

# R e RStudio

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# O que é o R?

- R é uma linguagem de programação voltada para estatística, desenvolvida por dois pesquisadores do departamento de Estatística da Universidade Auckland, na Nova Zelândia.
- Ela surgiu da necessidade de um programa que auxiliasse na manipulação, análise e visualização de dados de forma gratuita para que os alunos pudessem acompanhar as aulas.
- Apesar de ser voltada para estatística, possui uma infinidade de funções, como criação de sites, dashboards, etc...

# Onde baixar o R?

The Comprehensive R Archive Network - <https://cran.r-project.org/>

## 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.

Figure 1: CRAN

# Instalando R no Linux

## Install R

Package for the *current R 4.2. release\** are available for most stable Desktop releases of Ubuntu until their official end of life date. However, only the latest Long Term Support (LTS) release is fully supported. As of May 2, 2022 the supported releases are

- Jammy Jellyfish (22.04, amd64 only)
- Impish Indri (21.10, amd64 only),
- Focal Fossa (20.04; LTS and amd64 only),
- Bionic Beaver (18.04; LTS), and
- Xenial Xerus (16.04; LTS).

Run these lines (if `root`, remove `sudo`) to tell Ubuntu about the R binaries at CRAN.

```
# update indices
sudo apt update -qq
# install two helper packages we need
sudo apt install --no-install-recommends software-properties-common dirmngr
# add the signing key (by Michael Rutter) for these repos
# To verify key, run gpg --show-keys /etc/apt/trusted.gpg.d/cran_ubuntu_key.asc
# Fingerprint: E298A3A825C0D65DFD57CBB651716619E084DAB9
wget -qO- https://cloud.r-project.org/bin/linux/ubuntu/marutter_pubkey.asc | sudo tee -a /etc/a
# add the R 4.0 repo from CRAN -- adjust 'focal' to 'groovy' or 'bionic' as needed
sudo add-apt-repository "deb https://cloud.r-project.org/bin/linux/ubuntu $(lsb_release -cs)-c
```

Here we use `lsb_release -cs` to access which Ubuntu flavor you run: one of “jammy”, “impish”, “focal”, “bionic”, ...

# Instalando R no Mac

Latest release:

[R-4.2.1.pkg](#) (notarized and signed)  
SHA1-  
hash: f83a6c96cedd19193255f94cb01381a273073a3a  
(ca. 90MB) for Intel Macs

**R 4.2.1** binary for macOS 10.13 (**High Sierra**) and higher, **Intel 64-bit** build, signed and notarized package.  
Contains R 4.2.1 framework, R.app GUI 1.79 in 64-bit for Intel Macs, Tcl/Tk 8.6.6 X11 libraries and Texinfo 6.7. The latter two components are optional and can be omitted when choosing "custom install", they are only needed if you want to use the `tcltk` R package or build package documentation from sources.

Note: the use of X11 (including `tcltk`) requires [XQuartz](#) to be installed (version 2.7.11 or later) since it is no longer part of macOS. Always re-install XQuartz when upgrading your macOS to a new major version.

This release supports Intel Macs, but it is also known to work using Rosetta2 on M1-based Macs. For native Apple silicon arm64 binary see below.

**Important:** this release uses Xcode 12.4 and GNU Fortran 8.2. If you wish to compile R packages from sources, you may need to download GNU Fortran 8.2 - see the [tools](#) directory.

Figure 3: CRAN

# Instalando R no Windows

[Download R-4.2.1 for Windows](#) (79 megabytes, 64 bit)

[README on the Windows binary distribution](#)

[New features in this version](#)

This build requires UCRT, which is part of Windows since Windows 10 and Windows Server 2016. On older systems, UCRT has to be installed manually from [here](#).

If you want to double-check that the package you have downloaded matches the package distributed by CRAN, you can compare the [md5sum](#) of the .exe to the [fingerprint](#) on the master server.

## Frequently asked questions

- [Does R run under my version of Windows?](#)
- [How do I update packages in my previous version of R?](#)

Please see the [R FAQ](#) for general information about R and the [R Windows FAQ](#) for Windows-specific information.

## Other builds

- Patches to this release are incorporated in the [r-patched snapshot build](#).
- A build of the development version (which will eventually become the next major release of R) is available in the [r-devel snapshot build](#).
- [Previous releases](#)

Note to webmasters: A stable link which will redirect to the current Windows binary release is <http://<CRAN MIRROR>/bin/windows/base/release.html>.

# Abrindo o R

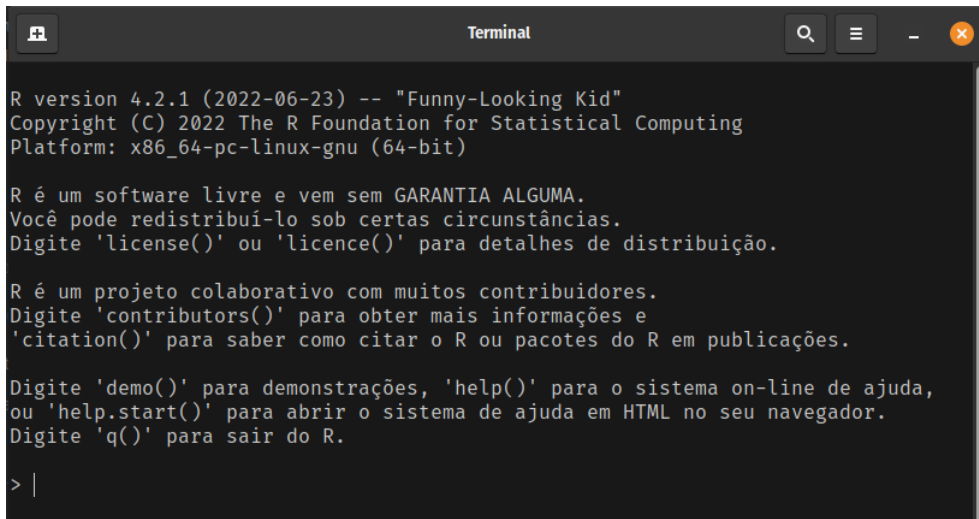
Ícone do R:



Figure 5: Ícone R

# Abrindo o R

Tela do R:

A terminal window titled "Terminal" with standard macOS window controls (zoom in, zoom out, close). The terminal displays the R version 4.2.1 startup message, copyright information, and instructions on how to use the R command-line interface. The prompt is "> |".

```
R version 4.2.1 (2022-06-23) -- "Funny-Looking Kid"
Copyright (C) 2022 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

R é um software livre e vem sem GARANTIA ALGUMA.
Você pode redistribuí-lo sob certas circunstâncias.
Digite 'license()' ou 'licence()' para detalhes de distribuição.

R é um projeto colaborativo com muitos contribuidores.
Digite 'contributors()' para obter mais informações e
'citation()' para saber como citar o R ou pacotes do R em publicações.

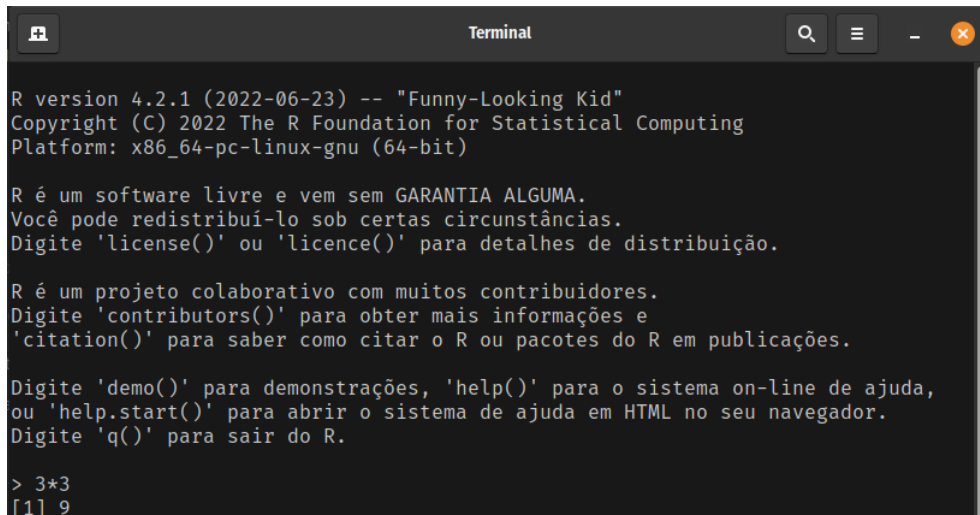
Digite 'demo()' para demonstrações, 'help()' para o sistema on-line de ajuda,
ou 'help.start()' para abrir o sistema de ajuda em HTML no seu navegador.
Digite 'q()' para sair do R.

> |
```



# Abrindo o R

Poucas informações, pouco intuitivo, feio



```
Terminal

R version 4.2.1 (2022-06-23) -- "Funny-Looking Kid"
Copyright (C) 2022 The R Foundation for Statistical Computing
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Digite 'q()' para sair do R.

> 3*3
[1] 9
```

# O que é o RStudio?

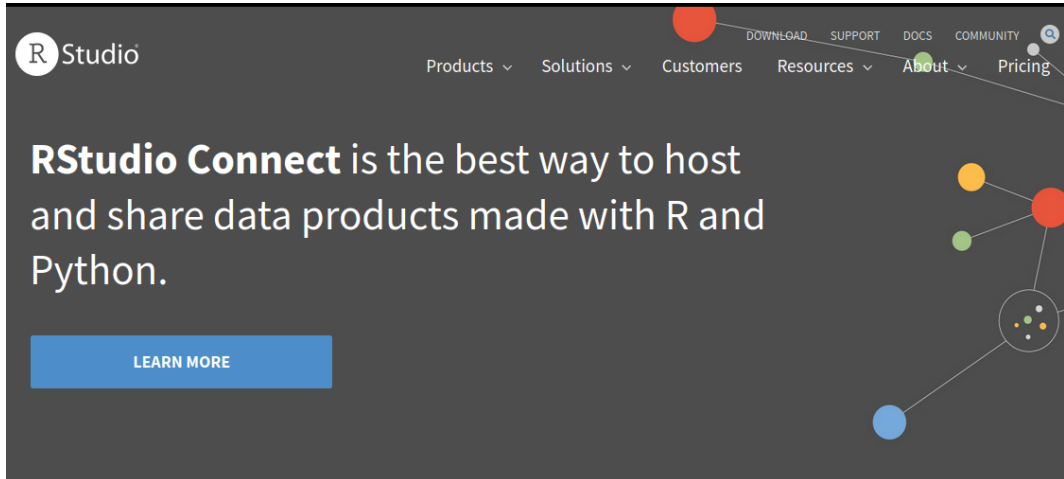
- É uma interface gráfica voltada para programação em R
- Utiliza de recursos visuais para facilitar a programação
- Também aceita outras linguagens, como Python

Outras interfaces:

- VSCODE
- Jupyter

# Onde baixar o RStudio?

RStudio - <https://www.rstudio.com/>



# Onde baixar o RStudio?

- Download
- Selecionar a versão RStudio Desktop (Free)

RStudio Desktop	RStudio Desktop Pro	RStudio Server	RStudio Workbench ⓘ
Open Source License	Commercial License	Open Source License	Commercial License
<b>Free</b>	<b>\$995</b>	<b>Free</b>	<b>\$4,975</b>
	/year		/year
			(5 Named Users)
<a href="#">DOWNLOAD</a>	<a href="#">BUY</a>	<a href="#">DOWNLOAD</a>	<a href="#">BUY</a>
<a href="#">Learn more</a>	<a href="#">Learn more</a>	<a href="#">Learn more</a>	<a href="#">Evaluation</a>   <a href="#">Learn more</a>

Figure 9: RStudio Desktop (Free)

# Onde baixar o RStudio?








- Download
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RStudio Desktop	RStudio Desktop Pro	RStudio Server	RStudio Workbench ⓘ
Open Source License	Commercial License	Open Source License	Commercial License
<b>Free</b>	<b>\$995</b> /year	<b>Free</b>	<b>\$4,975</b> /year (5 Named Users)
<a href="#">DOWNLOAD</a>	<a href="#">BUY</a>	<a href="#">DOWNLOAD</a>	<a href="#">BUY</a>
<a href="#">Learn more</a>	<a href="#">Learn more</a>	<a href="#">Learn more</a>	<a href="#">Evaluation</a>   <a href="#">Learn more</a>

Figure 10: RStudio Desktop (Free)

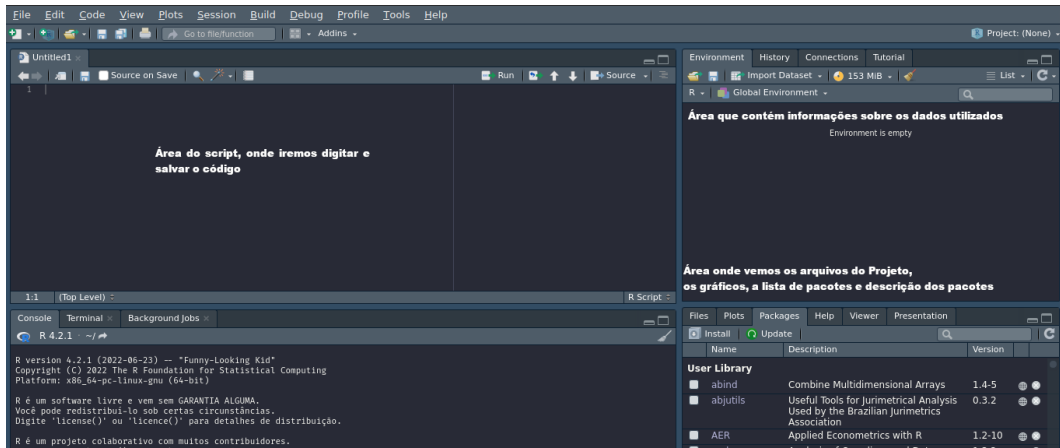
# Onde baixar o RStudio?

- Selecionar o seu sistema
- Clickar em baixar
- Instalar

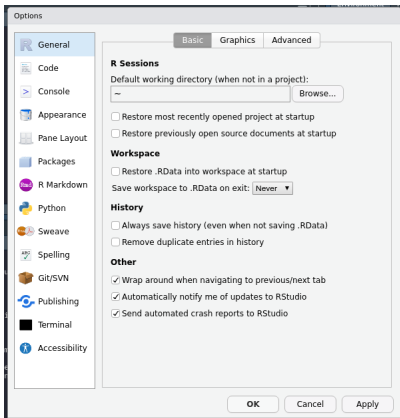
OS	Download	Size	SHA-256
Windows 10/11	 <a href="#">RStudio-2022.07.1-554.exe</a>	190.14 MB	<a href="#">5ab6215b</a>
macOS 10.15+	 <a href="#">RStudio-2022.07.1-554.dmg</a>	221.04 MB	<a href="#">7b1a2285</a>
Ubuntu 18+/Debian 10+	 <a href="#">rstudio-2022.07.1-554-amd64.deb</a>	132.91 MB	<a href="#">74b9e751</a>
Ubuntu 22	 <a href="#">rstudio-2022.07.1-554-amd64.deb</a>	145.33 MB	<a href="#">92f2ab75</a>
Fedora 19/Red Hat 7	 <a href="#">rstudio-2022.07.1-554-x86_64.rpm</a>	103.29 MB	<a href="#">0fc15d16</a>
Fedora 34/Red Hat 8	 <a href="#">rstudio-2022.07.1-554-x86_64.rpm</a>	149.77 MB	<a href="#">0c4ef334</a>
OpenSUSE 15	 <a href="#">rstudio-2022.07.1-554-x86_64.rpm</a>	133.76 MB	<a href="#">45f237d0</a>

# Interface básica do RStudio

- Dividida em quatro partes: Scripts, Console/Terminal, Ambiente/Conexões e Arquivos/Visualização



# Configurando o RStudio



- Ler Zen do R
- Acessar: Ferramentas -> Opções Globais
- Não salvar o RData, histórico, etc...



# Configurando a aparência

- Deixar do jeito que te agrada mais

