

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1.R x

```
1 x = airquality[,5]
2 f = gl(x,30)
3 split(x,f)
4
5 s = split(airquality, airquality$Month)
6
7 lapply(s, function(x) colMeans(x[,1:3]))
8 sapply(s, function(x) colMeans(x[,1:4], na.rm = T))
9
10 f1 = gl(2,5)
11
```

Console

In many programming environments, the up arrow will cycle through previous commands. Try hitting the up arrow on your keyboard until you get to this command (`z + 2 + 100`), then change 100 to 1000 and hit Enter. If the up arrow doesn't work for you, just type the corrected command.

```
> z^2 +1000
[1] 1002.20 1018.00 1006.28
```

You're the best!

Finally, let's pretend you'd like to view the contents of a variable that you created earlier, but you can't seem to remember if you named it `my_div` or `myDiv`. You could try both and see what works, or...

```
> my_div
[1] 3.478505 3.181981 2.146460
```

That's a job well done!

Would you like to receive credit for completing this course on Coursera.org?

Environment

Global Environment

Values

my_div	num	[1:3]	3.48 3.18 2.15
my_sqrt	num	[1:3]	0.316 2.828 1.463
x	num		12
y	num		9
z	num	[1:3]	1.1 9 3.14

Files Plots Packages Help Viewer

R: Combine Values into a Vector or List

R Documentation

## Combine Values into a Vector or List

Description

This is a generic function which combines its arguments.

The `c` family of functions combines its arguments to form a vector. All arguments are coerced to a common type which is the type of the returned value, and all attributes except names are removed.

Usage

```
c(..., recursive = FALSE)
```

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

RStudio

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MediaContaminante.R x completos.R x Cor.R x Untitled1.R x

```
1 x = airquality[,5]
2 f = gl(x,30)
3 split(x,f)
4
5 s = split(airquality, airquality$Month)
6
7 lapply(s, function(x) colMeans(x[,1:3]))
8 sapply(s, function(x) colMeans(x[,1:4], na.rm = T))
9
10 f1 = gl(2,5)
11 f2 = gl(5,2)
12 interaction(f1,f2)
13
14
15 rm(x)
16 mean(x)
17 traceback()
18 lapply(x)
19 debug(lm)
20
21 options(error = recover)
22 read.csv("perritosgay")
23
```

Console

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...

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!

Would you like to receive credit for completing this course on coursera.org?

```
1: Yes
2: No
```

Environment

Global Environment

Values

a	num	[1:2, 1:2, 1:10]	-0.28 -0.223 -0.509 0.218 -0.167 ...
w	Factor w/ 3 levels	"1","2","3"	1 1 1 1 1 1 1 1 1 ...
f2	Factor w/ 2 levels	"1","2"	1 1 1 1 1 2 2 2 2
f2	Factor w/ 5 levels	"1","2","3","4","5"	1 1 2 3 3 4 4 5 5
s	list		"C:/Users/Aaron/Documents"
y	List of 5		
y	num		9
y	num		10

Functions

rm(x)	function (x)
mean(x)	function (x)

Files Plots Packages Help Viewer

R: Manipulation of Directories and File Permissions

R Documentation

## Manipulation of Directories and File Permissions

Description

These functions provide a low-level interface to the computer's file system.

Usage

```
dir.exists(patha)
dir.exists(patha, showWarnings = TRUE, recursive = FALSE, mode = "0777")
Sys.chmod(patha, mode = "0777", use_umask = TRUE)
Sys.chmod(patha, mode = NA)
```

Arguments

`patha` a character vector containing a single path name. Tilde expansion (see [path.expand](#)) is done.

`patha` 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`.

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1\* x

```
1 x = airquality[,5]
2 f = gl(x,30)
3 split(x,f)
4
5 s = split(airquality, airquality$Month)
6
7 lapply(s, function(x) colMeans(x[,1:3]))
8 sapply(s, function(x) colMeans(x[,1:4], na.rm = T))
9
10 f1 = gl(2,5)
11 f2 = gl(5,2)
12 interaction(f1,f2)
13
14
15 rm(x)
16 mean(x)
17 traceback()
18 lapply(x)
19 debug(1m)
20
21 options(error = recover)
22 read.csv("perritosgay")
23
```

22:24 (Top Level) R Script

Console

```
| You are really on a roll!
|-----| 96%
| 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
|
| That's the answer I was looking for.
|-----| 100%
| would you like to receive credit for completing this course on coursera.org?
1: Yes
2: No
```

Environment History

Global Environment

Values

a	num [1:2, 1:2, 1:10]	-0.28 -0.223 -0.509 0.218 -0.167 ...
f	Factor w/ 3 levels "1","2","3":	1 1 1 1 1 1 1 1 1 ...
f1	Factor w/ 2 levels "1","2":	1 1 1 1 1 2 2 2 2
f2	Factor w/ 5 levels "1","2","3","4":	1 1 2 2 3 3 4 4 5 5
my_seq	num [1:30]	5 5.17 5.34 5.52 5.69 ...
old_dir	chr [1:1]	"C:/Users/Aaron/Documents"
s	List of 5	
x	9	
y	10	

Functions

Global Environment

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R Documentation

## Colon Operator

Description

Generate regular sequences.

Usage

```
from:to
```

Arguments

from: starting value of sequence.

to: (optional) end value of the sequence.

a, b, ...: must be of the same length.

Details

RStudio

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```
1 x = airquality[,5]
2 f = gl(x,30)
3 split(x,f)
4
5 s = split(airquality, airquality$Month)
6
7 lapply(s, function(x) colMeans(x[,1:3]))
8 sapply(s, function(x) colMeans(x[,1:4], na.rm = T))
9
10 f1 = gl(2,5)
11 f2 = gl(5,2)
12 interaction(f1,f2)
13
14
15 rm(x)
16 mean(x)
17 traceback()
18 lapply(x)
19 debug(1m)
20
21 options(error = recover)
22 read.csv("perritosgay")
23
```

22:24 (Top Level) R Script

Console

```
| what do you think will happen if our vectors are of different length? (Hint: we
| talked about this in a previous lesson.)
|
|-----| 89%
| Vector recycling! Try paste(LETTERS, 1:4, sep = "-"), where LETTERS is a predefined
| variable in R containing a character vector of all 26 letters in the English
| alphabet.
|
| > paste(LETTERS, 1:4, sep = "-")
| [1] "A-1" "B-2" "C-3" "D-4" "E-1" "F-2" "G-3" "H-4" "I-1" "J-2" "K-3" "L-4" "M-1"
| [14] "N-2" "O-3" "P-4" "Q-1" "R-2" "S-3" "T-4" "U-1" "V-2" "W-3" "X-4" "Y-1" "Z-2"
|
| Perseverance, that's the answer.
|-----| 92%
| Since the character vector LETTERS is longer than the numeric vector 1:4, R simply
| recycles, or repeats, 1:4 until it matches the length of LETTERS.
|
| ...
|-----| 95%
| Also worth noting is that the numeric vector 1:4 gets 'coerced' into a character
| vector by the paste() function.
|
| ...
|-----| 97%
| 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".
|
| ...
|-----| 100%
| would you like to receive credit for completing this course on coursera.org?
```

Environment History

Global Environment

Values

a	num [1:2, 1:2, 1:10]	-0.28 -0.223 -0.509 0.218 -0.167 ...
f	Factor w/ 3 levels "1","2","3":	1 1 1 1 1 1 1 1 1 ...
f1	Factor w/ 2 levels "1","2":	1 1 1 1 1 2 2 2 2
f2	Factor w/ 5 levels "1","2","3","4":	1 1 2 2 3 3 4 4 5 5
my_name	chr [1:3]	"my" "name" "is"
my_name	chr [1:4]	"my" "name" "is" "Aaron"
my_val	num [1:30]	5 5.17 5.34 5.52 5.69 ...
my_val	num [1:4]	0.5 5.5 -10 6
old_dir	chr [1:1]	"C:/Users/Aaron/Documents"
s	List of 5	
f1	Factor w/ 2 levels "1","2":	TRUE FALSE TRUE FALSE

Functions

Global Environment

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R Documentation

## Colon Operator

Description

Generate regular sequences.

Usage

```
from:to
```

Arguments

from: starting value of sequence.

to: (optional) end value of the sequence.

a, b, ...: must be of the same length.

Details

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1.R x

Source on Save Run Source

```
1 x = airquality[,5]
2 f = n1(x,30)
```

Console

```
[31] 0.353927826 NA 0.764529102 0.201750428 1.493550568 NA
[37] 0.172123719 NA NA NA 0.752302318 NA
[43] NA -0.060079399 2.181110126 0.711367656 NA NA
[49] -0.788052487 0.338502912 NA -0.008082397 -0.740436089 NA
[55] 1.375921713 -1.175966109 0.422901590 NA NA
[61] 0.002122564 -1.610989239 -0.827993334 NA NA 0.294205409
[67] NA 0.520255563 -0.571990390 NA NA
[73] NA -0.216731046 NA 0.005909894 NA -1.462893154
[79] 2.045829329 1.156229205 NA NA NA
[85] NA 0.790366541 NA 0.352502028 -0.353572650 NA
[91] -1.261946818 NA NA -0.07668014 NA -1.308635313
[97] NA NA NA NA NA NA
```

Great job!

Now that we've got NAs down pat, let's look at a second type of missing value -- NaN, which stands for 'not a number'. To generate NaN, try dividing (using a forward slash) 0 by 0 now.

```
> 0/0
[1] NaN
```

Nice work!

Let's do one more, just for fun. In R, Inf stands for infinity. What happens if you subtract Inf from Inf?

```
> inf-inf
Error: object 'inf' not found
> Inf - Inf
[1] NaN
```

You're the best!

would you like to receive credit for completing this course on coursera.org?

1: No  
2: Yes

Environment

Global Environment

f2 Factor w/ 4 levels "1", "2", "3", "4",...: 1 1 2 2 3 3 4 4 5 5  
my\_char chr [1:3] "my" "name" "is"  
my\_data num [1:100] NA 0.811 NA 1.717 NA ...  
log1 [1:100] TRUE FALSE TRUE FALSE TRUE FALSE ...  
my\_name chr [1:4] "my" "name" "is" "Aaron"  
my\_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...  
num\_vect num [1:4] 0.5 55 -10 6  
old\_dir "C:/Users/Aaron/Documents"  
s List of 5  
tf logi [1:4] TRUE FALSE TRUE FALSE  
x num [1:4] 44 NA 5 NA

Files Plots Packages Help Viewer

R Documentation

## Colon Operator

Description

Generate regular sequences.

Usage

```
from:to  
a:b
```

Arguments

from starting value of sequence.  
to (optional) end value of the sequence.  
a, b, from, to of the same length.

Details

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1.R x

Source on Save Run Source

```
1 x = airquality[,5]
2 f = n1(x,30)
```

Console

```
1: vect[bar]
2: vect["2"]
3: vect["bar"]
```

selection: 3

That's the answer I was looking for.

Now, try it out.

```
> vect["bar"]
bar
2
```

You got it!

Likewise, we can specify a vector of names with vect[c("foo", "bar")]. Try it out.

```
> vect[c("foo", "bar")]
foo bar
11 2
```

You nailed it! Good job!

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!

would you like to receive credit for completing this course on Coursera.org?

1: Yes

Environment

Global Environment

f2 Factor w/ 5 levels "1", "2", "3", "4",...: 1 1 2 2 3 3 4 4 5 5  
my\_char chr [1:3] "my" "name" "is"  
my\_data num [1:100] NA 0.811 NA 1.717 NA ...  
log1 [1:100] TRUE FALSE TRUE FALSE TRUE FALSE ...  
my\_name chr [1:4] "my" "name" "is" "Aaron"  
my\_seq num [1:30] 5 5.17 5.34 5.52 5.69 ...  
num\_vect num [1:4] 0.5 55 -10 6  
old\_dir "C:/Users/Aaron/Documents"  
s List of 5  
tf logi [1:4] TRUE FALSE TRUE FALSE  
vect Named num [1:3] 11 2 NA  
vectc Named num [1:3] 11 2 NA

Files Plots Packages Help Viewer

R Documentation

## Colon Operator

Description

Generate regular sequences.

Usage

```
from:to  
a:b
```

Arguments

from starting value of sequence.  
to (optional) end value of the sequence.  
a, b, from, to of the same length.

Details

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1\* x

```
84 x = rbinom(100, 1, 0.5)
85 e = rnorm(100, 0, 2)
86 y = 0.5 + 2*x + e
87 summary(y)
88 plot(x, y, main="modelo lineal", col="dark red")
89
```

Console

```
|=====| 92%
| Now, use the colnames() function to set the 'colnames' attribute for our data frame. This is
| similar to the way we used the dim() function earlier in this lesson.
|
|> colnames(my_data) <- cnames
|
| You got it right!
|=====| 94%
|
| Let's see if that got the job done. Print the contents of my_data.
|
|> my_data
| patient age weight bp rating test
| 1 Bill 1 5 9 13 17
| 2 Gina 2 6 10 14 18
| 3 Kelly 3 7 11 15 19
| 4 Sean 4 8 12 16 20
|
| Keep working like that and you'll get there!
|=====| 96%
|
| 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: No
| 2: Yes
|
| Selection: |
```

Environment History

Global Environment

- 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 ...
- x Large matrix (1000000 elements, 7.6 Mb)

Values

- a num [1:2, 1:2, 1:10] -0.28 -0.223 -0.509 0.218 -0.167 ...
- B0 0.5
- B1 2
- cnames chr [1:6] "patient" "age" "weight" "bp" "rating" "test"
- e num [1:100] -0.801 -0.669 2.736 4.276 1.012 ...
- f Factor w/ 40 levels "1","2","3","4",...: 1 1 1 1 1 1 1 1 1 1 ...

Files Plots Packages Help Viewer

R Matrices Find in Topic

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)

RStudio

File Edit Code View Plots Session Build Debug Tools Help

MediaContaminante.R x completos.R x Cor.R x Untitled1\* x84 x = rbinom(100, 1, 0.5)
85 e = rnorm(100, 0, 2)
86 y = 0.5 + 2\*x + e
87 summary(y)
88 plot(x, y, main="modelo lineal", col="dark red")
89

Console

```
|=====| 94%
|
| which of the following evaluates to TRUE?
|
| 1: any(ints == 2.5)
| 2: any(ints == 10)
| 3: all(ints == 10)
| 4: all(c(TRUE, FALSE, TRUE))
|
| Selection: 2
|
| All that practice is paying off!
|=====| 96%
|
| 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: 2
|
| You nailed it! Good job!
| You've reached the end of this lesson! Returning to the main menu...
| Please choose a course, or type 0 to exit swirl.
|
| 1: R Programming
| 2: Take me to the swirl course repository!
|
| Selection: |
```

Environment History

Global Environment

- x Large matrix (1000000 elements, 7.6 Mb)

Values

- a num [1:2, 1:2, 1:10] -0.28 -0.223 -0.509 0.218 -0.167 ...
- B0 0.5
- B1 2
- cnames chr [1:6] "patient" "age" "weight" "bp" "rating" "test"
- e num [1:100] -0.801 -0.669 2.736 4.276 1.012 ...
- f Factor w/ 40 levels "1","2","3","4",...: 1 1 1 1 1 1 1 1 1 1 ...
- f1 Factor w/ 2 levels "1","2": 1 1 1 1 2 2 2 2
- f2 Factor w/ 5 levels "1","2","3","4",...: 1 1 2 2 3 3 4 4 5 5
- i 11L
- ints int [1:10] 5 8 9 3 1 2 7 10 4 6

Files Plots Packages Help Viewer

R Matrices Find in Topic

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, ...)

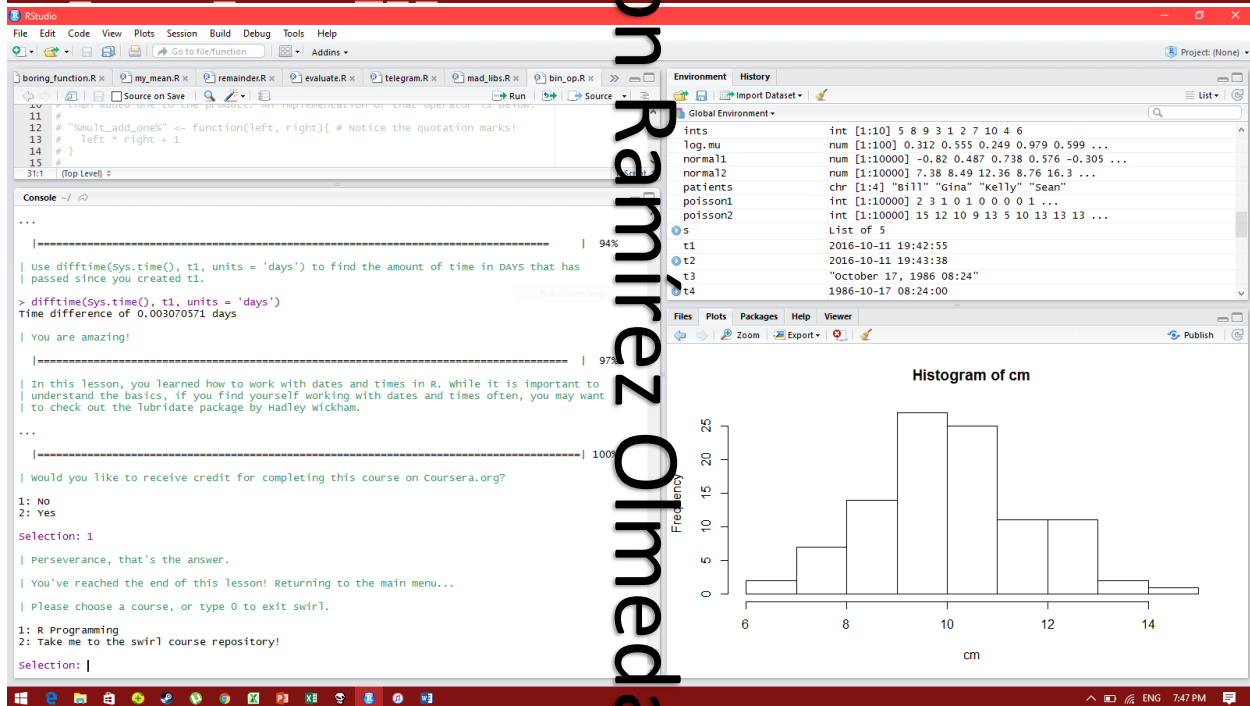
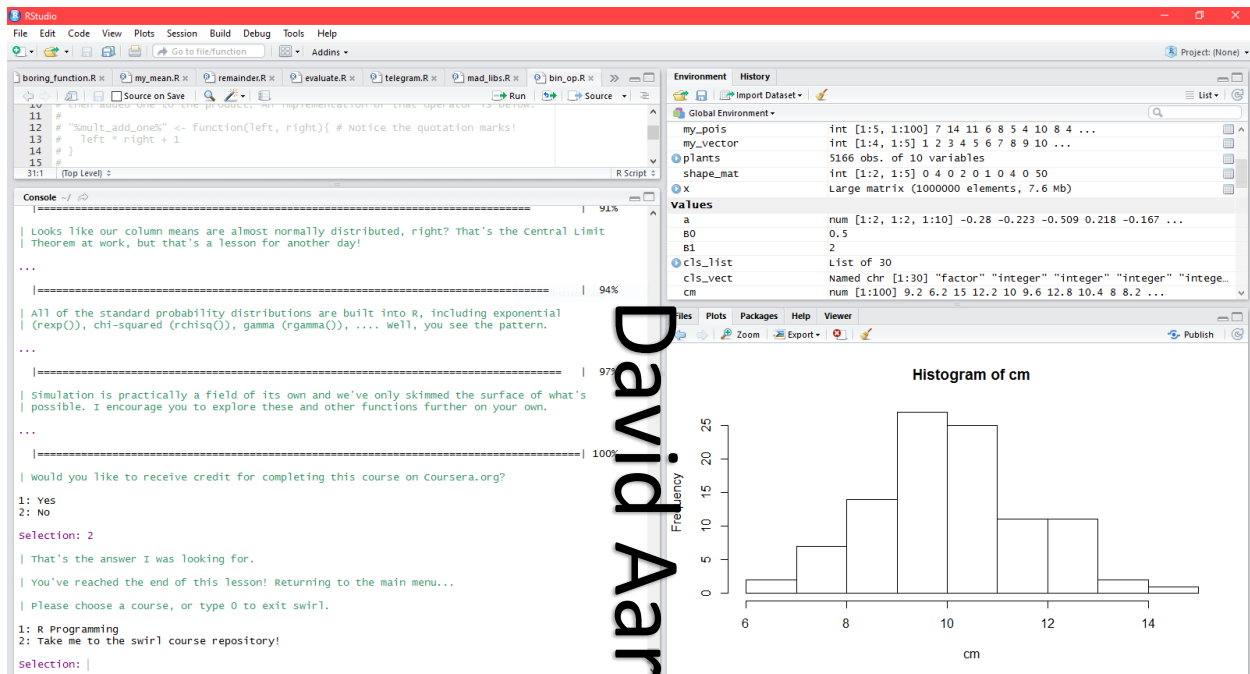
## S3 method for class 'data.frame'

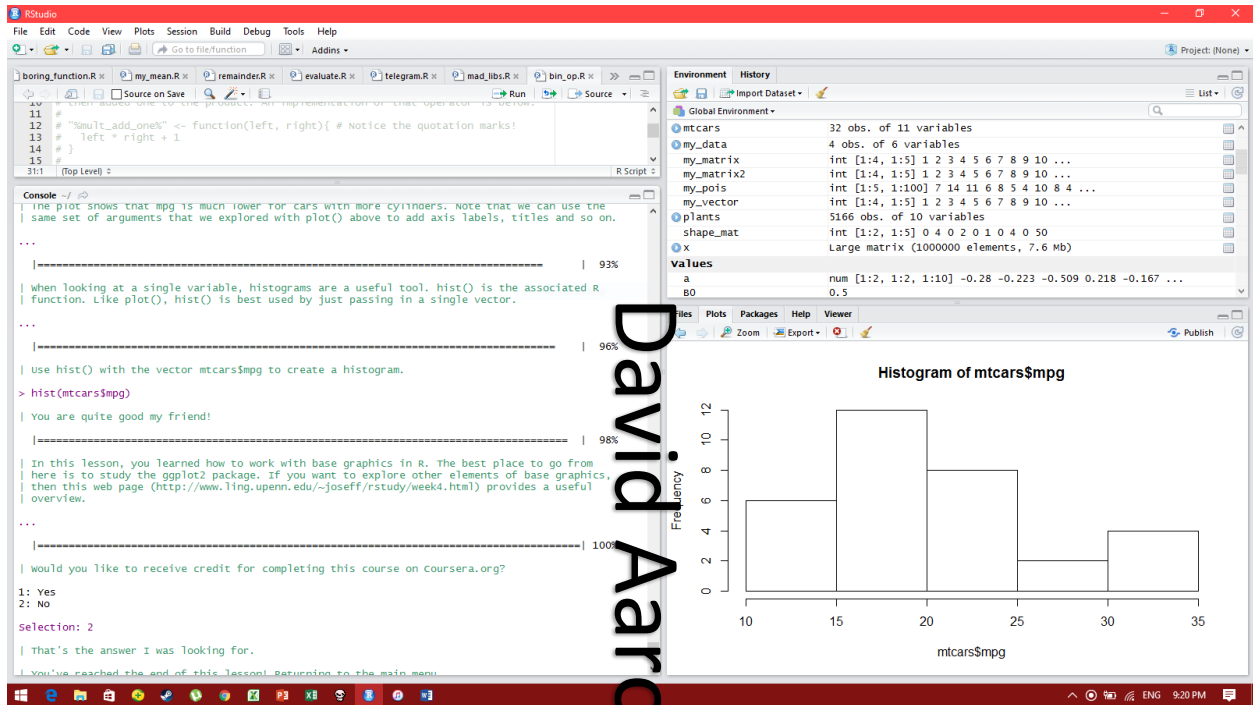
as.matrix(x, rownames.force = NA, ...)

is.matrix(x)

# David Aaron Ramírez Olmeda







David Aaron Ramírez Olmeda