



The str Function

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`str`: Compactly display the internal structure of an R object

- A diagnostic function and an alternative to 'summary'
- It is especially well suited to compactly display the (abbreviated) contents of (possibly nested) lists.
- Roughly one line per basic object

What's in this object?

```
rdpeng — R — 80x24
amelia ~:> R-2.15.1

R version 2.15.1 (2012-06-22) -- "Roasted Marshmallows"
Copyright (C) 2012 The R Foundation for Statistical Computing
ISBN 3-900051-07-0
Platform: x86_64-apple-darwin11.4.0 (64-bit)

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    Natural language support but running in an English locale

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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> █
```

```
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Type 'demo()' for some demos, 'help()' for on-line help, or
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> str(str)
function (object, ...)
> str(lm)
function (formula, data, subset, weights, na.action, method = "qr", model = TRUE
,
  x = FALSE, y = FALSE, qr = TRUE, singular.ok = TRUE, contrasts = NULL,
  offset, ...)
> str(ls)
function (name, pos = -1, envir = as.environment(pos), all.names = FALSE,
  pattern)
> x <- rnorm(100, 2, 4)
> summary(x)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-7.6690 -0.8765  1.7600  1.8780  4.7290 11.0200
> str(x)
num [1:100] 7.299 -4.668 -5.345 -0.584 5.177 ...
> f <- gl(40, 10)
> str(f)
Factor w/ 40 levels "1","2","3","4",...: 1 1 1 1 1 1 1 1 1 1 ...
> █
```



```
Factor w/ 40 levels "1","2","3","4",...: 1 1 1 1 1 1 1 1 1 1 1 ...
> summary(f)
 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
27 28 29 30 31 32 33 34 35 36 37 38 39 40
10 10 10 10 10 10 10 10 10 10 10 10 10 10
> library(datasets)
> head(airquality)
  Ozone Solar.R Wind Temp Month Day
1    41     190  7.4   67     5   1
2    36     118  8.0   72     5   2
3    12     149 12.6   74     5   3
4    18     313 11.5   62     5   4
5    NA        NA 14.3   56     5   5
6    28        NA 14.9   66     5   6
> str(airquality)
'data.frame':  153 obs. of  6 variables:
 $ Ozone   : int  41 36 12 18 NA 28 23 19 8 NA ...
 $ Solar.R: int  190 118 149 313 NA NA 299 99 19 194 ...
 $ Wind    : num  7.4 8 12.6 11.5 14.3 14.9 8.6 13.8 20.1 8.6 ...
 $ Temp    : int  67 72 74 62 56 66 65 59 61 69 ...
 $ Month   : int  5 5 5 5 5 5 5 5 5 5 ...
 $ Day     : int  1 2 3 4 5 6 7 8 9 10 ...
> 
```



```
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  Ozone Solar.R Wind Temp Month Day
1   41    190  7.4   67     5   1
2   36    118  8.0   72     5   2
3   12    149 12.6   74     5   3
4   18    313 11.5   62     5   4
5   NA     NA 14.3   56     5   5
6   28     NA 14.9   66     5   6

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 $ Temp   : int  67 72 74 62 56 66 65 59 61 69 ...
 $ Month   : int  5 5 5 5 5 5 5 5 5 5 ...
 $ Day     : int  1 2 3 4 5 6 7 8 9 10 ...

> m <- matrix(rnorm(100), 10, 10)
> str(m)
 num [1:10, 1:10] 0.6197 1.0626 0.0667 -0.7731 0.1197 ...
> m[, 1]
 [1] 0.61974138 1.06261394 0.06672329 -0.77314190 0.11971410 1.55841883
 [7] -1.06157291 0.81664997 -0.95719759 0.29296738
> s <- split(airquality, airquality$Month)
> str(s)
```

```
> m <- matrix(rnorm(100), 10, 10)
> str(m)
      num [1:10, 1:10] 0.6197 1.0626 0.0667 -0.7731 0.1197 ...
> m[, 1]
[1] 0.61974138 1.06261394 0.06672329 -0.77314190 0.11971410 1.55841883
[7] -1.06157291 0.81664997 -0.95719759 0.29296738
> s <- split(airquality, airquality$Month)
> str(s)
List of 5
 $ 5:'data.frame':      31 obs. of  6 variables:
  ..$ Ozone   : int [1:31] 41 36 12 18 NA 28 23 19 8 NA ...
  ..$ Solar.R: int [1:31] 190 118 149 313 NA NA 299 99 19 194 ...
  ..$ Wind    : num [1:31] 7.4 8 12.6 11.5 14.3 14.9 8.6 13.8 20.1 8.6 ...
  ..$ Temp    : int [1:31] 67 72 74 62 56 66 65 59 61 69 ...
  ..$ Month   : int [1:31] 5 5 5 5 5 5 5 5 5 5 ...
  ..$ Day     : int [1:31] 1 2 3 4 5 6 7 8 9 10 ...
 $ 6:'data.frame':      30 obs. of  6 variables:
  ..$ Ozone   : int [1:30] NA NA NA NA NA NA 29 NA 71 39 ...
  ..$ Solar.R: int [1:30] 286 287 242 186 220 264 127 273 291 323 ...
  ..$ Wind    : num [1:30] 8.6 9.7 16.1 9.2 8.6 14.3 9.7 6.9 13.8 11.5 ...
  ..$ Temp    : int [1:30] 78 74 67 84 85 79 82 87 90 87 ...
  ..$ Month   : int [1:30] 6 6 6 6 6 6 6 6 6 6 ...
  ..$ Day     : int [1:30] 1 2 3 4 5 6 7 8 9 10 ...
 $ 7:'data.frame':      31 obs. of  6 variables:
```

```
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..$ Month : int [1:30] 6 6 6 6 6 6 6 6 6 6 6 ...
..$ Day    : int [1:30] 1 2 3 4 5 6 7 8 9 10 ...
$ 7:'data.frame':      31 obs. of  6 variables:
..$ Ozone  : int [1:31] 135 49 32 NA 64 40 77 97 97 85 ...
..$ Solar.R: int [1:31] 269 248 236 101 175 314 276 267 272 175 ...
..$ Wind    : num [1:31] 4.1 9.2 9.2 10.9 4.6 10.9 5.1 6.3 5.7 7.4 ...
..$ Temp    : int [1:31] 84 85 81 84 83 83 88 92 92 89 ...
..$ Month    : int [1:31] 7 7 7 7 7 7 7 7 7 7 ...
..$ Day      : int [1:31] 1 2 3 4 5 6 7 8 9 10 ...
$ 8:'data.frame':      31 obs. of  6 variables:
..$ Ozone  : int [1:31] 39 9 16 78 35 66 122 89 110 NA ...
..$ Solar.R: int [1:31] 83 24 77 NA NA NA 255 229 207 222 ...
..$ Wind    : num [1:31] 6.9 13.8 7.4 6.9 7.4 4.6 4 10.3 8 8.6 ...
..$ Temp    : int [1:31] 81 81 82 86 85 87 89 90 90 92 ...
..$ Month    : int [1:31] 8 8 8 8 8 8 8 8 8 8 ...
..$ Day      : int [1:31] 1 2 3 4 5 6 7 8 9 10 ...
$ 9:'data.frame':      30 obs. of  6 variables:
..$ Ozone  : int [1:30] 96 78 73 91 47 32 20 23 21 24 ...
..$ Solar.R: int [1:30] 167 197 183 189 95 92 252 220 230 259 ...
..$ Wind    : num [1:30] 6.9 5.1 2.8 4.6 7.4 15.5 10.9 10.3 10.9 9.7 ...
..$ Temp    : int [1:30] 91 92 93 93 87 84 80 78 75 73 ...
..$ Month    : int [1:30] 9 9 9 9 9 9 9 9 9 9 ...
..$ Day      : int [1:30] 1 2 3 4 5 6 7 8 9 10 ...
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```