



Introducción a R Studio[®]

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<https://cran.itam.mx>



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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](#)
- [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 (2020-10-10, Bunny-Wunnies Freak Out) [R-4.0.3.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.

What are R and CRAN?

R is ‘GNU S’, a freely available language and environment for statistical computing and graphics which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc. Please consult the [R project homepage](#) for further information.



<https://rstudio.com/products/rstudio/download/>

All Installers

Linux users may need to [import RStudio's public code-signing key](#) prior to installation, depending on the operating system's security policy.

RStudio requires a 64-bit operating system. If you are on a 32 bit system, you can use an [older version of RStudio](#).

OS	Download	Size	SHA-256
Windows 10/8/7	 RStudio-1.3.1093.exe	171.62 MB	62b9e60a
macOS 10.13+	 RStudio-1.3.1093.dmg	148.66 MB	bdc4d3a4
Ubuntu 16	 rstudio-1.3.1093-amd64.deb	124.33 MB	72f05048
Ubuntu 18/Debian 10	 rstudio-1.3.1093-amd64.deb	126.80 MB	ff222177
Fedora 19/Red Hat 7	 rstudio-1.3.1093-x86_64.rpm	146.96 MB	ed1f6ef8
Fedora 28/Red Hat 8	 rstudio-1.3.1093-x86_64.rpm	151.05 MB	01a978f3
Debian 9	 rstudio-1.3.1093-amd64.deb	127.00 MB	a747f9f9
SLES/OpenSUSE 12	 rstudio-1.3.1093-x86_64.rpm	119.43 MB	5016cbcf
OpenSUSE 15	 rstudio-1.3.1093-x86_64.rpm	128.40 MB	cf47e32d





<https://rstudio.com/products/rstudio/download/preview/>

Desktop Version

Installers	Size	Date	SHA-256
RStudio 1.4.1081 - Ubuntu 18/Debian 10 (64-bit)	120.61 MB	2020-12-05	edb4cef2
RStudio 1.4.1081 - Fedora 28/Red Hat 8 (64-bit)	137.99 MB	2020-12-05	a6b7340e
RStudio 1.4.1081 - Debian 9 (64-bit)	120.88 MB	2020-12-05	930b1962
RStudio 1.4.1081 - macOS 10.13+ (64-bit)	152.78 MB	2020-12-05	b85d0b08
RStudio 1.4.1081 - OpenSUSE 15 (64-bit)	122.00 MB	2020-12-05	05da2c25
RStudio 1.4.1081 - Fedora 19/Red Hat 7 (64-bit)	138.01 MB	2020-12-05	22fdfcb4
RStudio 1.4.1081 - Windows 10/8/7 (64-bit)	156.95 MB	2020-12-05	0e660740
RStudio 1.4.1081 - Ubuntu 16 (64-bit)	119.96 MB	2020-12-05	1f0484bf







The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools (which is currently selected), Window, and Help. The main window contains the R console output, which displays the standard R startup message, license information, and a note about natural language support. A small green box highlights the text "Natural language support but running in an English locale". Below the console, there's a decorative ASCII art representation of a tree. The right side of the interface features the Global Environment pane, which is currently empty, indicated by the message "Environment is empty". The bottom navigation bar includes tabs for Files, Plots, Packages, Help, and Viewer.







The screenshot shows the RStudio interface with the following details:

- Top Bar:** RStudio, File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Window, Help.
- Toolbar:** Go to file/function, Addins.
- Console:** Displays R version 4.0.3 (2020-10-10) -- "Bunny-Wunnies Freak Out".
- Environment:** Shows "Environment is empty".
- Global Environment:** Shows "Global Environment".
- Options Dialog:** The "General" tab is selected under the "Code" category. It contains the following settings:
 - Highlight selected word (checked)
 - Highlight selected line (unchecked)
 - Show line numbers (checked)
 - Show margin (unchecked)
 - Margin column: 80
 - Show whitespace characters (unchecked)
 - Show indent guides (unchecked)
 - Blinking cursor (checked)
 - Allow scroll past end of document (unchecked)
 - Allow drag and drop of text (checked)
 - Highlight R function calls (unchecked)
 - Rainbow parentheses (checked)
- Bottom Right:** A blue arrow points from the "Rainbow parentheses" checkbox towards the text "v1.4".
- Stylized Tree:** A large, green, stylized tree graphic is visible on the left side of the interface.





The screenshot shows the RStudio interface with the 'Appearance' tab selected in the 'Options' dialog box. The 'Editor theme:' dropdown is set to 'Vibrant Ink'. The right panel displays the source code for the 'plot' function, which is used for plotting R objects. The code includes logic to handle different types of inputs and arguments like 'x', 'y', and 'ylab'. The RStudio environment pane indicates that the environment is empty.

```
# plotting of R objects
plot <- function (x, y, ...)
{
  if (is.function(x) && is.null(attr(x, "class")))
  {
    if (missing(y))
      y <- NULL

    # check for ylab argument
    hasylab <- function(...)
      !all(is.na(
        pmatch(names(list(...)),
              "ylab")))
  }

  if (hasylab(...))
    plot.function(x, y, ...)

  else
    plot.function(
      x, y,
      ylab = paste(
        deparse(substitute(x)),
        "(x)"),
      ...)

  else
    UseMethod("plot")
}
```







The screenshot shows the RStudio interface with the 'File' menu open. The menu includes options like 'New File', 'Open File...', 'Import Dataset', 'Save', 'Print...', 'Close', and 'Quit Session...'. A tooltip message at the bottom left reads: '¿Quieres saber la diferencia entre un maestro y un aprendiz? El maestro ha fallado más veces de las que el principiante lo ha intentado.' The RStudio environment pane on the right shows an empty global environment.

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Window Help

New File ►

New Project...

Open File... ⌘O

Open File in New Column...

Recent Files ►

Open Project...

Open Project in New Session...

Recent Projects ►

Import Dataset ►

Save ⌘S

Save As...

Save All ⌘⌘S

Publish...

Print...

Close ⌘W

Close All ⌘⌘W

Close All Except Current ⌘⌘⌘W

Close Project

Quit Session... ⌘Q

R Script ⌘N

R Notebook

R Markdown...

Shiny Web App...

Plumber API...

C File

C++ File

Header File

Markdown File

HTML File

CSS File

JavaScript File

D3 Script

Python Script

Shell Script

SQL Script

Stan File

Text File

R Sweave

R HTML

R Presentation

R Documentation...

Environment History Connections Tutorial

Import Dataset

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

	Name	Size	Modified
✓	.gitignore	12 B	Jul 2, 2023
✓	.httr-oauth	0 B	Jul 2, 2023
✓	.r		
✓	.RData	2.5 KB	Nov 13, 2023
✓	.Renviron	17 B	Aug 5, 2023
✓	.Rhistory	1 KB	Nov 13, 2023
✓	.Rprofile	583 B	Aug 7, 2023
✓	Alzheimer pathways.png	306.9 KB	Jul 19, 2023
✓	anaconda3		
✓	Applications		
✓	bbb		
✓	Bitso_LTC		
✓	CDSB2020_minirepo		
✓	CDSB2020minirepo		
✓	CellDesignerSim		
✓	CmapToolsLogs		
✓	Correlation_plot_datatraining.png	53.5 KB	Feb 27, 2023
✓	CriptoDummy		
✓	CytoscapeConfiguration		



RStudio File Edit Code View Plots Session Build Debug Profile Tools Window Help

Untitled1 x Addins Go to file/function Project: (None)

Source on Save Run Source List C

1 2 3 4

• Editor de código

• Consola de R

R version 4.0.3 (2020-10-10) -- "Bunny-Wunnies Freak Out"
Copyright (C) 2020 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin17.0.0 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Environment History Connections Tutorial Import Dataset Global Environment

- Datos en el ambiente
- Historial
- Git

Files Plots Packages Help Viewer New Folder Delete Rename More

Home

Name	Size	Modified
.gitignore	12 B	Jul 2, 2020
.httr-oauth	0 B	Jul 2, 2020
.r		
.RData	2.5 KB	Nov 13, 2020
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.Rhistory	1 KB	Nov 13, 2020
.Rprofile	583 B	Aug 7, 2020
Alzheimer_patient_data.csv	306.9 KB	Jul 19, 2020
anaconda3		
Applications		
bbb		
Bitso_LTC		
CDSB2020_minirepo		
CDSB2020minirepo		
CellDesignerSim		
CmapToolsLogs		
Correlation_plot_datatraining.png	53.5 KB	Feb 27, 2021
CriptoDummy		
CytoscapeConfiguration		

Plots Archivos Ayuda Paqueterías



RStudio File Edit Code View Plots Session Build Debug Profile Tools Window Help

RStudio

Addins

Untitled2 x Untitled1* x

Source Source

1 1

Environment History Connections Tutorial

Import Dataset List C

R Global Environment

Environment is empty

File Plots Packages Help Viewer

New Folder Delete Rename More

Home

Name	Size	Modified	
.gitignore	12 B	Jul 2, 2018,	
.httr-oauth	0 B	Jul 2, 2018,	
.r	2.5 KB	Nov 13, 2018	
.RData	17 B	Aug 5, 2020	
.Renvironment	1 KB	Nov 13, 2018	
.Rhistory	583 B	Aug 7, 2020	
.Rprofile	Alzheimer pathways.png	306.9 KB	Jul 19, 2018
anaconda3			
Applications			
bbb			
Bitso_LTC			
CDSB2020_minirepo			
CDSB2020minirepo			
CellDesignerSim			
CmapToolsLogs			
Correlation_plot_datatraining.png	53.5 KB	Feb 27, 2018	
CriptoDummy			
CytoscapeConfiguration			

Options

R General Code Console Appearance Pane Layout Packages R Markdown Sweave Spelling Git/SVN Publishing Terminal Accessibility Python

Choose the layout of the panels in RStudio by selecting from the controls in each panel. Add up to three additional Source Columns to the left side of the layout.

Add Column Remove Column

Source Add column

Environment, History, Connections Packages Help Build VCS

Console

Files, Plots, Packages, Help,

Environment History Files Plots Connections Packages Help Build VCS

OK Cancel Apply

You are welcome to redistribute it under certain conditions. Type 'license()' or 'licence()' for distribution details.

1:1 (Top Level) R Script





RStudio File Edit Code View Plots Session Build Debug Profile Tools Window Help

Untitled2 x Untitled1 x

1

1

Environment History Connections Tutorial

Project: (None)

Import Dataset List C

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

	Name	Size	Modified
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	.httr-oauth	0 B	Jul 2, 2018,
	.r		
	.RData	2.5 KB	Nov 13, 201
	.Renviron	17 B	Aug 5, 2020
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	.Rprofile	583 B	Aug 7, 2020
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	Bitso_LTC		
	CDSB2020_minirepo		
	CDSB2020minirepo		
	CellDesignerSim		
	CmapToolsLogs		
	Correlation_plot_datatraining.png	53.5 KB	Feb 27, 201
	CriptoDummy		
	CytoscapeConfiguration		

1:1 (Top Level) R Script

Console Terminal x Jobs x

~/

```
R version 4.0.3 (2020-10-10) -- "Bunny-Wunnies
Freak Out"
Copyright (C) 2020 The R Foundation for Statistical Computing
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details.
```

1:1 (Top Level) R Script



v1.4



RStudio File Edit Code View Plots Session Build Debug Profile Tools Window Help

Untitled2 x Untitled1 x

1

1

Environment History Connections Tutorial

Project: (None)

Import Dataset List C

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

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1:1 (Top Level) R Script

Console Terminal x Jobs x

~/

```
R version 4.0.3 (2020-10-10) -- "Bunny-Wunnies
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details.
```

1:1 (Top Level) R Script

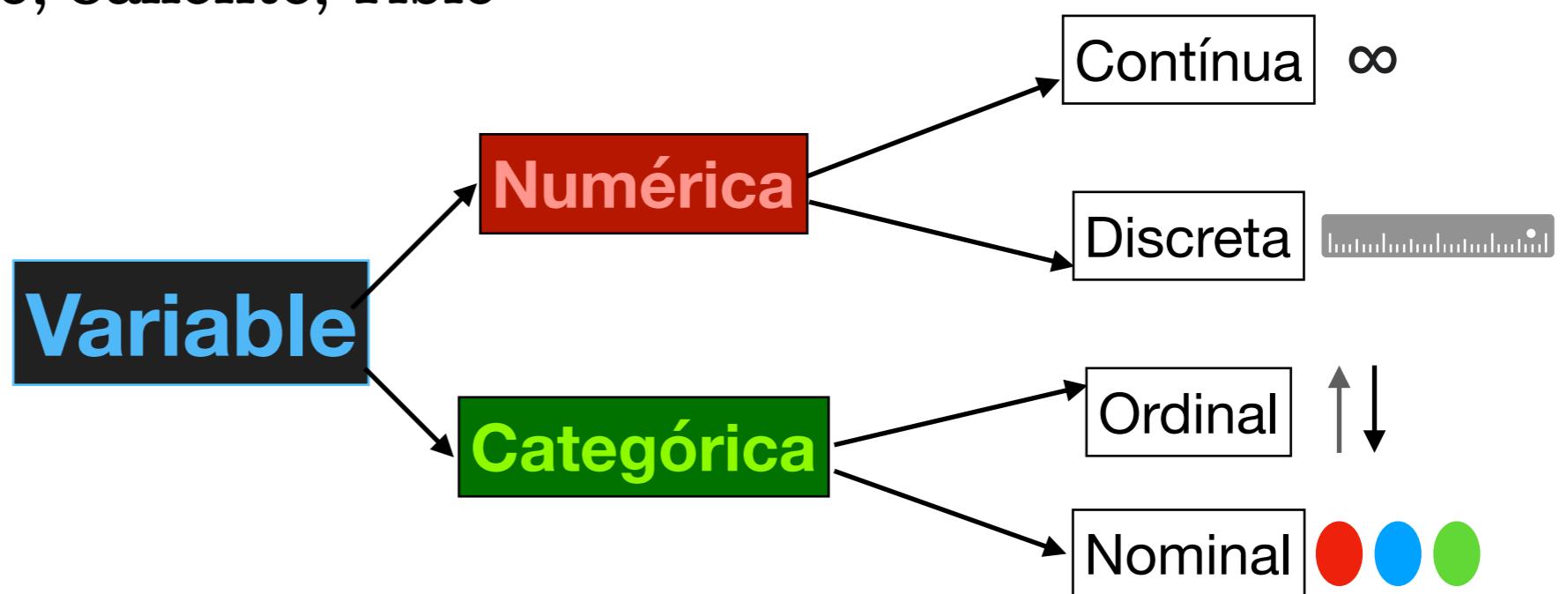


v1.4



Tipos de variables

- **Lógicos** : TRUE FALSE
- **Numéricos** : Enteros (25L, -5L) y dobles (3.1416, 25.0)
- **Carácter** o cadena : “a”, “abcd”
- **Factor** : Frío, Caliente, Tibio





Manos a la obra

- Cambia el tema del editor de código a “Pastel On Dark”
- Genera un archivo R script nuevo, y guárdalo como “tipos de variables”.
- ¿Qué sucede al usar **Shift** + **ctrl/command** + **P** ?
- ¿Qué sucede al sumar `FALSE + 4`? ¿y `TRUE + 4`?





Algunos atajos útiles

ctrl/command + Shift + C = Comentar líneas de código

Alt + Click = Índice de mouse en múltiples líneas

Alt + - = <->

ctrl/command + ENTER = Ejecutar línea de código

ctrl/command + Shift + M = %>%

Shift + ctrl/command + K = Compilar en reporte





abs	Valor absoluto
ceiling	Entero mayor o igual
cos	Coseno
dim	Dimensión de una Matriz
exp	Exponencial
floor	Entero menor o igual
log10	Logaritmo decimal
log	Logaritmo Neperiano
max	Máximo
mean	Media
median	Mediana
min	Mínimo
order	Vector entero en orden creciente
prod	Producto
range	Rango
rev	Elementos ordenados inversamente
sample	Generar muestras aleatorias
sin	Seno
sort	Elementos ordenados ascendentemente
sqrt	Raíz cuadrada
summary	Resumen estadístico de un objeto
sum	Suma
tan	Tangente
trunc	Entero más próximo a cero
var	Varianza de un vector o matrices

