
| functions will come in handy on your quest to become a better data
| analyst.
...
|==| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Environment History
Import Dataset
Global Environment
flag_shapes 194 obs. of 5 variables
flags 194 obs. of 30 variables
shape_mat int [1:2, 1:5] 0 4 0 2 0 1 0 4 0 50
values
cls__list List of 30
cls_list List of 30
cls_vect Named chr [1:30] "factor" "integer" "integer" "integer" ...
unique_vals List of 30
Files Plots Packages Help Viewer
R: Apply a Function Over a Ragged Array
Find in Topic
tapply {base} R Documentation
Apply a Function Over a Ragged Array
Description
Apply a function to each cell of a ragged array, that is to each (non-empty) group of values given by a unique combination of the levels of certain factors.
Usage
tapply(X, INDEX, FUN = NULL, ..., simplify = TRUE)
Arguments
X an atomic object, typically a vector.
Buscar en la web y en Windows
ESP ES
08:51 p. m. 06/10/2016


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1
Source on Save
Run
Source
1:1 (Top Level)
R Script
Console C:/Users/EILEEN/Desktop/Programación Actuarial III/Programacion-Actuarial-III_Apuntes/
| str() is actually a very general function that you can use on most
| objects in R. Any time you want to understand the structure of something
| (a dataset, function, etc.), str() is a good place to start.
...
|==| 96%
| In this lesson, you learned how to get a feel for the structure and
| contents of a new dataset using a collection of simple and useful
| functions. Taking the time to do this upfront can save you time and
| frustration later on in your analysis.
...
|==| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Environment History
Import Dataset
Global Environment
flag_shapes 194 obs. of 5 variables
flags 194 obs. of 30 variables
plants 5166 obs. of 10 variables
shape_mat int [1:2, 1:5] 0 4 0 2 0 1 0 4 0 50
values
cls__list List of 30
cls_list List of 30
cls_vect Named chr [1:30] "factor" "integer" "integer" "integer" ...
Files Plots Packages Help Viewer
R: Apply a Function Over a Ragged Array
Find in Topic
tapply {base} R Documentation
Apply a Function Over a Ragged Array
Description
Apply a function to each cell of a ragged array, that is to each (non-empty) group of values given by a unique combination of the levels of certain factors.
Usage
tapply(X, INDEX, FUN = NULL, ..., simplify = TRUE)
Arguments
X an atomic object, typically a vector.
Buscar en la web y en Windows
ESP ES
09:08 p. m. 06/10/2016

Lección 7


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1
Source on Save
Run
Source
Environment
History
Import Dataset
Global Environment
my_pois int [1:5, 1:100] 12 11 13 7 9 7 7 10 6 6 ...
plants 5166 obs. of 10 variables
shape_mat int [1:2, 1:5] 0 4 0 2 0 1 0 4 0 50
values
cls__list List of 30
cls_list List of 30
cls_vect Named chr [1:30] "factor" "integer" "integer" "integer" ...
cm num [1:100] 10.4 7.2 11.6 11 7.4 11.8 8.8 12 6.6 10.4 ...
Console C:/Users/EILEEN/Desktop/Programación Actuarial III/Programacion-Actuarial-III_Apuntes/
| All of the standard probability distributions are built into R,
| including exponential (rexp()), chi-squared (rchisq()), gamma
| (rgamma()), ... Well, you see the pattern.
...
|==| 97%
| Simulation is practically a field of its own and we've only skimmed the
| surface of what's possible. I encourage you to explore these and other
| functions further on your own.
...
|==| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Files Plots Packages Help Viewer
Zoom Export Publish
Histogram of cm
Frequency
0 5 10 20
6 8 10 12 14
cm
Buscar en la web y en Windows
ESP ES
09:55 p. m. 06/10/2016


RStudio
File Edit Code View Plots Session Build Debug Tools Help
Untitled1
Source on Save
Run
Source
Environment
History
Import Dataset
Global Environment
cm num [1:100] 10.4 7.2 11.6 11 7.4 11.8 8.8 12 6.6 10.4 ...
d1 2016-10-06
d2 1969-01-01
flips num [1:100] 1 0 1 1 1 1 0 1 0 1 ...
flips2 int [1:100] 1 0 0 0 1 1 1 0 1 1 ...
t1 2016-10-06 22:10:41
t2 2016-10-06 22:12:36
t3 "october 17, 1986 08:24"
t4 List of 1
Console C:/Users/EILEEN/Desktop/Programación Actuarial III/Programacion-Actuarial-III_Apuntes/
> difftime(Sys.time(), t1, units = "days")
Time difference of 0.02312616 days
| Excellent work!
|==| 97%
| In this lesson, you learned how to work with dates and times in R. While
| it is important to understand the basics, if you find yourself working
| with dates and times often, you may want to check out the lubridate
| package by Hadley Wickham.
...
|==| 100%
| Would you like to receive credit for completing this course on
| Coursera.org?
1: Yes
2: No
Selection:
Files Plots Packages Help Viewer
R: Date-time Conversion Functions to and from Character
Find in Topic
S3 method for class 'POSIXct'
format(x, format = "", tz = "", usetz = FALSE, ...)
S3 method for class 'POSIXlt'
format(x, format = "", usetz = FALSE, ...)
S3 method for class 'POSIXt'
as.character(x, ...)
strftime(x, format = "", tz = "", usetz = FALSE, ...)
strptime(x, format, tz = "")
Arguments
x An object to be converted: a character vector for strptime, an object which can be converted to "POSIXlt" for strftime.
tz A character string specifying the time zone to be used for the conversion. System-specific (see as.POSIXlt), but "" is the current time zone, and "GMT" is UTC. Invalid values are most commonly treated as UTC, on some platforms with a warning.
Buscar en la web y en Windows
ESP ES
10:44 p. m. 06/10/2016

Lección 8