

Laboratório de Biologia Computacional e Molecular

Centro de Biotecnologia da UFRGS
Universidade Federal do Rio Grande do Sul



R para Ciências da Vida (BCM13065) Aula 2

PPGBCM - UFRGS

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2024/2

Interfaces para o R

- **Terminal**

- Desvantagens:
 - Sem interface gráfica
 - Aprendizado mais lento
- Vantagens:
 - Rapidez
 - Menos consumo de memória
 - Uso em hardwares antigos

- **IDEs = *integrated development environment***

- **GUI = *graphical user interface***

- Desvantagens:
 - Uso de memória pode ser intensivo
 - Conflito com outros programas
 - Não funciona bem com hardwares mais antigos
- Vantagens:
 - Aprendizado rápido
 - Acelera o desenvolvimento dos scripts e das análises

Last login: Mon Nov 4 09:31:22 on ttys004

diego bonatto@Diegos-MacBook-Air ~ % R

R version 4.2.1 (2022-06-23) -- "Funny-Looking Kid"
Copyright (C) 2022 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin17.0 (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.

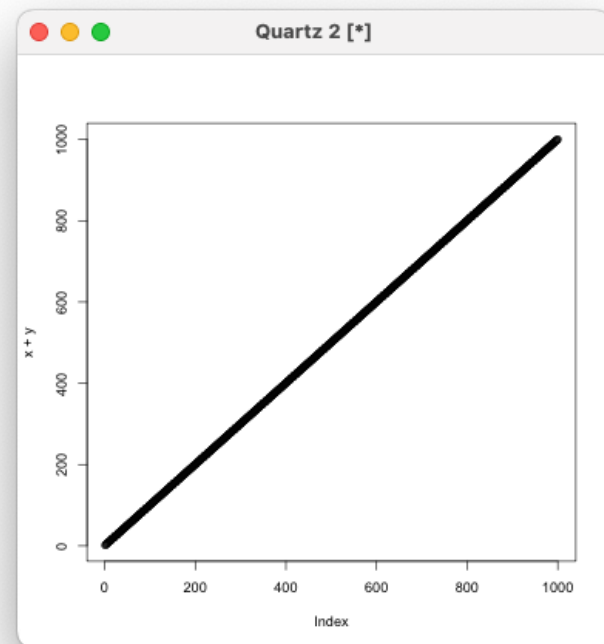
Natural language support but running in an English locale

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.

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.

[Área de trabalho anterior carregada]

```
> x<-(1:1000)
> y<-(1:000)
> plot(x+y)
> 2024-11-05 10:07:46.058 R[7129:866722] +[IMKClient subclass]: chose IMKClient_Modern
2024-11-05 10:07:46.058 R[7129:866722] +[IMKInputSession subclass]: chose IMKInputSession_Modern
```



Go to file/function

Addins

Untitled1*

Source on Save

Run

Source

```
1 x<-(1:1000)
2 y<-(1:1000)
3 plot(x+y)
```

Editor de código

Environment

History

Connections

Tutorial

Project: (None)

Import Dataset

87 MiB

List

R

Global Environment

Values

x	int [1:1000]	1 2 3 4 5 6 7 8 9 10 ...
y	int [1:1000]	1 2 3 4 5 6 7 8 9 10 ...

Ambiente

3:10 (Top Level)

R Script

Console

Terminal

Background Jobs

R 4.2.1 ~/

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.

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.

[Workspace loaded from ~/.RData]

> x<-(1:1000)

> y<-(1:1000)

> plot(x+y)

>

Console do R

Files

Plots

Packages

Help

Viewer

Presentation

Zoom

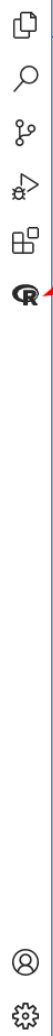
Export

Publish

x + y

Index

Arquivos, gráficos, etc...



Visual Studio Code

Editing evolved

Start

- New File...
- Open...
- Clone Git Repository...
- Connect to...

Recent

You have no recent folders, [open a folder](#) to start.

Walkthroughs

- Get Started with VS Code**
Customize your editor, learn the basics, and start coding
- Get Started with Python Development** New
- Learn the Fundamentals**

radian: A 21 century R console



radian is an alternative console for the R program with multiline editing and rich syntax highlight. One would consider *radian* as a [ipython](#) clone for R, though its design is more aligned to [julia](#).

```
R version 3.4.1 (2017-06-30) -- Single Candle
Platform: x86_64-apple-darwin16.7.0
```

```
r$> x <- c(1.3, 3.6, 7.8)
```

```
r$> f <- function(x) {
  "multiline support"
}
```

```
#!> echo "this is shell model"
this is shell model
```

```
r$> library(tidy
      tidyr
      tidyselect
      tidyverse
```

Languages

 Python 95.8%  R 3.8%
 Other 0.4%

Features

- cross platform, runs on Windows, macOS and Linux
- shell mode: hit `;` to enter and `<backspace>` to leave



[tgirke](#) / [_Nvim-R-Tmux.md](#)

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<script src="https://



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Nvim-R-Tmux: An Integrated Working Environment for R

[_Nvim-R-Tmux.md](#)

Raw

Nvim-R-Tmux: Neovim-based IDE for R

!!! This Gist tutorial is deprecated. Its new version is available [here](#) !!!

This is some red text.

- Author: Thomas Girke
- Last update: 18-Nov-2020

Table of Content

1. [Overview](#)
2. [Installation](#)
 - i. [Neovim](#)
 - ii. [Tmux](#)
 - iii. [R package colorout](#)
 - iv. [Nvim-R plugin](#)
 - v. [Nerdtree](#)
 - vi. [Color Scheme](#)

```
library("foreign")

m <- read.spss("moz_r5_data.sav", to.data.frame = TRUE)
varlabels <- attr(m, "variable.labels")
for(n in names(varlabels))
  attr(m[[n]], "label") <- varlabels[n]
summary(m$URBRUR)
~
~
~
```

```
.GlobalEnv | Libraries

m      [2400, 362]
├── RESPNO      Responden
├── URBRUR      Urban or
├── REGION      Province
├── DISTRICT
├── EA_SVC_A     E
├── EA_SVC_B     E
├── EA_SVC_C     E
```

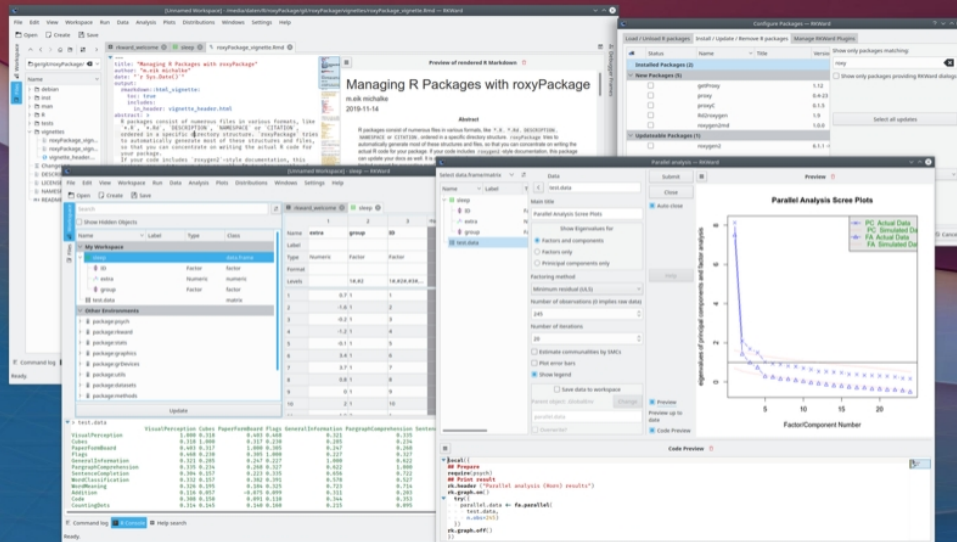
```
Afrobarometer.R [+] 7,18 All <ect Browser 1,1 Top
```

'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

```
nvimcom 0.9.89 loaded
> library("foreign")
> m <- read.spss("moz_r5_data.sav", to.data.frame = TRUE)
There were 17 warnings (use warnings() to see them)
> varlabels <- attr(m, "variable.labels")
> for(n in names(varlabels))
+   attr(m[[n]], "label") <- varlabels[n]
>
```

```
term:///tmp//101738:R 27,1 Bot
```

```
-- INSERT --
```

RKWard

RKWard is an easy to use and easily extensible IDE/GUI for R.

[Learn more](#)

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RKWard 0.8.0

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Windows |
GNU/Linux

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28 Jul 2024

CO

Untitled4.ipynb ☆

File Edit View Insert Runtime Tools Help Last edited on 28 October

+ Code + Text

Connect Gemini

↑ ↓ ↗ ↻ 🗨 ⚙ 📄 🗑 ⋮

```
from docx import Document

# Creating a new document for the exercises about R integration with Python and LaTeX
doc = Document()
doc.add_heading("Exercícios de Integração do R com Python e LaTeX", level=1)

# Adding instructions and exercises
doc.add_paragraph(
    "Este documento contém exercícios sobre integração entre Python e LaTeX, "
    "usando os pacotes 'reticulate' e 'rpy2'."
)

# Exercise 1: Integration with R
doc.add_heading("Exercício 1: Integração com R", level=2)
doc.add_paragraph(
    "1. **Executar Código Python dentro de um documento LaTeX** "
    "uma mensagem no console do R usando o pacote 'reticulate'."
    "\n"
    "Exemplo:\n"
    "```r\n"
    "library(reticulate)\n"
    "py_run_string('print(\"Olá do Python!\")')\n"
    "```"
)

# Exercise 2: Transferring variables from R to Python
doc.add_heading("Exercício 2: Transferência de Variáveis entre R e Python", level=2)
doc.add_paragraph(
    "2. **Transferir Dados entre R e Python**: Crie um vetor no R, e então transfira essa variável para o ambiente Python "
    "usando o pacote 'reticulate'. No Python, calcule a média do vetor e exiba o resultado."
    "\n"
    "Exemplo:\n"
    "```r\n"
```

Change runtime type

Runtime type

Python 3

Python 3 ?

R

T4 GPU

A100 GPU

L4 GPU

TPU V2-8

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