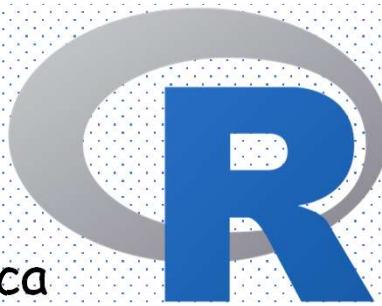


Programación en R
para el uso en
ciencias
agropecuarias

BIENVENIDOS



R es gratis!!

- R es un lenguaje de programación especializado para la estadística computacional (R project).
- En Agosto de 1993 fue diseñado por:



Ross Ihaka
(New Zealand Statistician)



Robert Gentleman
(Canadian Statistician)

Descargar R desde CRAN



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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 \(Debian, Fedora/Redhat, Ubuntu\)](#)
- [Download R for macOS](#)
- [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 (2022-06-23, Funny-Looking Kid) [R-4.2.1.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](#)

Questions About R

- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

La consola de R

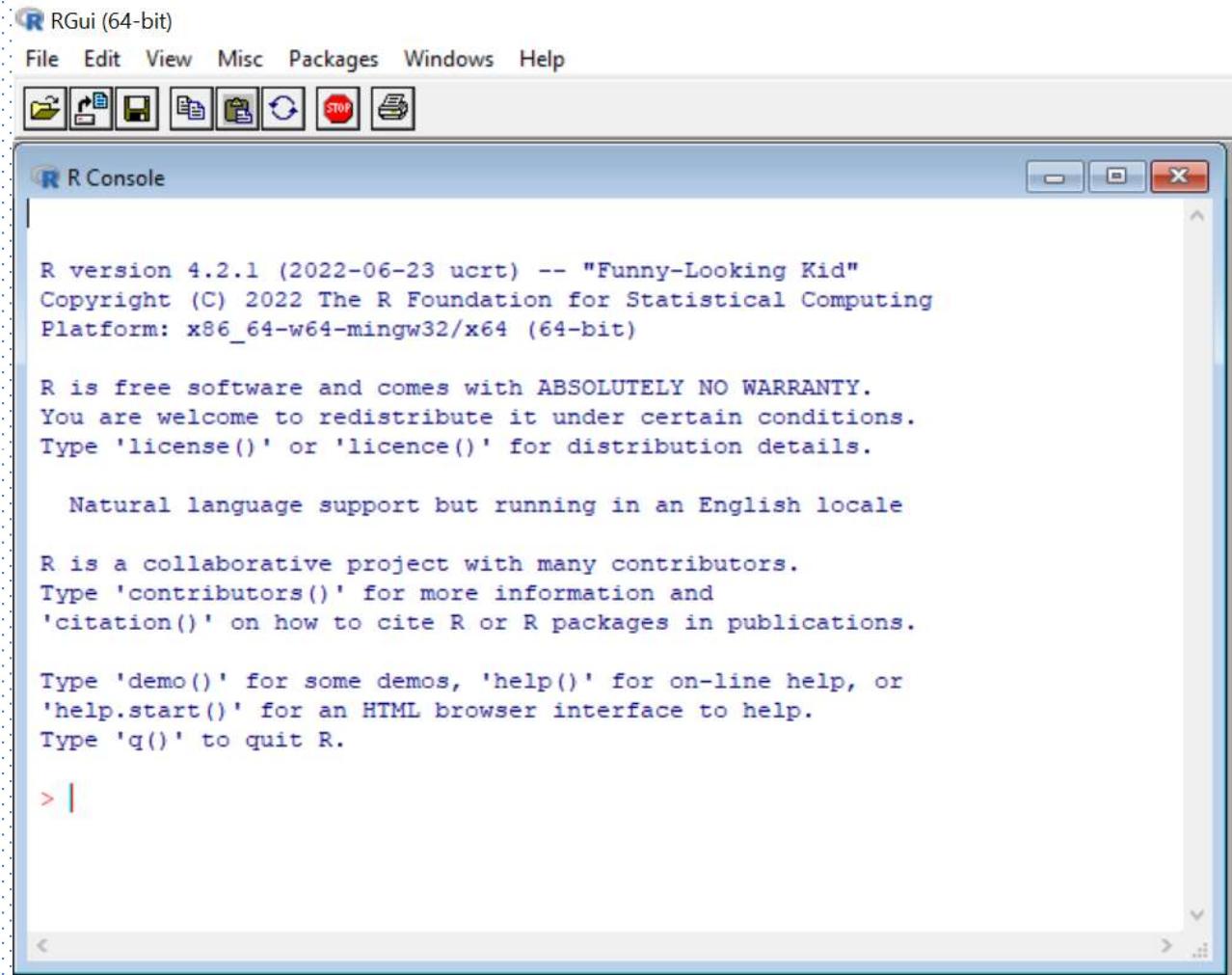
- R version

- R name

- R licence

- prompt >

(Símbolo que se encuentra antes del cursor)



Never Save R "Workspace Image":

- "Confía más en tu script que en tu memoria".

Using R: Don't save your workspace

Posted on April 2, 2017 by mrtnj in R bloggers | 0 Comments

This article was first published on [R - On unicorns and genes](#), and kindly contributed to [R-bloggers](#). You can report issue about the content on this page [here](#).

Want to share your content on R-bloggers? [click here](#) if you have a blog, or [here](#) if you don't.

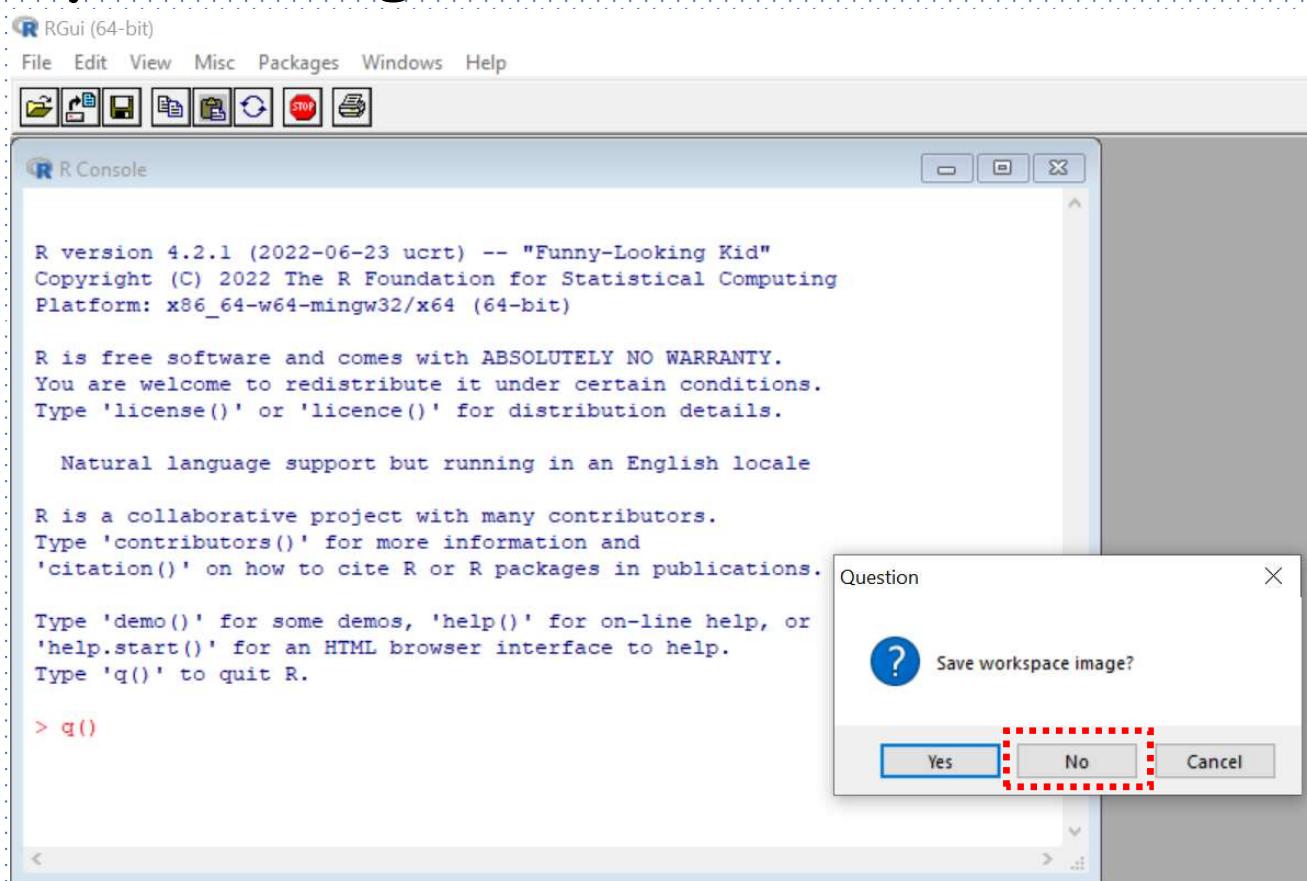
f Share

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To everyone learning R: Don't save your workspace.

When you exit an R session, you're faced with the question of whether or not to save your workspace. You should almost never answer yes. Saving your workspace creates an image of your current variables and functions, and saves them to a file called ".RData". When you re-open R from that working directory, the workspace will be loaded, and all these things will be available to you again. But you don't want that, so don't save your workspace.

[Fuente](#)



R como una calculadora

```
1
```

```
## [1] 1
```

R como una calculadora

```
1  
1 + 1
```

```
## [1] 1  
## [1] 2
```

R como una calculadora

```
1  
1 + 1  
34 / 40
```

```
## [1] 1  
## [1] 2  
## [1] 0.85
```

R como una calculadora

```
1  
1 + 1  
34 / 40  
5 < 4
```

```
## [1] 1  
## [1] 2  
## [1] 0.85  
## [1] FALSE
```

R como una calculadora

```
1  
1 + 1  
34 / 40  
5 < 4  
16 == 16
```

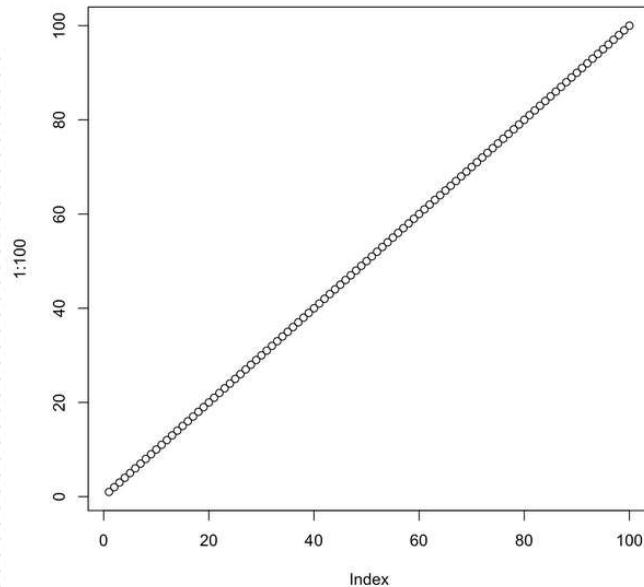
```
## [1] 1  
## [1] 2  
## [1] 0.85  
## [1] FALSE  
## [1] TRUE
```

Operadores					
Aritméticos		Comparativos		Lógicos	
+	adición	<	menor que	! x	NO lógico
-	substracción	>	mayor que	x & y	Y lógico
*	multiplicación	<=	menor o igual que	x && y	id.
/	división	>=	mayor o igual que	x y	O lógico
^	potencia	==	igual	x y	id.
%%	módulo	!=	diferente de	xor(x, y)	O exclusivo
%/%	división de enteros				

Graficando con R

Code Output

```
plot(1:100)
```





Funciones en R

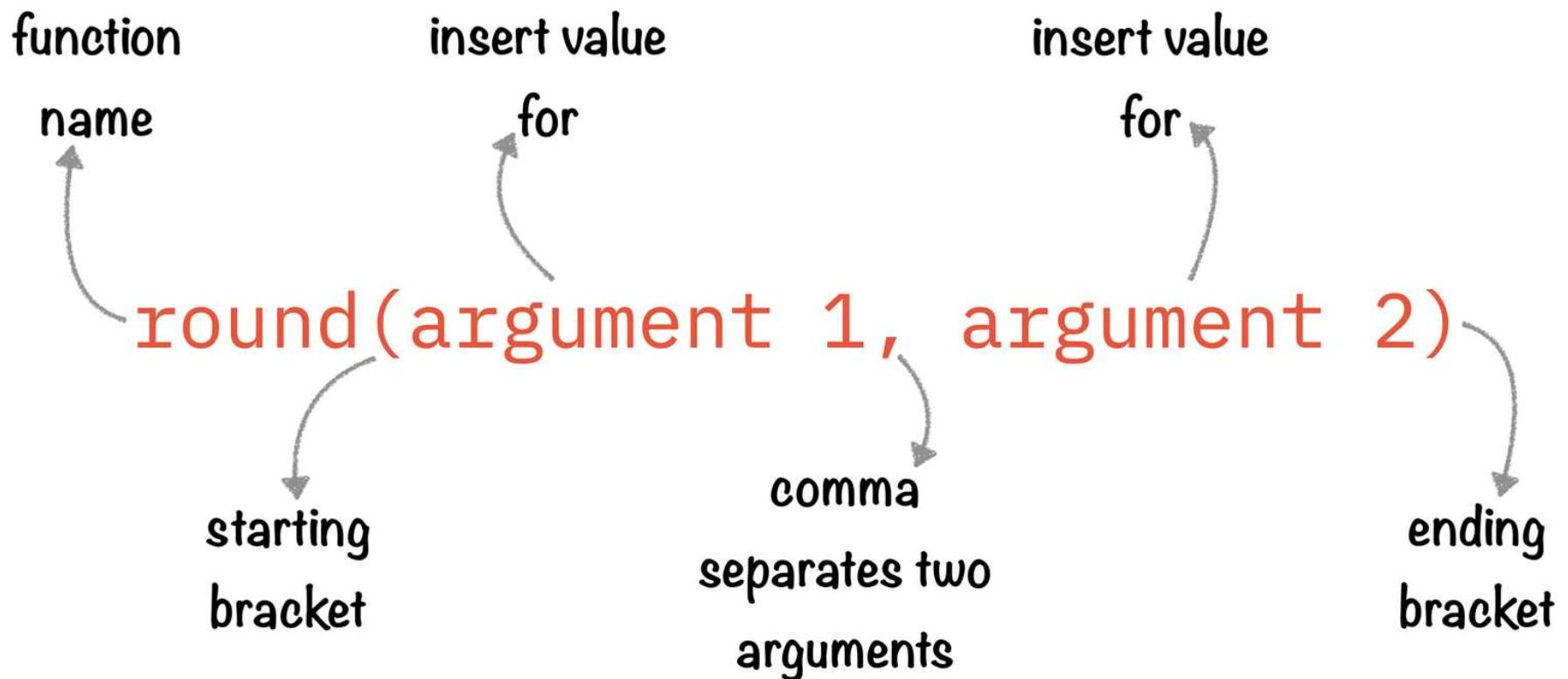
Una función, en un entorno de programación, es un conjunto de instrucciones. Un programador construye una función para evitar la repetición de la misma tarea, o para reducir la complejidad

Code Output

```
round(9.1565, 2)
```

```
## [1] 9.16
```

Estructura de una función en R



Función round

Code Output

```
round(x = 564.56743, digits = 2)
```

```
## [1] 564.57
```

Función raíz cuadrada

Code Output

```
sqrt(x = 9)
```

```
## [1] 3
```

Función secuencia

Code Output

```
seq.int(from = 10, to = 30, by = 5)  
## [1] 10 15 20 25 30
```



Comentarios en R

- Los humanos podemos leer los comentarios, pero nuestro ordenador pasará por encima de estos.
- En R, # es usado como el símbolo comentarios



Como agregar un comentario?

Code Output

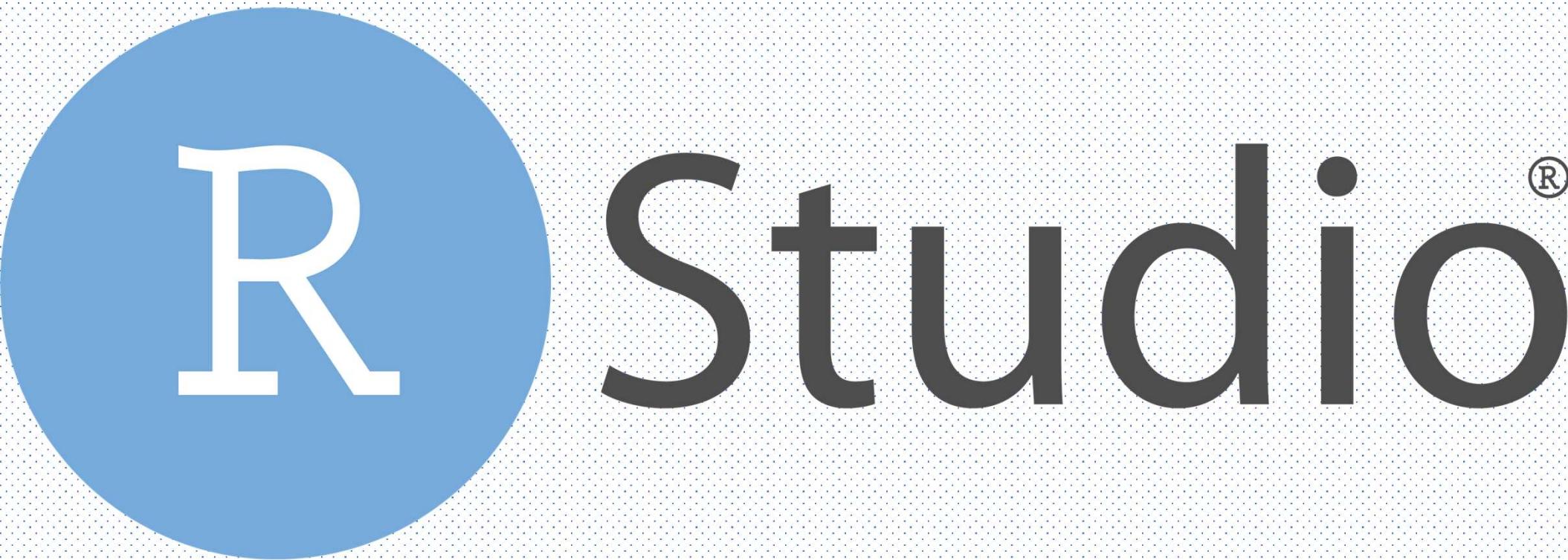
```
# secret code of happiness  
(1 + 4) - (3 * 5) / 10  
  
## r does not evaluate this  
# all these are comments  
# comments are very important  
  
## [1] 3.5
```

Hasta ahora todo esta muy bonito pero....

- R puede combinar graficas, tablas e imágenes en un solo archivo (R markdown).
- Publicar trabajos online o convertirlos en archivos word, pdf o html.
- Trabajar eficientemente con diferentes proyectos, guardarlos, compartirlos y rastrearlos.

Y para todo lo anterior necesitamos....





R Studio

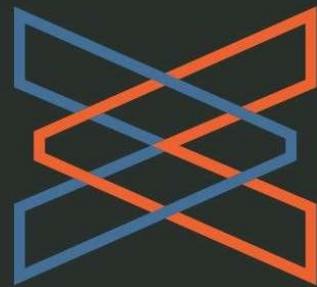
- 2009, Joseph J. Allaire fundó RStudio.
- 2011, fue lanzado RStudio IDE para R.
- "RStudio es usado como software libre y de acceso abierto enfocado hacia la ciencia de datos" (16 Jan 2022)



Joseph J. Allaire

RStudio is becoming Posit

Jul 27



posit™

R y R Studio

R: Engine



RStudio: Dashboard



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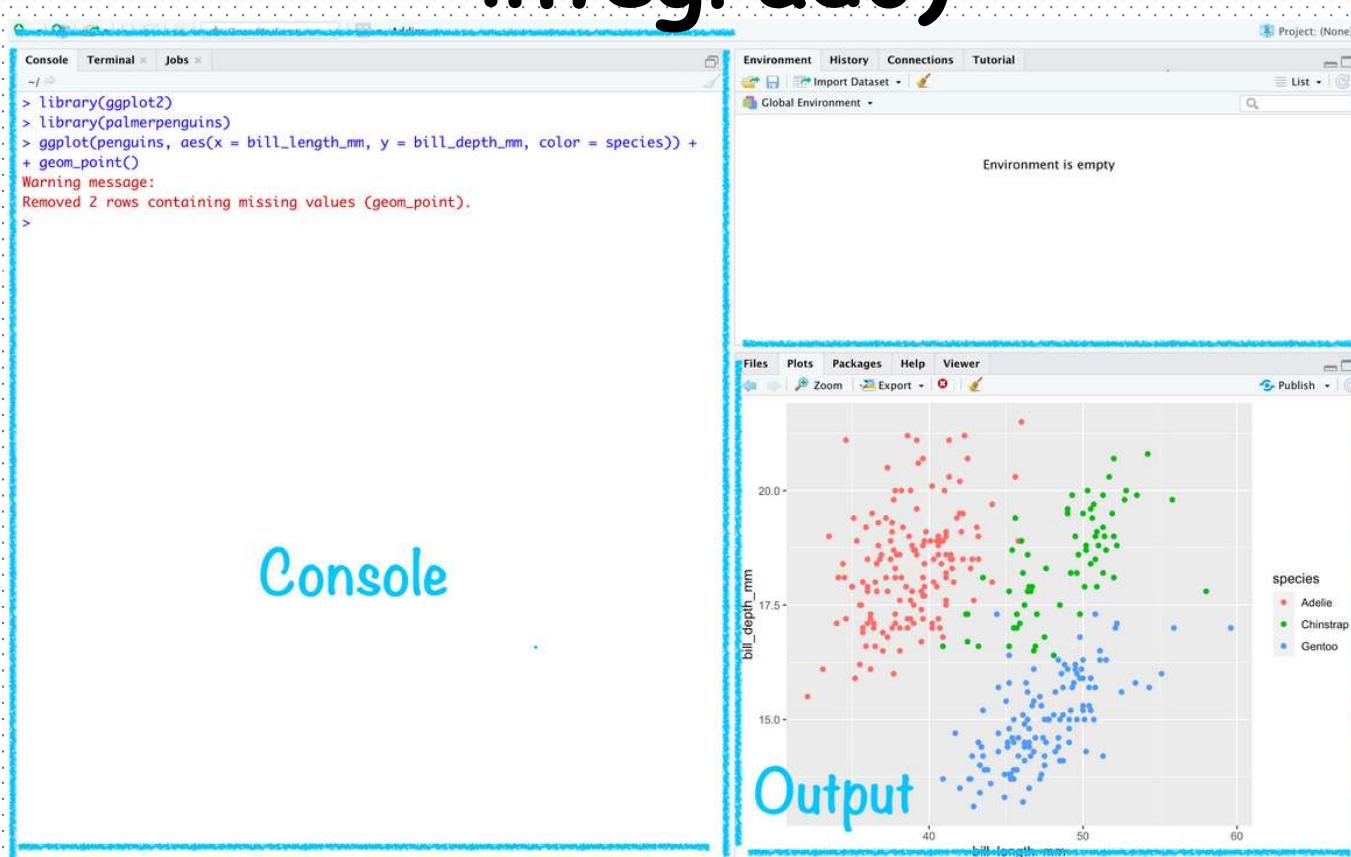
Download the RStudio IDE

Choose Your Version

The RStudio IDE is a set of integrated tools designed to help you be more productive with R and Python. It includes a console, syntax-highlighting editor that supports direct code execution, and a variety of robust tools for plotting, viewing history, debugging and managing your workspace.



R Studio (IDE: entorno de desarrollo integrado)



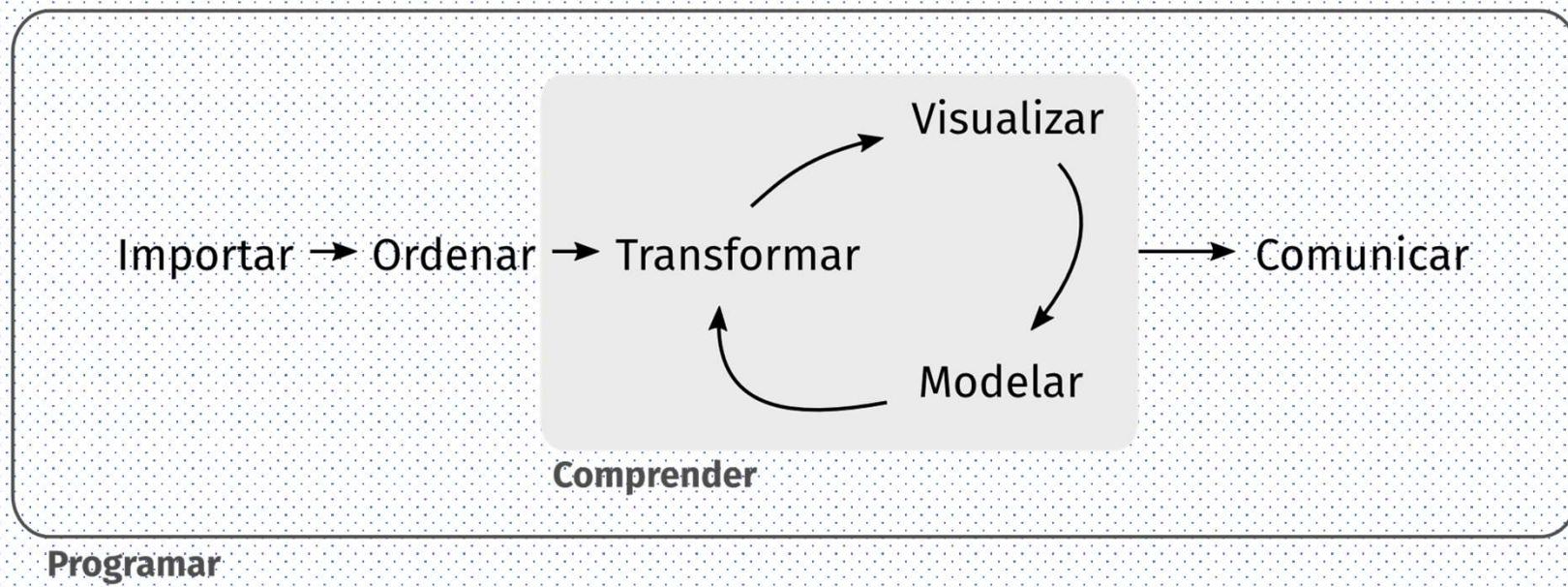


We all want to learn.

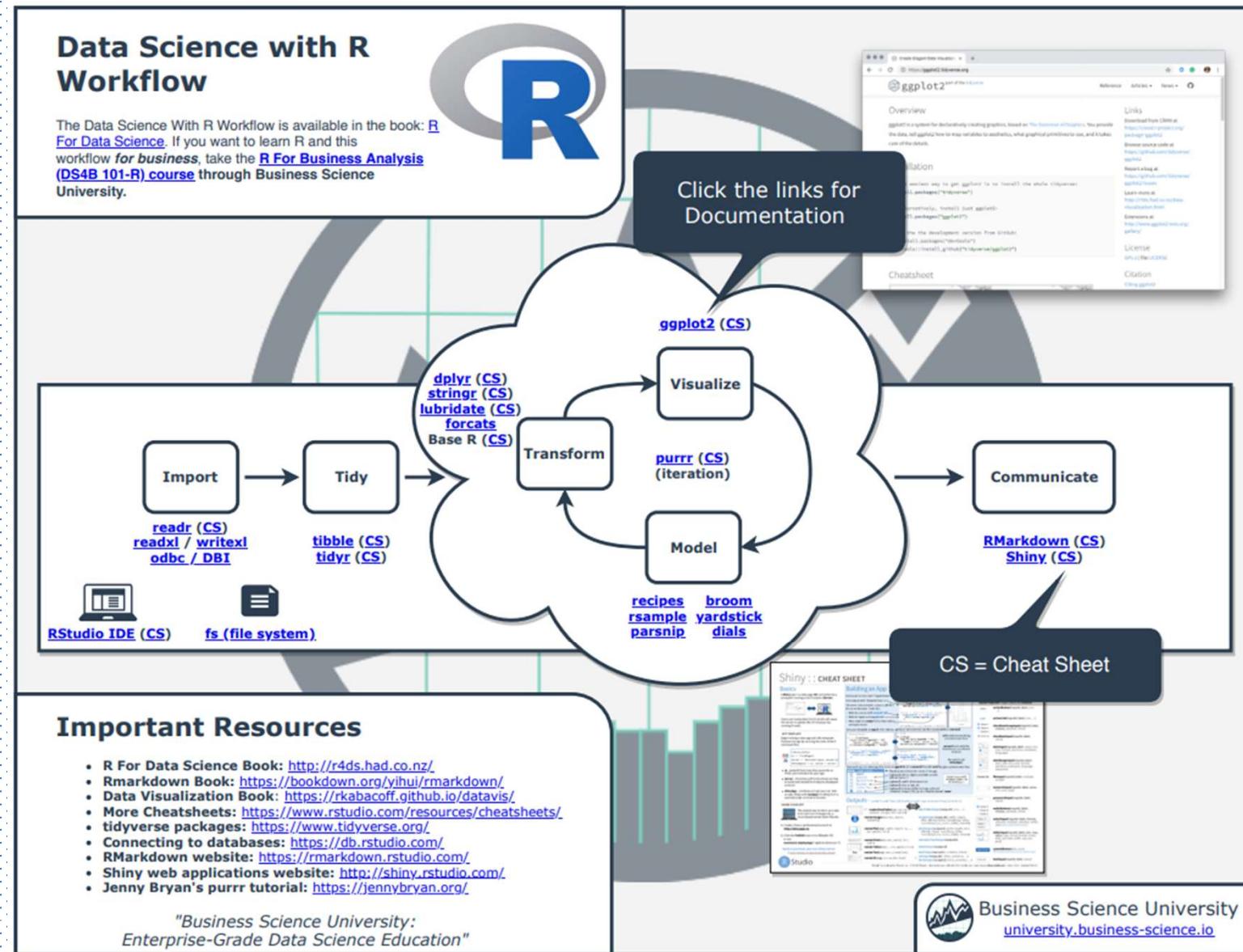
No one is born a data scientist. Every person who works with R today was once a complete beginner. No matter how much you know about the R ecosystem already, you'll always have more to learn.

At RStudio, we know that everyone is at a different stage in learning the vast ecosystem of R, ranging from rank beginner to seasoned data scientists to professional educators. Choose a starting point below, or catch up with us on our [blog](#).

R para ciencia de datos



R para ciencia de datos



Fuente:

Paquetes de R



Paquetes de R

- Al 17 de mayo de 2023, 19529 paquetes de R están disponibles en el CRAN
- "Un paquete de R es una colección de funciones, datos y documentación que amplia las capacidades de R. El uso de paquetes es la clave para el éxito en el uso de R."
- Ranking de los paquetes más descargados en el mundo. Fuente

Función para descargar paquetes

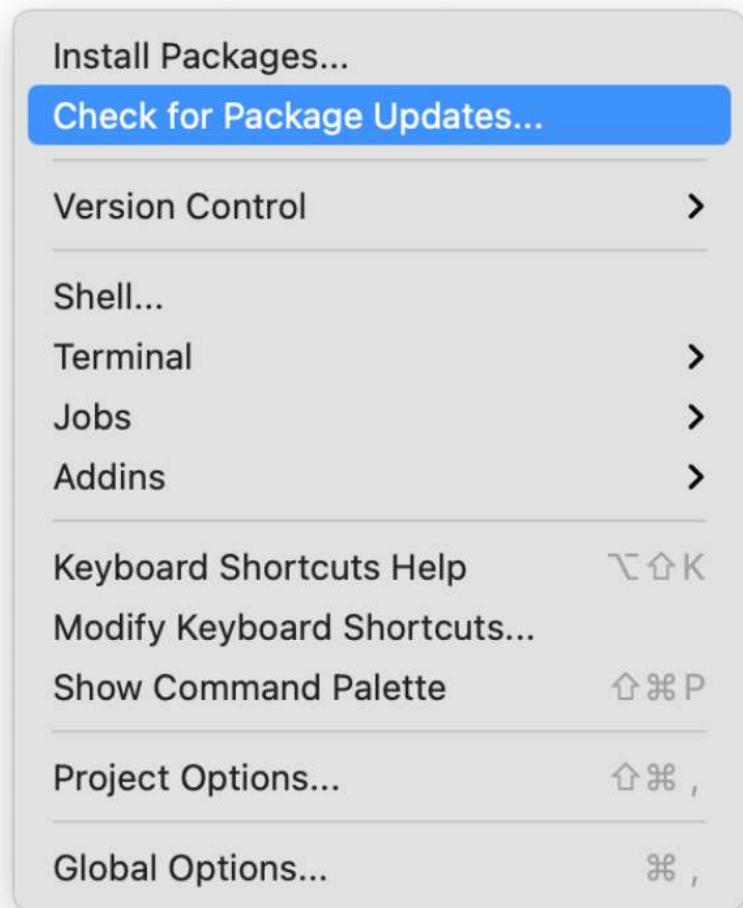
```
install.packages("tidyverse")
```

Función para usar paquetes

```
library(tidyverse)
```

Algo sobre los paquetes de R

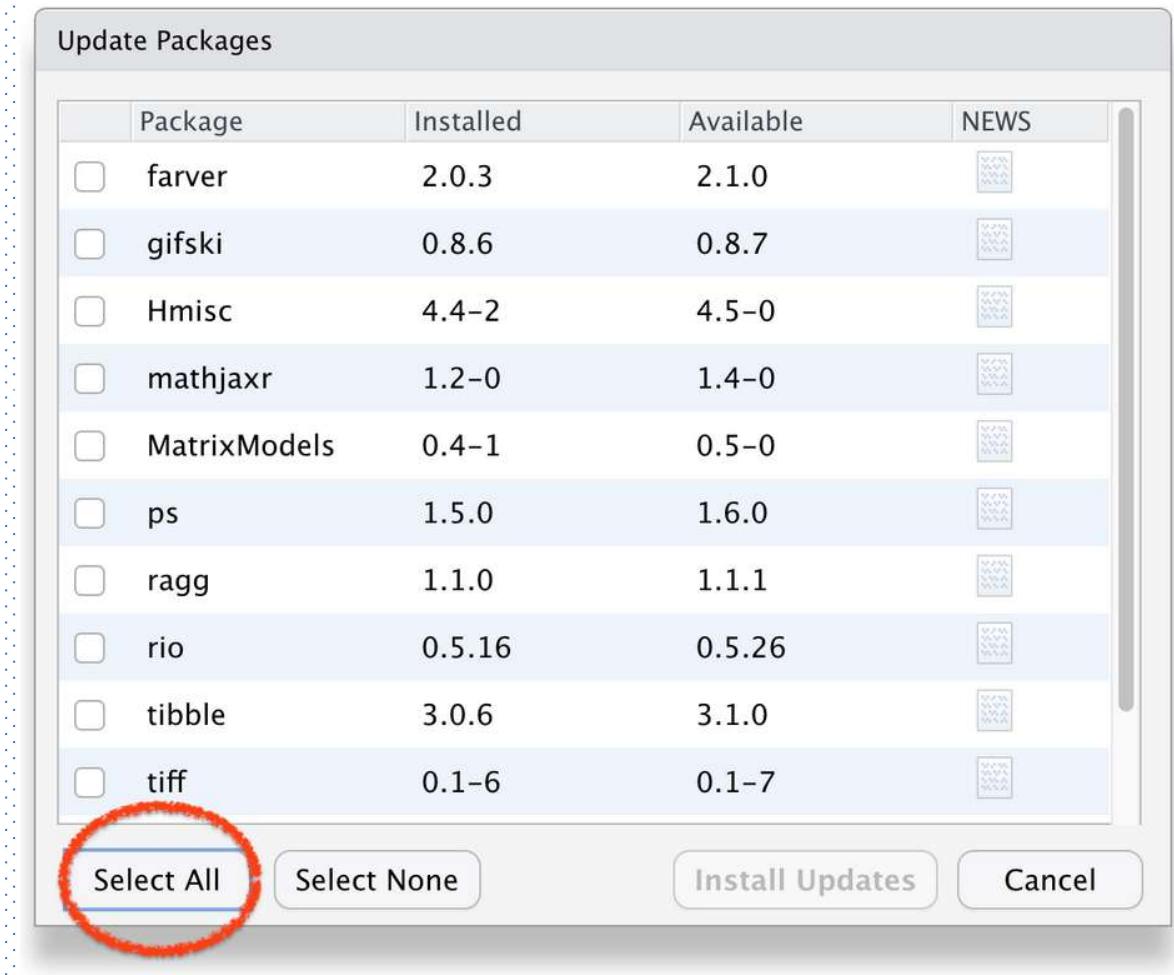
- Solo necesitas instalar los paquetes una sola vez.
- En cada documento de R, es necesario "llamar" una vez con la función library(), por ejemplo: library(ggplot2)
- Una vez instalados, luego de algún tiempo será necesario actualizar los paquetes.
- Si se desinstala R, automáticamente se pierden todos los paquetes.



Update Packages

	Package	Installed	Available	NEWS
<input type="checkbox"/>	farver	2.0.3	2.1.0	
<input type="checkbox"/>	gifski	0.8.6	0.8.7	
<input type="checkbox"/>	Hmisc	4.4-2	4.5-0	
<input type="checkbox"/>	mathjaxr	1.2-0	1.4-0	
<input type="checkbox"/>	MatrixModels	0.4-1	0.5-0	
<input type="checkbox"/>	ps	1.5.0	1.6.0	
<input type="checkbox"/>	ragg	1.1.0	1.1.1	
<input type="checkbox"/>	rio	0.5.16	0.5.26	
<input type="checkbox"/>	tibble	3.0.6	3.1.0	
<input type="checkbox"/>	tiff	0.1-6	0.1-7	

Select All **Select None** **Install Updates** **Cancel**



Update Packages

Package	Installed	Available	NEWS
<input checked="" type="checkbox"/> farver	2.0.3	2.1.0	
<input checked="" type="checkbox"/> gifski	0.8.6	0.8.7	
<input checked="" type="checkbox"/> Hmisc	4.4-2	4.5-0	
<input checked="" type="checkbox"/> mathjaxr	1.2-0	1.4-0	
<input checked="" type="checkbox"/> MatrixModels	0.4-1	0.5-0	
<input checked="" type="checkbox"/> ps	1.5.0	1.6.0	
<input checked="" type="checkbox"/> ragg	1.1.0	1.1.1	
<input checked="" type="checkbox"/> rio	0.5.16	0.5.26	
<input checked="" type="checkbox"/> tibble	3.0.6	3.1.0	
<input checked="" type="checkbox"/> tiff	0.1-6	0.1-7	

Packages

Name	Description	Version	Actions
System Library			
<input type="checkbox"/> abind	Combine Multidimensional Arrays	1.4-5	
<input type="checkbox"/> afex	Analysis of Factorial Experiments	0.28-1	
<input type="checkbox"/> airports	Data on Airports	0.1.0	
<input type="checkbox"/> amap	Another Multidimensional Analysis Package	0.8-18	
<input type="checkbox"/> AsioHeaders	'Asio' C++ Header Files	1.16.1-1	
<input type="checkbox"/> askpass	Safe Password Entry for R, Git, and SSH	1.1	
<input type="checkbox"/> assertthat	Easy Pre and Post Assertions	0.2.1	
<input type="checkbox"/> av	Working with Audio and Video in R	0.5.1	
<input type="checkbox"/> babynames	US Baby Names 1880-2017	1.0.0	
<input type="checkbox"/> backports	Reimplementations of Functions Introduced Since R-3.0.0	1.2.1	
<input checked="" type="checkbox"/> base	The R Base Package	4.0.2	
<input type="checkbox"/> base64enc	Tools for base64 encoding	0.1-3	
<input type="checkbox"/> BayesFactor	Computation of Bayes Factors for Common Designs	0.9.12-4.2	
<input type="checkbox"/> bayestestR	Understand and Describe Bayesian Models and Posterior Distributions	0.8.2	
<input type="checkbox"/> bbmle	Tools for General Maximum Likelihood Estimation	1.0.23.1	
<input type="checkbox"/> BDgraph	Bayesian Structure Learning in Graphical Models using Birth-Death MCMC	2.63	
<input type="checkbox"/> bdsmatrix	Routines for Block Diagonal Symmetric Matrices	1.3-4	

s de datos

Objetos

- Son solo un nombre que se puede utilizar para llamar a los datos almacenados

Creación de un objeto

```
salary <- c(20, 30, 40, 50, -10)
salary
## [1] 20 30 40 50 -10
```

Creación de un objeto

```
name <- c("Ram", "Rani", "Ali", "Preeti", "John")
name
## [1] "Ram"      "Rani"     "Ali"      "Preeti"
## [5] "John"
```

Creación de un objeto

```
place <- c("ny", "ber", "dhl", "tko", "lon")
place
## [1] "ny"  "ber" "dhl" "tko" "lon"
```



Ayuda en R

Using Console >

in console type ?your query

for example ?ggplot

RStudio: pkg Help Docs

The screenshot shows the RStudio interface with the 'Packages' tab selected. A blue arrow points from the text 'CRAN help' to a small globe icon in the top right corner of the package grid. This icon is highlighted with a red circle. The grid lists various R packages with their names, descriptions, and versions. The 'base' package is checked.

Name	Description	Version
abind	Combine Multidimensional Arrays	1.4-5
afex	Analysis of Factorial Experiments	0.28-1
airports	Data on Airports	0.1.0
amap	Another Multidimensional Analysis Package	0.8-18
AsioHeaders	'Asio' C++ Header Files	1.16.1-1
askpass	Safe Password Entry for R, Git, and SSH	1.1
assertthat	Easy Pre and Post Assertions	0.2.1
av	Working with Audio and Video in R	0.5.1
babynames	US Baby Names 1880-2017	1.0.0
backports	Reimplementations of Functions Introduced Since R-3.0.0	1.2.1
<input checked="" type="checkbox"/> base	The R Base Package	4.0.2
base64enc	Tools for base64 encoding	0.1-3
BayesFactor	Computation of Bayes Factors for Common Designs	0.9.12-4.2
bayestestR	Understand and Describe Bayesian Models and Posterior Distributions	0.8.2

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Topic		Replies	Views	Activity
□ Problem in predict.fregre.fd function: could not find function "is.na.fdata" • General		3	34	16m
□ Shiny performing long-running calculations		11	90	31m
□ Help please new to R • General		5	75	1h
🔒 □ Desperate for help! Adding count to bins using gghistogram() •		0	20	1h
□ MosaicMiss option • General		0	31	2h
□ Hi , can any one help me out from this issue when i try to save the file in Rstudio it will save in .R format but when i try to open in folder where it as saved. it is saved in PDF format i want to save the file in .R format only please help me • RStudio IDE		0	13	2h
<small>last visit</small>				
□ Summing columns for habitat selection test • General		3	55	3h
☒ Try Catch R SHiny show modal does not pop up • shiny		1	31	3h

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Plotting several jpeg images in a single display

Ask Question

Asked 10 years, 2 months ago Active 10 years, 2 months ago Viewed 10k times

7

I need to plot and display several jpeg images in a single combined display (or canvas?). For example, suppose I have images {a,b,c,d}.jpg, each of different size, and I would like to plot them on one page in a 2x2 grid. It would be also nice to be able to set a title for each subplot.

1

I've been thoroughly looking for a solution, but couldn't find out how to do it, so any ideas would really help. I would preferably use a solution that is based on the EBImage package.

[image](#) [r](#) [plot](#)[share](#) [improve this question](#) [follow](#)

asked Sep 8 '10 at 13:16



user442446

979 ● 2 ● 10 ● 13

Thanks for the answers. The real problem was handling image data, with the rimage package I got the image data from the EBImage package to display better. I still get terribly large margins when organizing the plots with the `mrow()` parameter, although I've played a lot with the `oma` and `mar` parameters. – [user442446](#) Sep 13 '10 at 7:52

[add a comment](#)

3 Answers

[Active](#) [Oldest](#) [Votes](#)

4

There are two ways how to arrange several plots with base graph functions, namely `par(mrow=c(rows,columns))` (substitute `rows` and `columns` with integers) and `layout(mat)` where `mat` is a matrix like `matrix(c(1,2,3,4))`.

The Overflow Blog

- The Loop: Adding review guidance to the help center
- Podcast 288: Tim Berners-Lee wants to put you in a pod. A web pod.

Featured on Meta

- A big thank you, Tim Post
- "Question closed" notifications experiment results and graduation

37 people chatting

R Public

2 hours ago - Natty



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@revodavid [Follow](#)

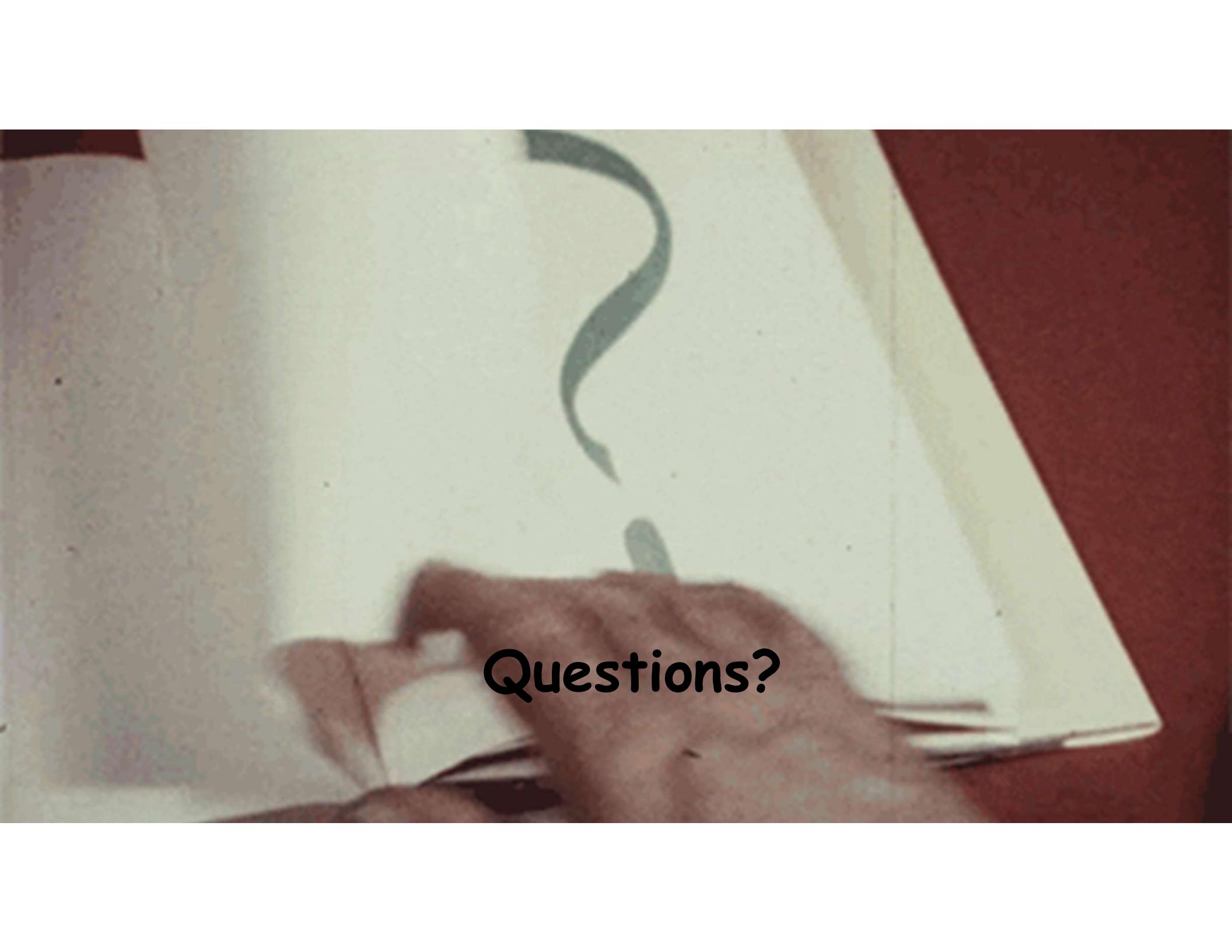
Cloud Advocate at Microsoft. Tweets about AI, Data Science, R #rstats
and other things I love: culture, politics, gaming, my husband
@nonfamousjay. He/him.

 **Meghan Hall**
@MeghanMHall [Follow](#)

Data analyst by day, hockey nerd by night. Likes: goalie pulling, penalty
killing, #rstats & Tableau. Writes @HockeyGraphs. She/her. Gmail:

Paquetes de R para ciencias agropecuarias



A painting of a white sailboat on a calm sea under a clear blue sky. The boat has a single mast and a sail that is partially unfurled. The water is a light blue-grey, and the horizon line is low. In the background, there are some distant, small landmasses or hills. The overall style is somewhat minimalist and peaceful.

Questions?