```
library(dplyr)

rladies_global %>%
  filter(city == 'Mendoza')
```

R-Ladies Mendoza

Auspician

R-Ladies

R consortium

QUIANID

Laboratorio de Química Analítica
para Investigación y Desarrollo

UNCUYO
UNIVERSIDAD
NACIONAL DE CUYO

FACULTAD DE CIENCIAS
EXACTAS Y NATURALES
Naturaleza, Ciencia y Humanismo

Hola

Soy Ana Laura Diedrichs

Ing. en Sistemas de Información.

Realizando el doctorado en la UTN.

Uso R hace 5 años.

Jan Strappa

Brenda Canizo

¿Qué es R?

Lenguaje de **programación** de **código abierto** con énfasis en estadística y gráficos.

R compila y se ejecuta en en una amplia variedad de plataformas UNIX, Linux, FreeBSD, Windows y MacOs.

https://www.r-project.org/

Código abierto (open source)

- Acceso al código fuente
- Modelo de desarrollo de software abierto
- R está disponible bajo los términos de la licencia GNU de la Free Software Foundation

https://es.wikipedia.org/wiki/C%C3%B3digo_abierto

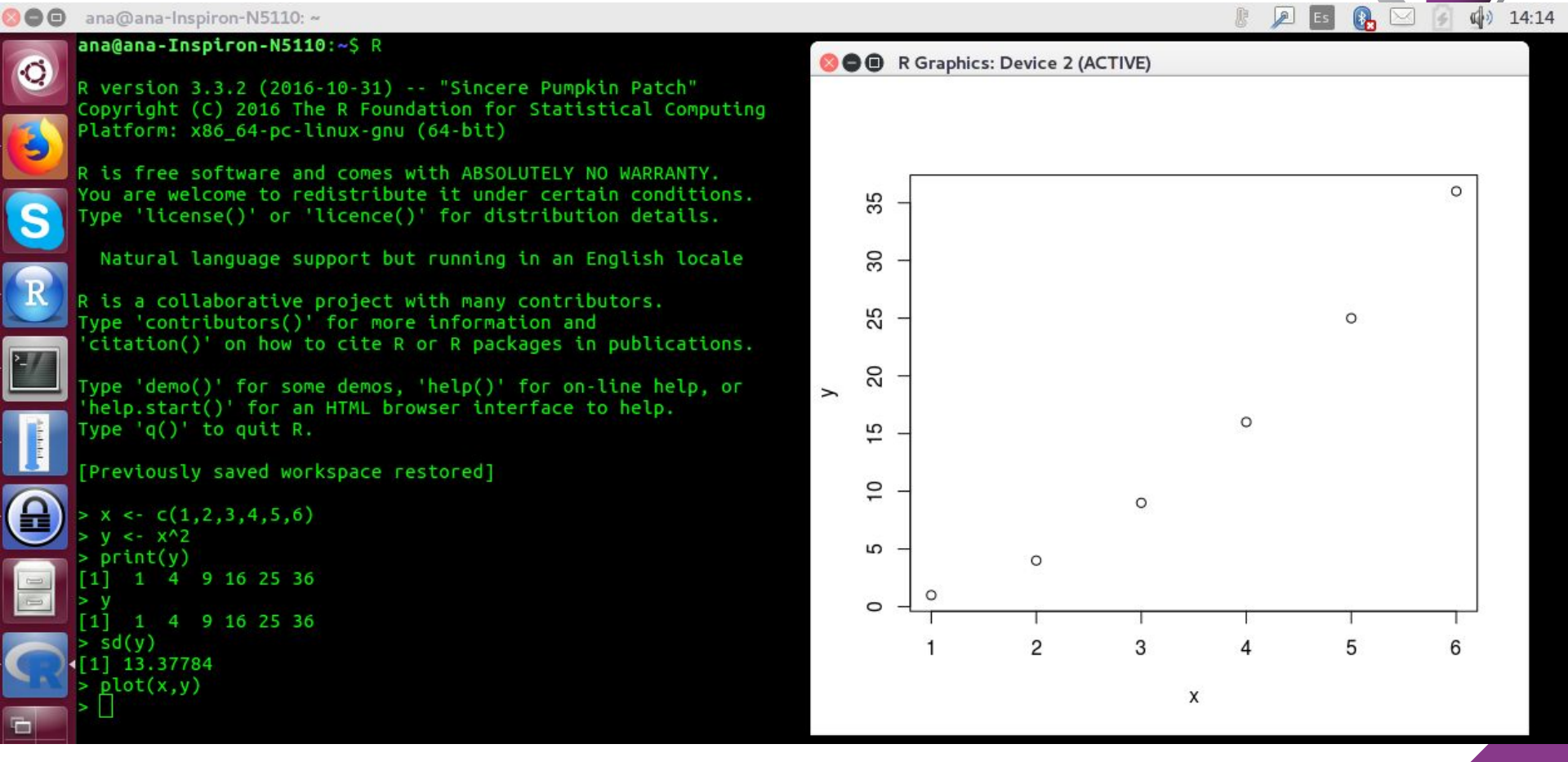
```
> remove.packages("ggplot2”)
> install.packages("ggplot2”)
```

Funcionalidades de R

- Funcionalidades básicas orientadas a la estadística, operaciones aritméticas y matriciales, y soporte gráfico estático.
- El resto de las funcionalidades se instala en R mediante paquetes
- Cada paquete es un librería que añade nuevos comandos, más funcionalidades a R.
- Se accede a R mediante comandos de consola, pero hoy en día existen varias GUI o IDEs:

https://es.wikipedia.org/wiki/C%C3%B3digo_abierto

Acceso a R desde consola



CRAN
https://cran.rstudio.com/

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R Homepage
The R Journal

Software
R Sources
R Binaries
Packages
Other

Documentation
Manuals
FAQs
Contributed

The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- Download R for Linux
- Download R for (Mac) OS X
- Download R for Windows

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

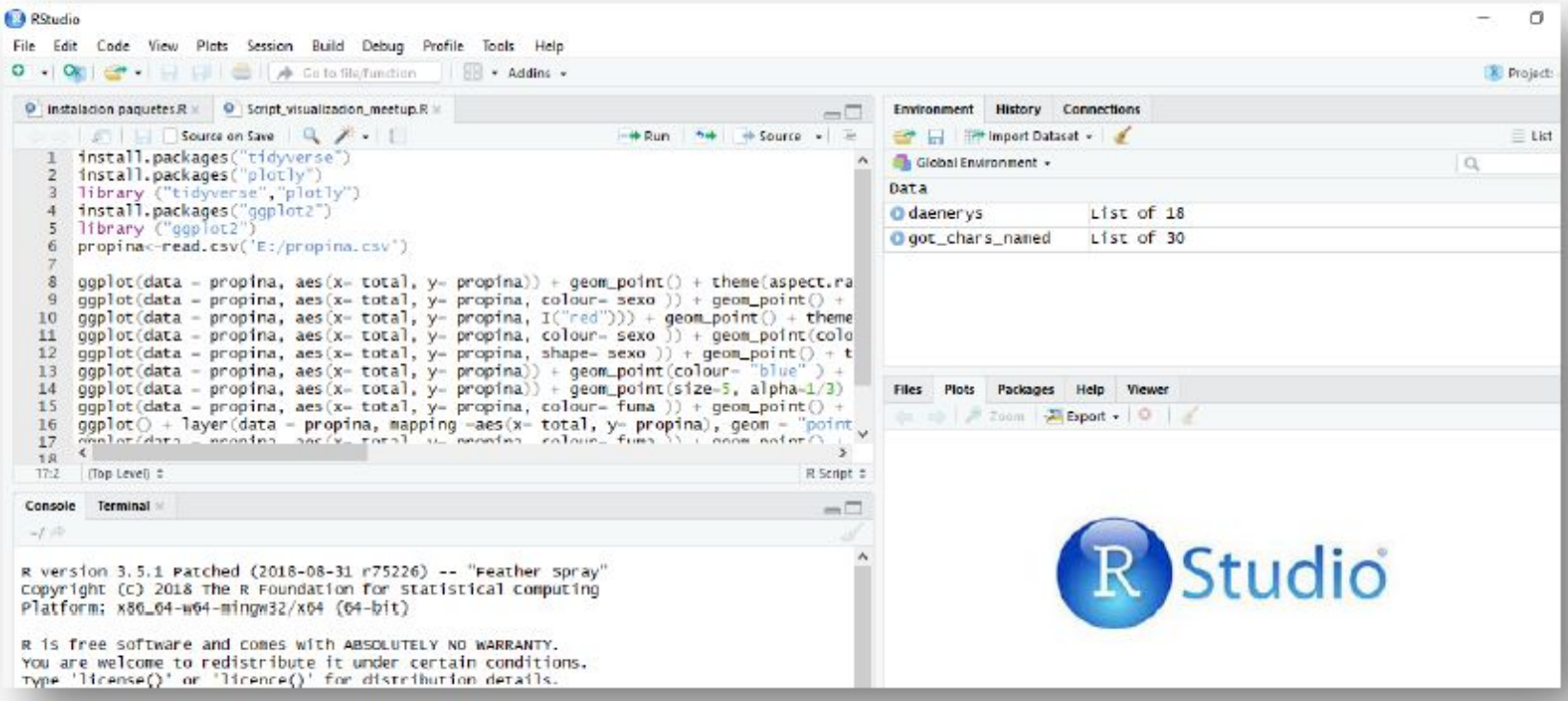
Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

- The latest release (2018-04-23, Joy in Playing) R-3.5.0.tar.gz, read what's new in the latest version.
- Sources of R alpha and beta releases (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are available here. Please read about new features and bug fixes before filing corresponding feature requests or bug reports.
- Source code of older versions of R is available here.
- Contributed extension packages

Rstudio

https://www.rstudio.com



Estadística

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function | Addins | Project: (None)

script-download.R | dt.R | experiment-bn.R | ejemplo1.R

Source on Save | Run | Source

```
1  x <- c(1,2,3,4,5,6)
2  y <- x^2
3  print(y)          # mostrar valores de y
4  mean(y)           # media
5  var(y)            #varianza
6  lm_1 <- lm(y ~ x) # linear regression model: y = B0 + (B1 * x )
7  print(lm_1)       # print model
8  summary(lm_1)     # Compute and print statistics for the fit
9  par(mfrow = c(2, 2))     # Request 2x2 plot layout
10 plot(lm_1)               # Diagnostic plot of regression model
```

10:63 (Top Level) R Script

Console | Terminal

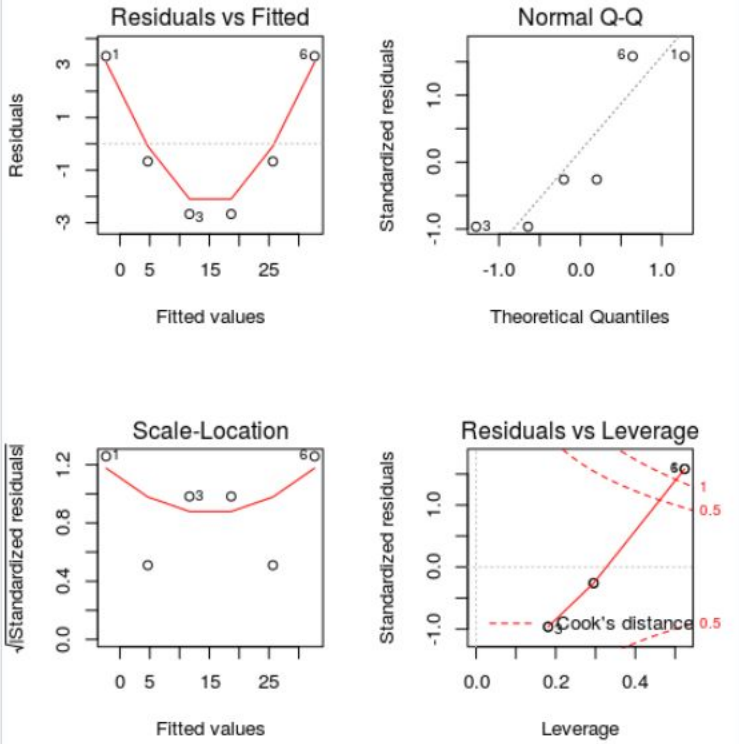
~/

```
> source('~/Dropbox/rladies/primer-meetup/ejemplo1.R')
[1]  1  4  9 16 25 36

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)            x
     -9.333        7.000

> mean(y)
[1] 15.16667
> summary(lm_1)

Call:
lm(formula = y ~ x)

Residuals:
      1       2       3       4       5       6
 3.3333 -0.6667 -2.6667 -2.6667 -0.6667  3.3333

Coefficients:
```

Environment | History | Connections

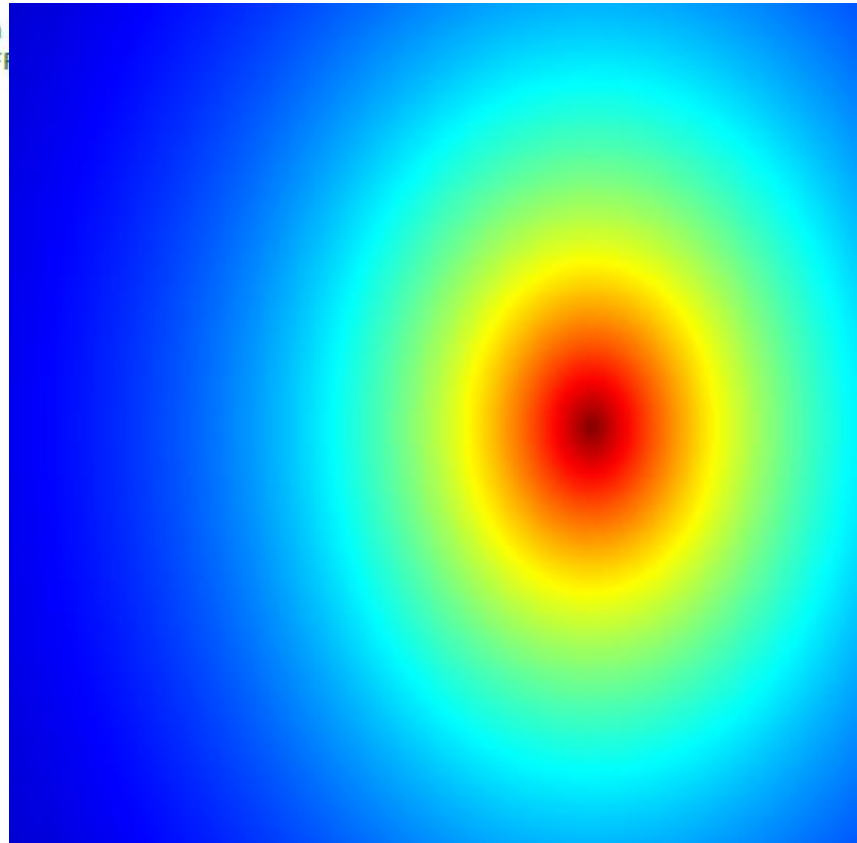
Files | Plots | Packages | Help | Viewer

Zoom | Export | Publish



Animaciones

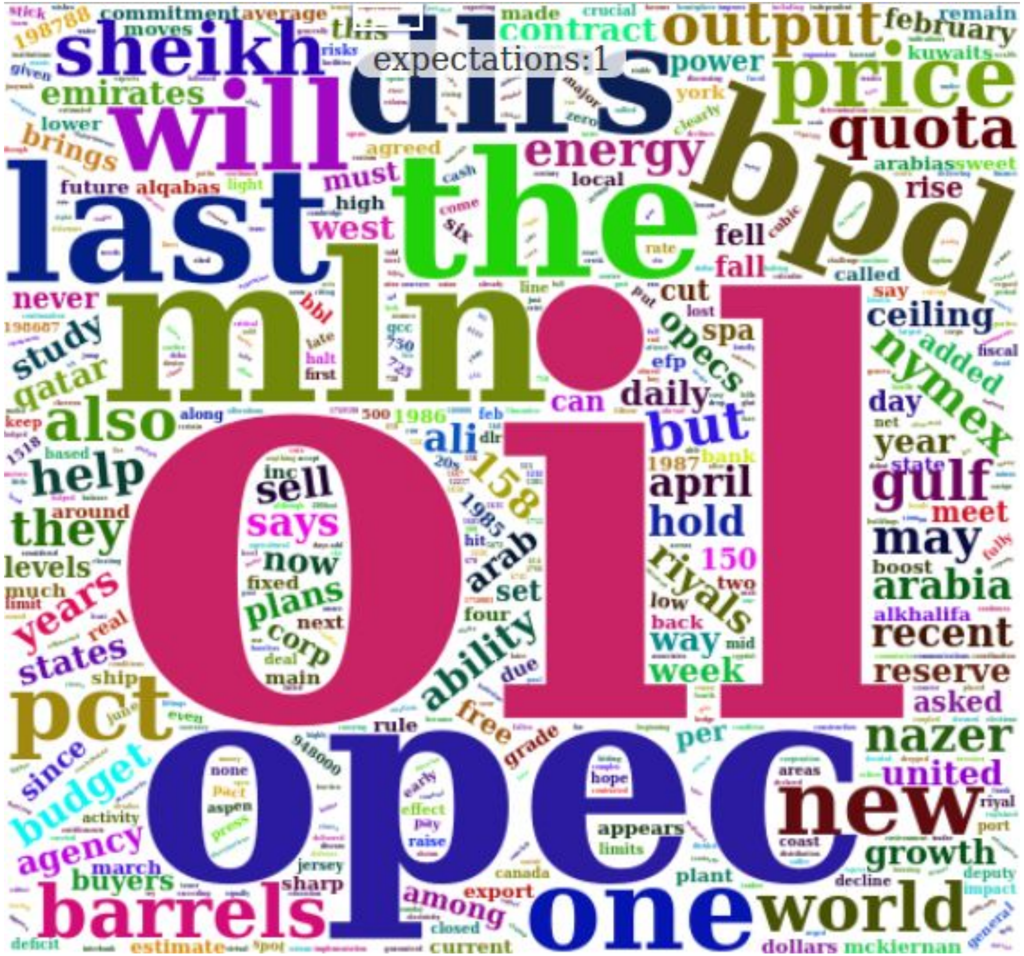
```
###
install.packages("caTools")  # install external package
library(caTools)             # external package providing write.gif function
jet.colors <- colorRampPalette(c("#00007F", "blue", "#007FFF", "cyan", "#7FFF
                                 "yellow", "#FF7F00", "red", "#7F0000"))
dx <- 400                    # define width
dy <- 400                    # define height
C  <- complex(real = rep(seq(-2.2, 1.0, length.out = dx), each = dy),
              imag = rep(seq(-1.2, 1.2, length.out = dy), dx))
C <- matrix(C, dy, dx)       # reshape as square matrix of complex numbers
Z <- 0                       # initialize Z to zero
X <- array(0, c(dy, dx, 20)) # initialize output 3D array
for (k in 1:20) {            # loop with 20 iterations
  Z <- Z^2 + C               # the central difference equation
  X[, , k] <- exp(-abs(Z))   # capture results
}
write.gif(X, "Mandelbrot.gif", col = jet.colors, delay = 100)
```



https://en.wikipedia.org/wiki/Mandelbrot_set

https://en.wikipedia.org/wiki/R_(programming_language)

word2cloud


oil
opec
mln
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last
will
bpd
price
output
sheikh
quota
energy
expectations:1
one
barrels
new
world
pct
also
help
they
gulf
may
arabia
recent
reserve
nazer
united
growth
budget
agency
buyers
years
states
nymex
ceiling
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ability
arab
riyals
week
way
says
sell
plans
now
contract
february
emirates
lower
brings
future
alqabas
west
must
high
fell
fall
cut
daily
opecs
study
qatar
never
levels
much
since
march
among
export
asked
meet
year
day
added
call
rise
york
commitment
average
moves
made
crucial
remain
kuwaits
power
agreed
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set
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due
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grade
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plant
decline
dollars
mckiernan
estimate
current
deficit
sharp
jersey
appears
limits
hope
raise
effect
early
aspen
none
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activity
ship
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158
bank
spa
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can
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corp
deal
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keep
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limit
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low
back
mid
alkhalifa
boost
riyal
port
deputy
impact
general
areas
coast
closed
canada
pay
press
first
late
gcc
bbl
six
come
cash
light
line
lost
say
called
fiscal
state
net
arabias
sweet
cable
rate
risks
given
stick
198788
198687
1518
1985
948000
20s
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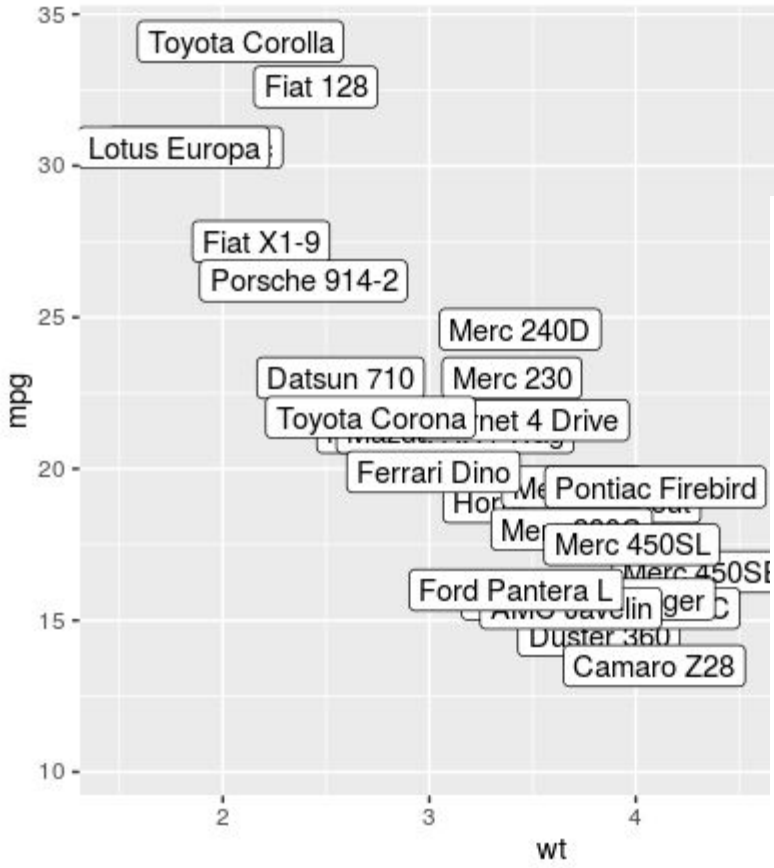
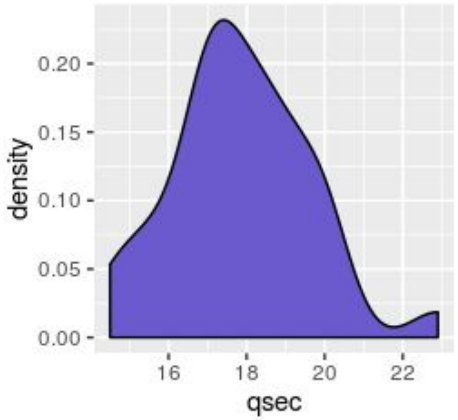
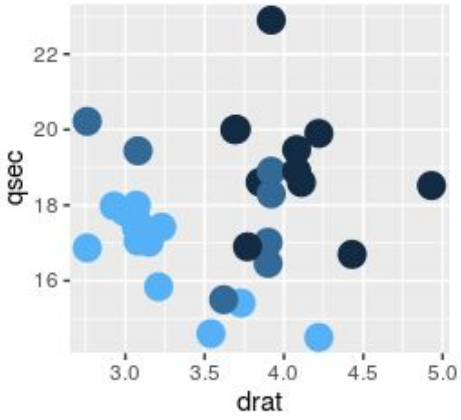
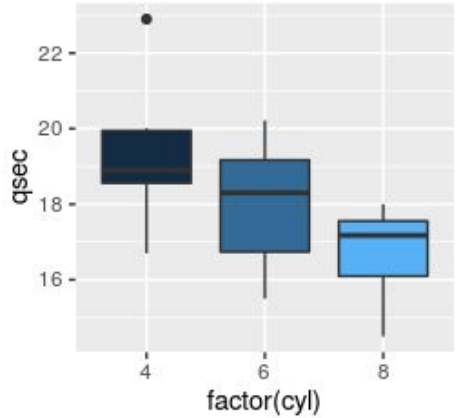
zero
major
six
spot

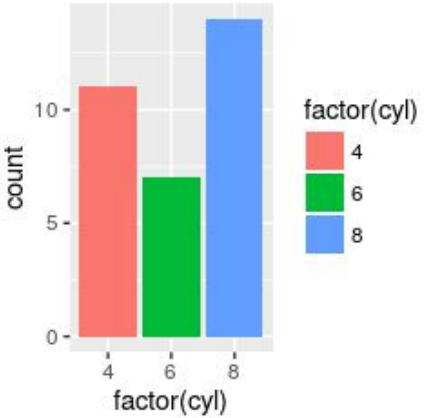
ggplot2


Toyota Corolla
Fiat 128
Lotus Europa
Fiat X1-9
Porsche 914-2
Merc 240D
Datsun 710
Merc 230
Toyota Corona
Ferrari Dino
Pontiac Firebird
Merc 450SL
Ford Pantera L
Camaro Z28
mpg
wt

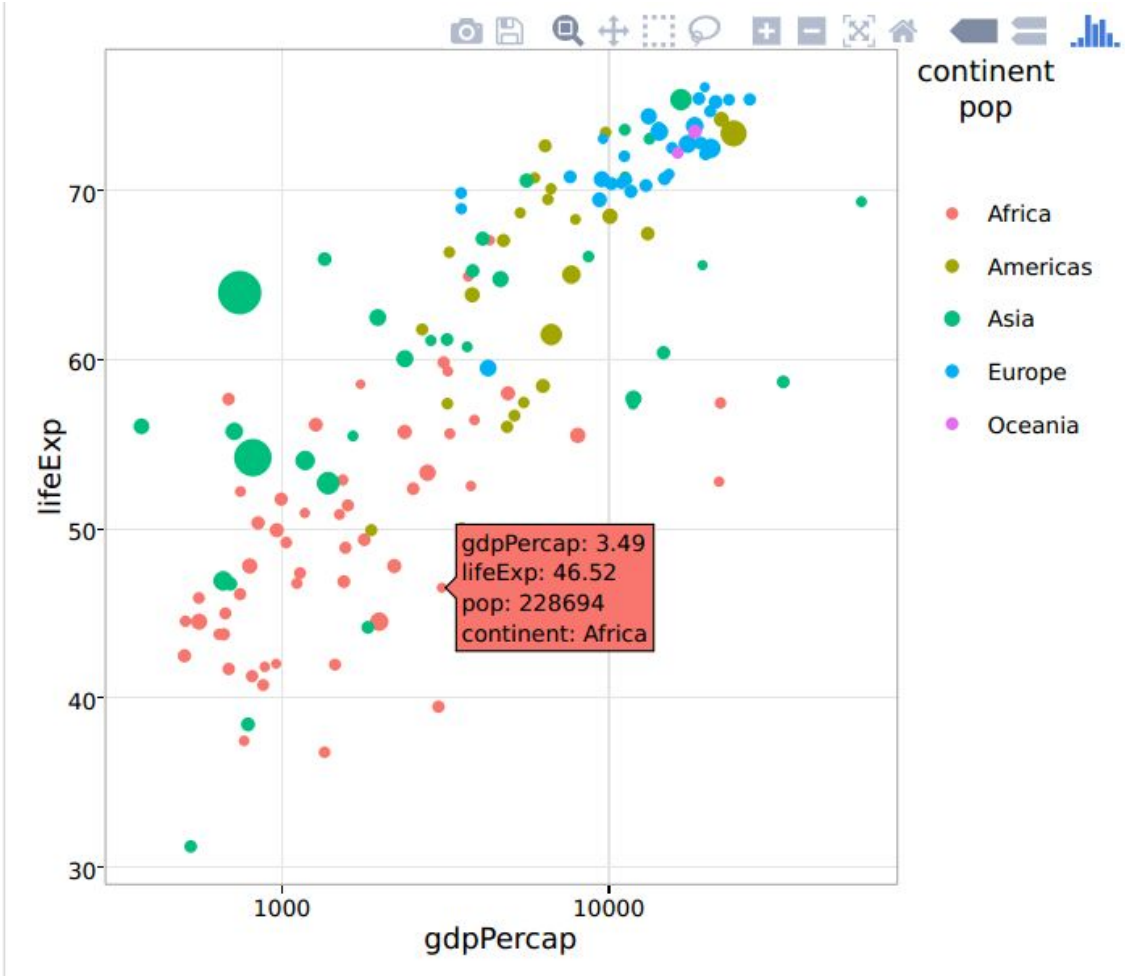

density
qsec


qsec
drat

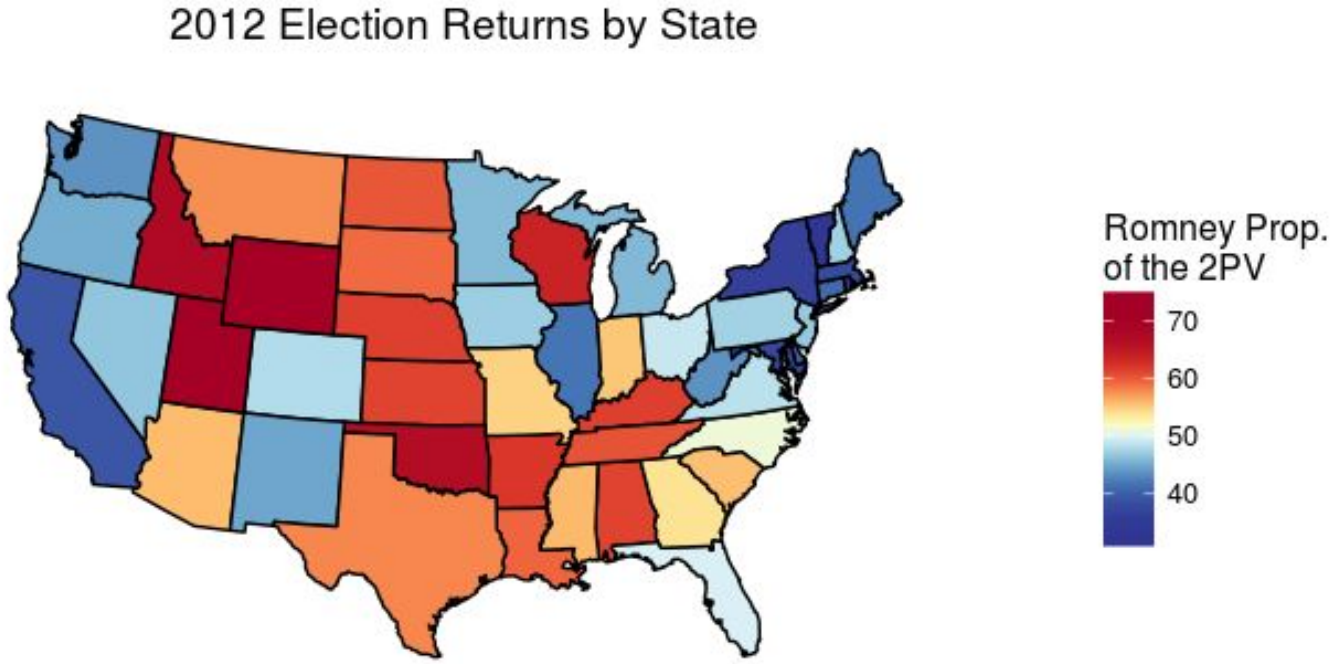

qsec
factor(cyl)


count
factor(cyl)
factor(cyl)
4
6
8

Ggplot + plotly

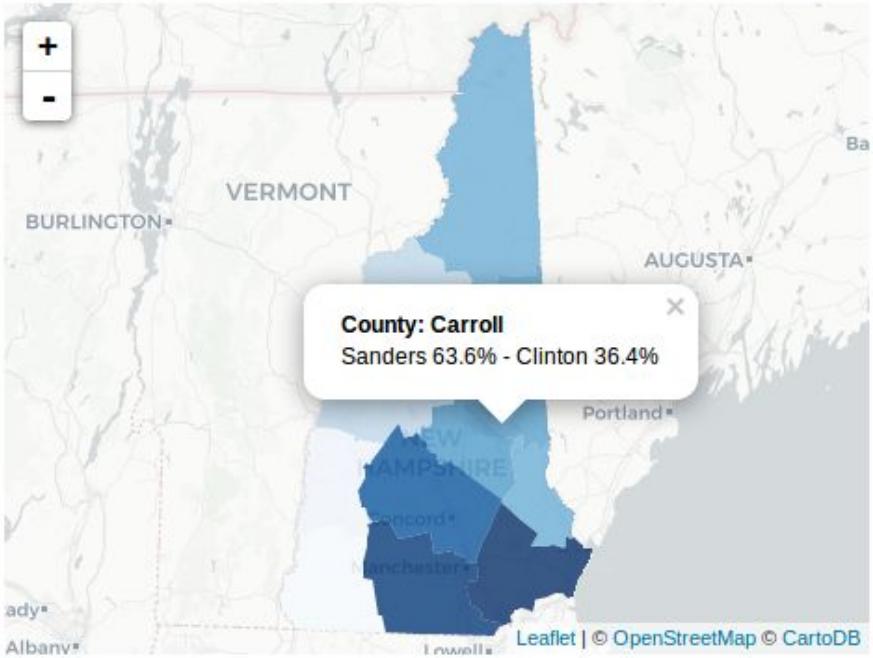


Mapas



https://gist.github.com/dsparks/4031654

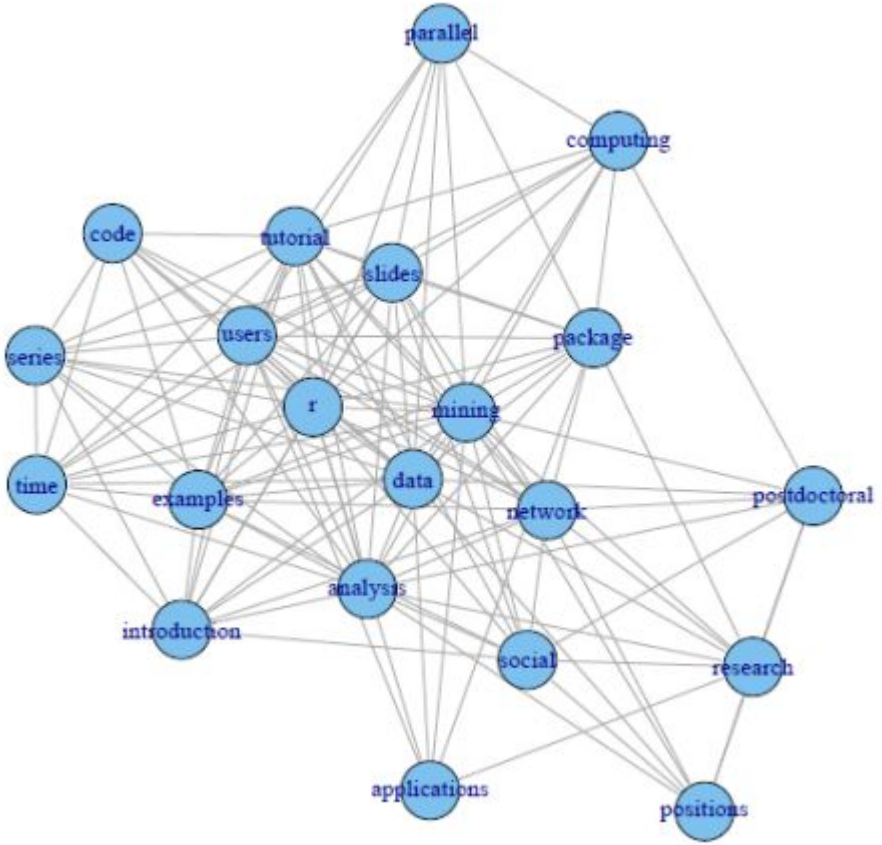
Mapa interactivo



Basic interactive map created in R and RStudio's Leaflet package. Click on an area to see the underlying data.

https://www.computerworld.com/article/3038270/data-analytics/create-maps-in-r-in-10-fairly-easy-steps.html?page=2

Análisis de redes sociales



shiny

Análisis de resultados

dataset

dacc-temp

T value

1

Training Config

smote

Algoritmo

hc

Score

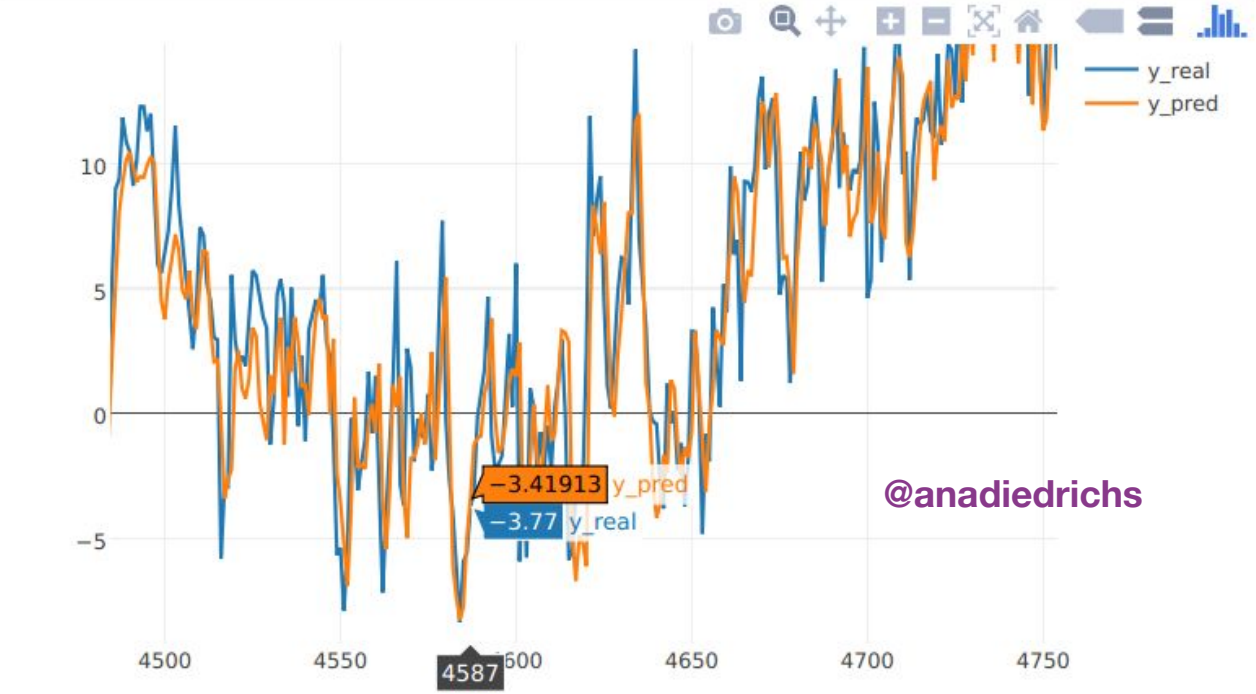
bic-g

Variable a Predecir

las_paredes.te

ConfusionMatrixHelada | ConfusionMatrixTemps | Errors regression | Plot | Table

Error distribution | Cummulative differences | BN description



@anadiedrichs

Y muchas aplicaciones más

- Bioinformática: biología molecular, secuenciamiento ADN (Bioconductor)
- Machine learning (redes neuronales, árboles decisión, etc), deep learning (kerasR)
- Integración con diversas fuentes de datos:
  - Archivos excel, bases de datos, texto plano (.csv,.txt)
  - Descarga de datos alojados en internet via REST o “web scraping”
- https://github.com/rstudio/RStartHere
- Shiny gallery: https://shiny.rstudio.com/gallery/
- Mucho más!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Creating Websites with R Markdown
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Amber Thomas
Alison Presmanes Hill
CRC Press
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ISSN: 2073-4859

The R Journal

The R Journal is the open access, refereed journal of the R project for statistical computing. It features short to medium length articles covering topics that should be of interest to users or developers of R. *The R Journal* intends to reach a wide audience and have a thorough review process. Papers are expected to be reasonably short, clearly written, not too technical, and of course focused on R. Authors of refereed articles should take care to:

- put their contribution in context, in particular discuss related R functions or packages;
- explain the motivation for their contribution;
- provide code examples that are reproducible.

Following revision of the content description of *The R Journal*, from January 2017 submitted articles may include:

Reviews and proposals:
surveying and discussing challenges and opportunities of potential importance for the broader R community, including proposals and proof-of-concept implementations.

Comparisons and benchmarking:
of implementations in base-R and contributed packages with each other, and where relevant with

R in LaTam

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- **SITIO** http://latin-r.com

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Conferencia Latinoamericana sobre el Uso de R en Investigación + Desarrollo

25 - 27 DE SEPTIEMBRE | 2019

SANTIAGO DE CHILE

Sábado 15 de diciembre

santiago2018.satrdays.org

R-Ladies

Organización mundial que promueve la diversidad de género en la comunidad **R** mediante encuentros y mentoreo en un **amigable** y **seguro**

La comunidad R sufre de una subrepresentación de las minorías de género (incluyendo pero no limitado a mujeres cis, mujeres trans, personas no binarias y agéneros) en cada uno de los roles y áreas de participación, como líderes, desarrolladores de paquetes, disertantes y participantes de conferencias, educadores y usuarios (see recent stats).

En 2010, un 9 % de los autores eran mujeres

Mair, P., Hofmann, E., Gruber, K., Hatzinger, R., Zeleis, A. and Hornik, K. (2015) Motivation, values, and work design as drivers of participation in the R open source project for statistical computing, *PNAS* https://doi.org/10.1073/pnas.1506047112

En 2016, un 11,4 % de quienes mantienen paquetes R eran mujeres

- http://forwards.github.io/data/

useR conference

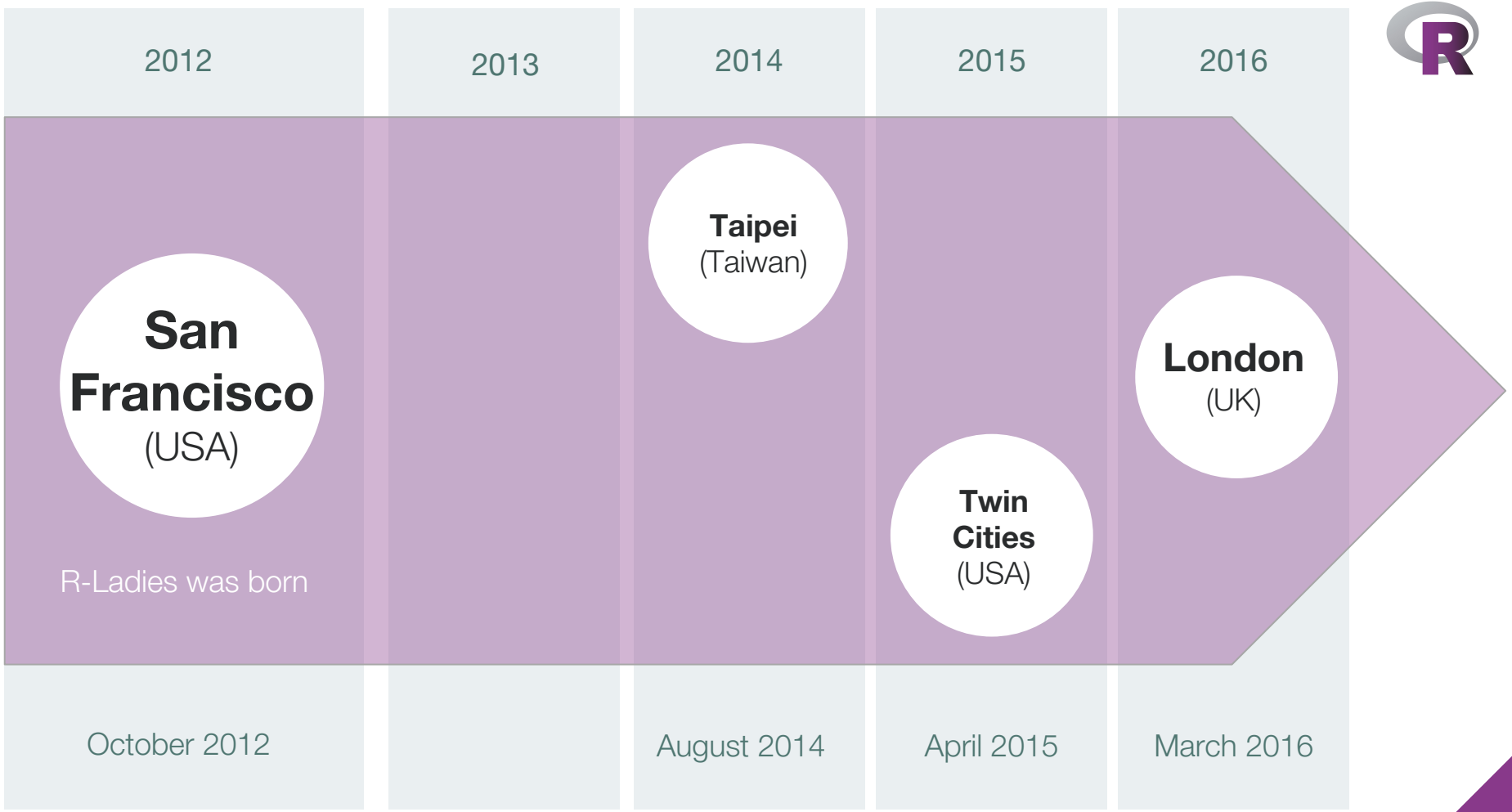
- En 2016 se vio un alza del 19 % al 28 % de asistencia femenina

Nuestra misión

Más mujeres y personas no-binarias

- programadores
- desarrolladores
- disertantes
- líderes

Más personas increíbles que integren la comunidad R y contribuyan desarrollando paquetes.


2012
2013
2014
2015
2016
San Francisco (USA)
R-Ladies was born
Taipei (Taiwan)
Twin Cities (USA)
London (UK)
October 2012
August 2014
April 2015
March 2016

¿Quiénes son?

Las cabezas organizadoras de R-Ladies

ALICE DAISH

CLAUDIA VITOLO

ERIN LEDELL

GABRIELA DE QUEIROZ

HANNAH FRICK

R-Ladies Global! (Agosto 2016)

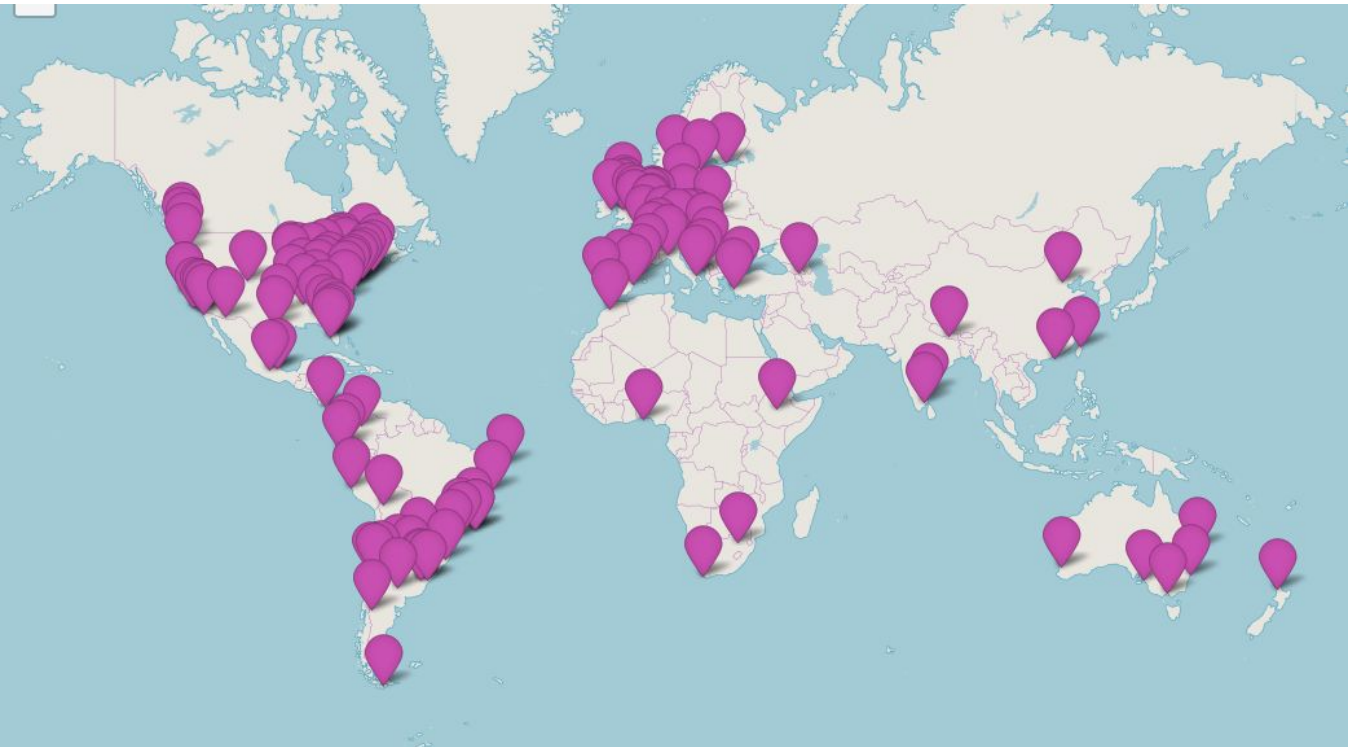
205
Cities

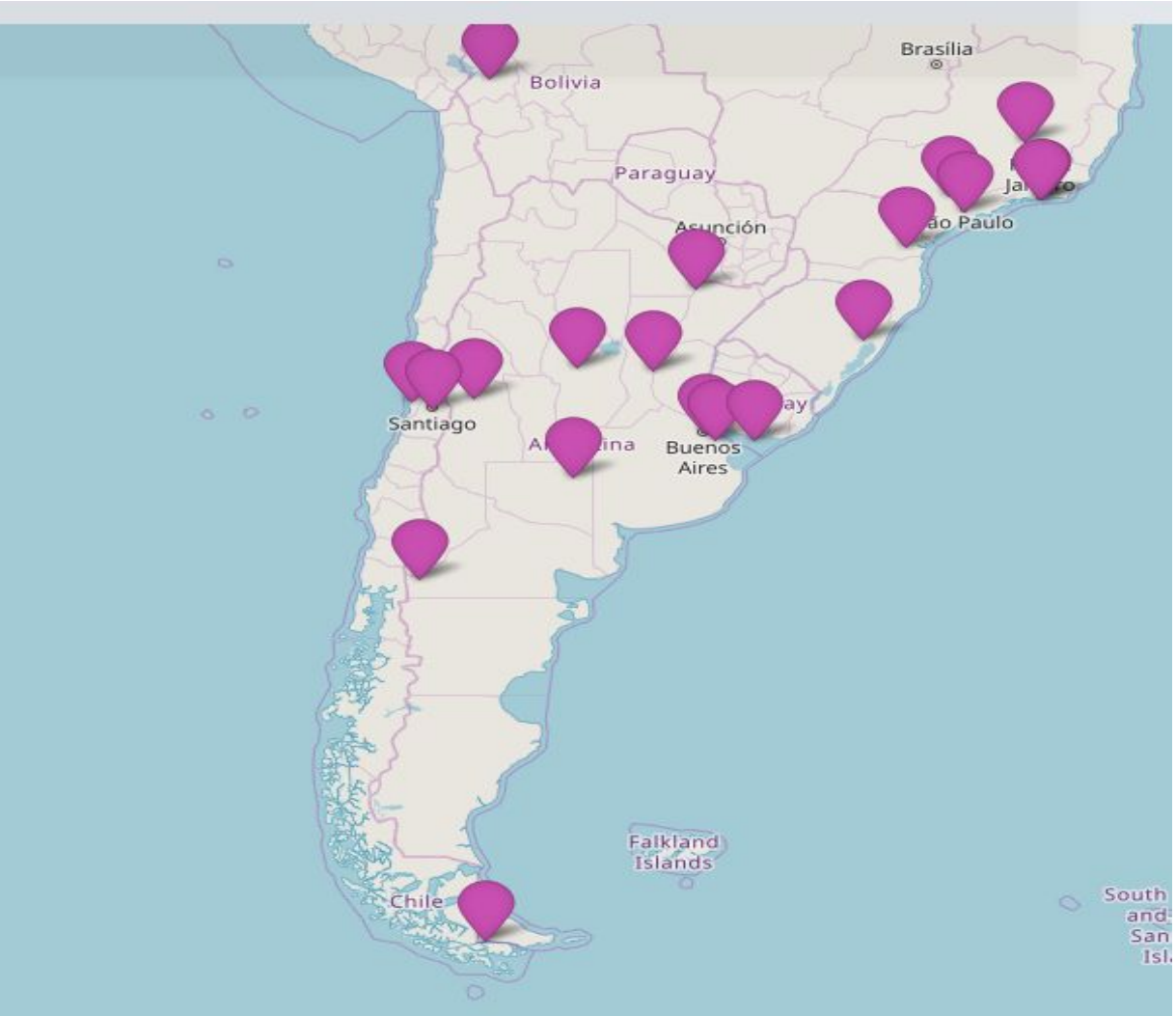
58
Countries

136
Has meetup page

118
R-Ladies on Twitter

R-Ladies





R-Ladies

https://gqueiroz.shinyapps.io/rshinylady/

¿Cómo ayudarnos?

¿Cómo nos puedes ayudar?

Apoya

A capítulos locales

- Lugar para evento
- Comida, bebida, sponsor

Recomienda

- R-Ladies directorio
- Oportunidades, por ejemplo, becas, conferencias

Inspira

Alza tu voz

- Unite R-Ladies
- Comparte código
- Inspira y apoya
- Enseña
- Tweet
- Blog

¡Gracias!

Envianos tu propuesta para próximos meetups

mendoza@rladies.org

https://www.meetup.com/es/rladies-mendoza

https://twitter.com/RLadiesMza

https://www.facebook.com/RLadiesMendoza

Ciencia de datos con R

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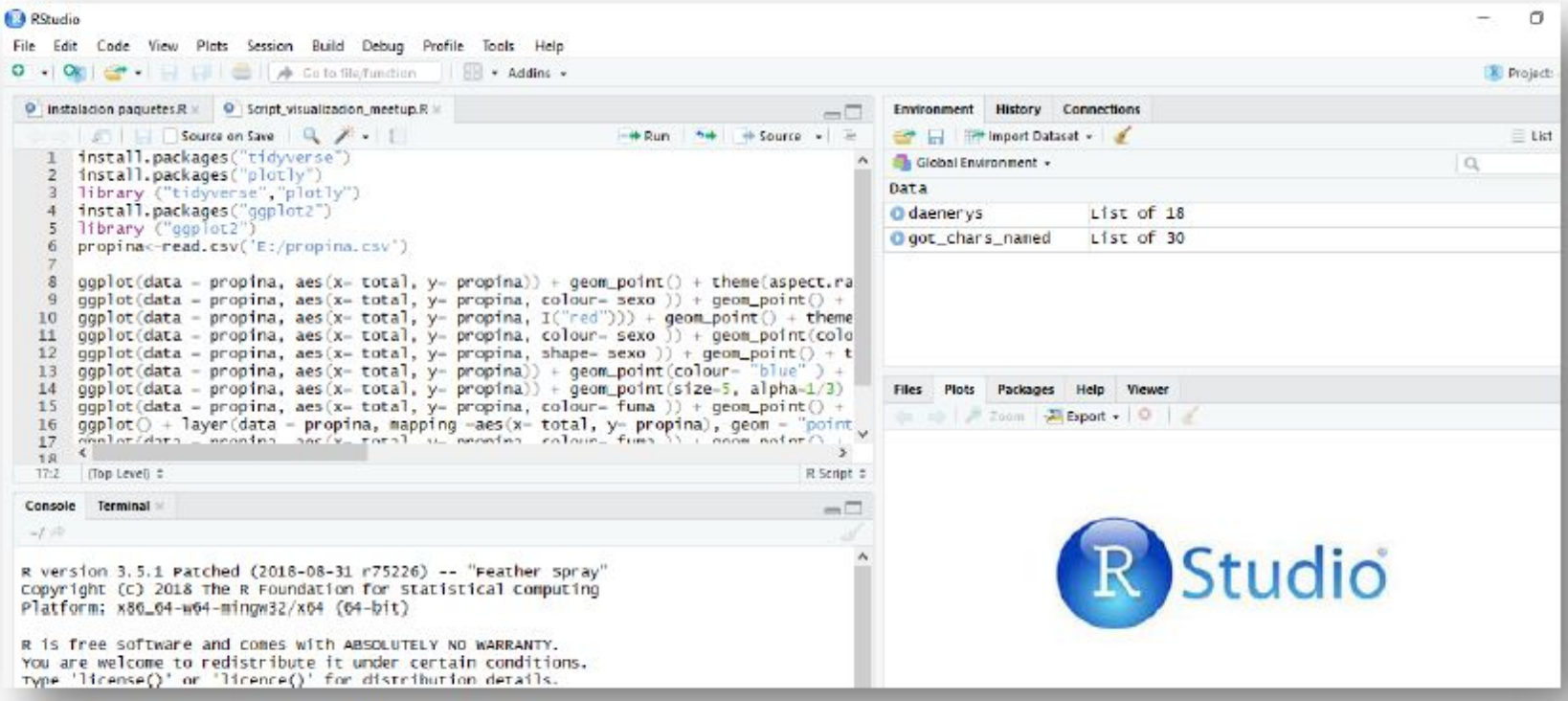
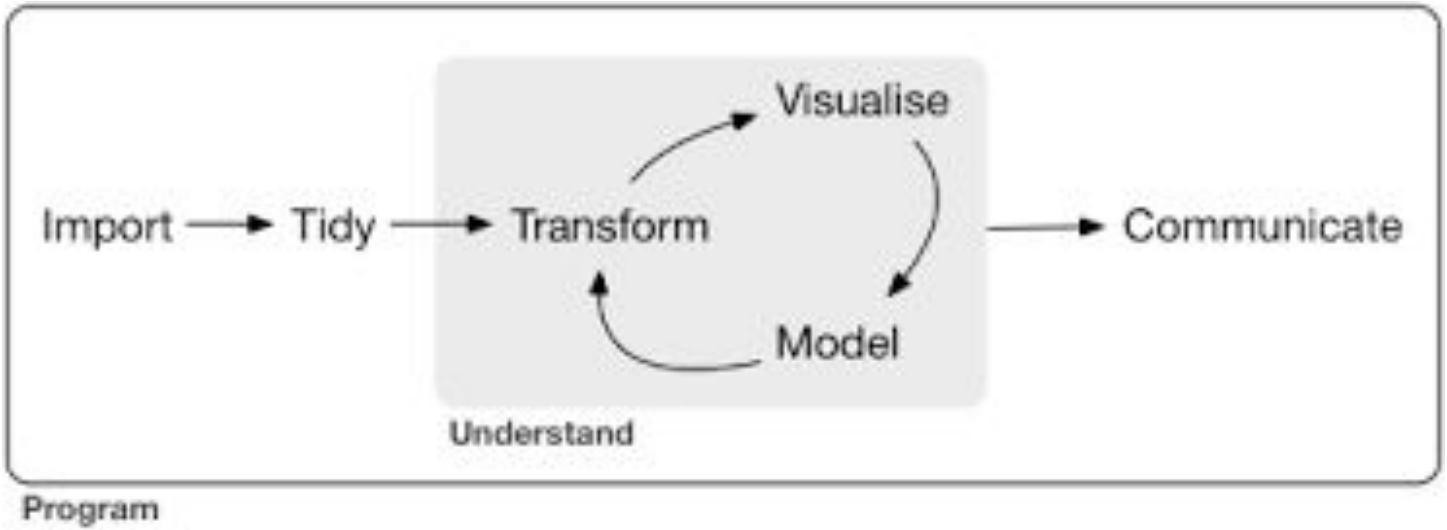
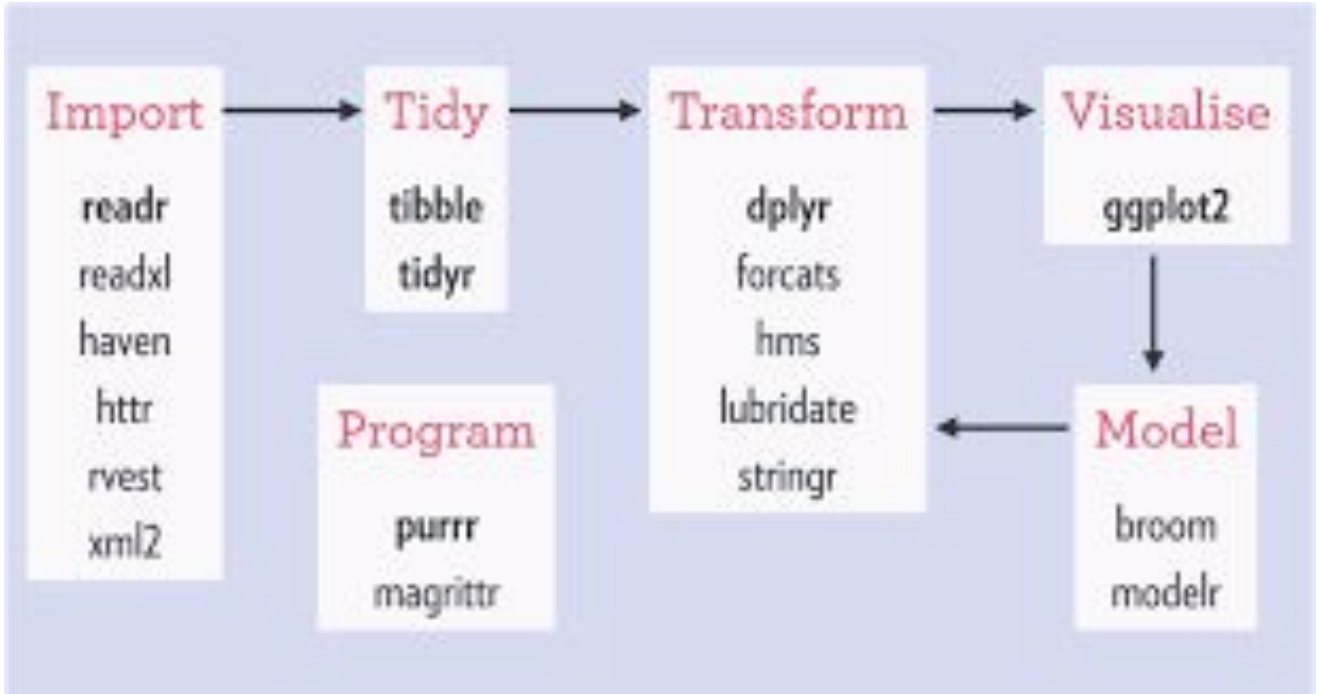
https://www.rstudio.com



Ciclo de datos



Ciclo de datos



¡Gracias!

Envianos tu propuesta para próximos meetups

mendoza@rladies.org

https://www.meetup.com/es/rladies-mendoza

https://twitter.com/RLadiesMza

https://www.facebook.com/RLadiesMendoza