

Základy práce v R – Instalace a první kroky (Windows & Mac)

Tento návod vás provede instalací R a RStudio, prvním spuštěním a základní orientací v prostředí. Vhodné pro úplné začátečníky.



Start



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Install



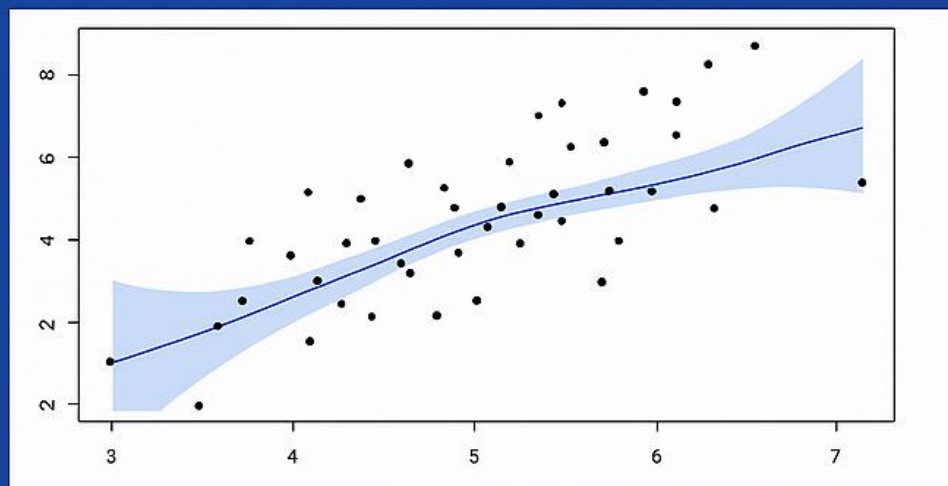


Co je R a proč s ním začít?

R je populární programovací jazyk pro statistiku a analýzu dat. Využívá se ve vědeckém výzkumu, průmyslu i v dalších oborech. S jeho pomocí je možné provádět statistické výpočty, analyzovat datové sady a vytvářet grafy.

Statistika

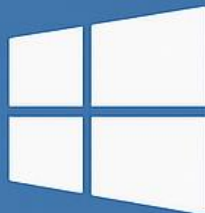
Analýza dat



Kde stáhnout R – Windows

R je možné zdarma stáhnout z oficiálního webu www.r-project.org.

Klikněte na odkaz „CRAN“ (The Comprehensive R Archive Network) a zvolte možnost *Download R for Windows*. Poté vyberte „base“ pro základní instalaci.



www.r-project.org

The R Project logo, featuring a stylized blue 'R' with a grey circular background element.

The R Project for Statistical Computing

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Download R for Windows

A large blue arrow pointing downwards, indicating the download path.

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If you are using Linuk, plesse visit your [di stinours](#)

If you have questions about R like how to downloa to frequently asked questfions before you send an c

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 (2025-02-28, Trophy Case) [R-4.4.3.tar.gz](#), read [what's new](#) in the latest version.
- The CRAN directory [src/base-prerelease](#) contains R alpha, beta, and rc releases as daily snapshots in time periods before a planned release.
- Between releases, the same directory [src/base-prerelease](#) contains snapshots of current patched and development versions. Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Alternatively, daily snapshots are [available here](#).
- 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.

Supporting CRAN

- CRAN operations, most importantly hosting, checking, distributing, and archiving of R add-on packages for various platforms, crucially rely on technical, emotional, and financial support by the R community.

Please consider making [financial contributions](#) to the R Foundation for Statistical Computing.



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R for Windows

Subdirectories:

[base](#)
[contrib](#)
[old contrib](#)
[Rtools](#)

Binaries for base distribution. This is what you want to [install R for the first time](#).

Binaries of contributed CRAN packages (for R $\geq$ 4.0.x).

Binaries of contributed CRAN packages for outdated versions of R (for R $<$ 4.0.x).

Tools to build R and R packages. This is what you want to build your own packages on Windows, or to build R itself.

Please do not submit binaries to CRAN. Package developers might want to contact Uwe Ligges directly in case of questions / suggestions related to Windows binaries.

You may also want to read the [R FAQ](#) and [R for Windows FAQ](#).

Note: CRAN does some checks on these binaries for viruses, but cannot give guarantees. Use the normal precautions with downloaded executables.

R for macOS

This directory contains binaries for the base distribution and of R and packages to run on macOS. R and package binaries for R versions older than 4.0.0 are only available from the [CRAN archive](https://cran-archive.r-project.org) so users of such versions should adjust the CRAN mirror setting (<https://cran-archive.r-project.org>) accordingly.

Note: Although we take precautions when assembling binaries, please use the normal precautions with downloaded executables.

R 4.4.3 "Trophy Case" released on 2025/02/28

Please check the integrity of the downloaded package by checking the signature:

```
pkgutil --check-signature R-4.4.3-arm64.pkg
```

in the *Terminal* application. If Apple tools are not available you can check the SHA1 checksum of the downloaded image:

```
openssl sha1 R-4.4.3-arm64.pkg
```

Latest release:

For Apple silicon (M1,2,...) Macs:

[R-4.4.3-arm64.pkg](#)

SHA1-hash: c52bed5f80a7ddd31a8c5598a5a60f8b6c89073
(ca. 97MB, notarized and signed)

For older Intel Macs:

[R-4.4.3-x86_64.pkg](#)

SHA1-hash: 2391e3c97b3c9f3d36001a3a3eb314a6e0efc819
(ca. 100MB, notarized and signed)

R 4.4.3 binary for macOS 11 (**Big Sur**) and higher, signed and notarized packages.

Contains R 4.4.3 framework, R.app GUI 1.81, Tcl/Tk 8.6.12 X11 libraries and Texinfo 6.8. 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.

macOS Ventura users: there is a known bug in Ventura preventing installations from some locations without a prompt. If the installation fails, move the downloaded file away from the *Downloads* folder (e.g., to your home or Desktop).

Note: the use of X11 (including `tcltk`) requires [XQuartz](#) (version 2.8.5 or later). Always re-install XQuartz when upgrading your macOS to a new major version.

This release uses Xcode 14.2/14.3 and GNU Fortran 12.2. If you wish to compile R packages which contain Fortran code, you may need to download the corresponding GNU Fortran compiler from <https://mac.R-project.org/tools>. Any external libraries and tools are expected to live in `/opt/R/arm64` (Apple silicon) or `/opt/R/x86_64` (Intel).

[NEWS](#) (for Mac GUI)

News features and changes in the R.app Mac GUI

[Mac-GUI-1.81.tar.gz](#)

SHA1-hash: 2980af0d5fa91660c1d44cc200c8914df6451fd

Sources for the R.app GUI 1.81 for macOS. This file is only needed if you want to join the development of the GUI (see also [Mac-GUI repository](#)), it is not intended for regular users. Read the `INSTALL` file for further instructions.

Subdirectories:

[tools](#)

Additional tools necessary for building R for Mac OS X:

Universal GNU Fortran compiler for Mac OS X (see [R for Mac tools page](#) for details).

[big-sur-arm64](#)

Binaries for macOS 11 or higher (Big Sur) for arm64-based Macs (aka Apple silicon such as the M1 chip)

[big-sur-x86_64](#)

Binaries for macOS 11 or higher (Big Sur) for Intel-based Macs

Binaries for legacy macOS/OS X systems:

[R-4.2.3.pkg](#) (notarized and signed)

SHA1-hash: 82a1871bad7cd90c151174d6134183c4d38f8e14
(ca. 89MB) for Intel Macs

R 4.2.3 binary for macOS 10.13 (High Sierra) and higher, signed and notarized package. Contains R 4.2.3 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.

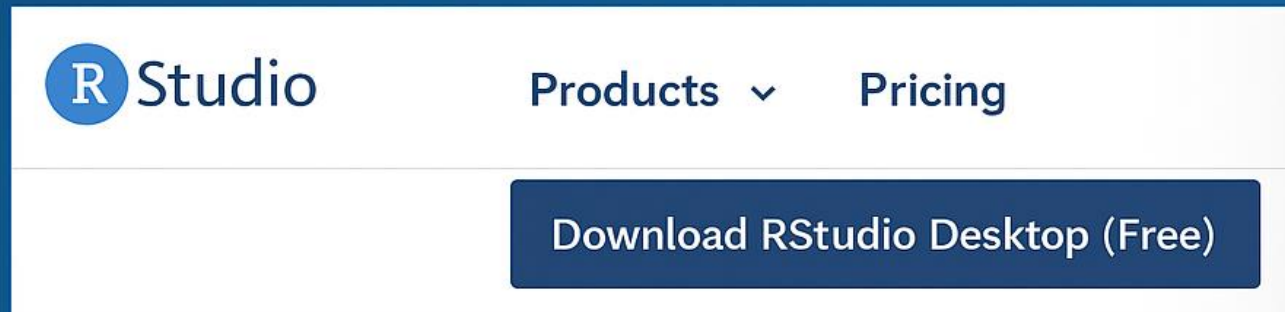
This release uses Xcode 12.4 and GNU Fortran 8.2. If you wish to compile R packages from sources, you may need to download GNU Fortran 8.2 - see the [tools](#) directory.

Index of /R/bin/linux/

../			
debian/	01-Mar-2025 08:28	-	
fedora/	07-Jul-2020 09:42	-	
redhat/	07-Jul-2020 09:42	-	
suse/	16-Feb-2012 14:09	-	
ubuntu/	01-Apr-2025 13:16	-	

Kde stáhnout RStudio

RStudio je bezplatné vývojové prostředí pro práci v R.
Nabízí přehledné rozhraní pro psaní kódu, práci s daty a grafy.
Stáhnout jej můžete z webu:
www.rstudio.com



DOWNLOAD

RStudio Desktop

Used by millions of people weekly, the RStudio integrated development environment (IDE) is a set of tools built to help you be more productive with R and Python.

Don't want to download or install anything? Get started with RStudio on [Posit Cloud for free](#). If you're a professional data scientist looking to download RStudio and also need common enterprise features, don't hesitate to [book a call with us](#).

Want to learn about core or advanced workflows in RStudio? Explore the [RStudio User Guide](#) or the [Getting Started](#) section.

1: Install R

RStudio requires R 3.6.0+. Choose a version of R that matches your computer's operating system.

R is not a Posit product. By clicking on the link below to download and install R, you are leaving the Posit website. Posit disclaims any obligations and all liability with respect to R and the R website.

2: Install RStudio

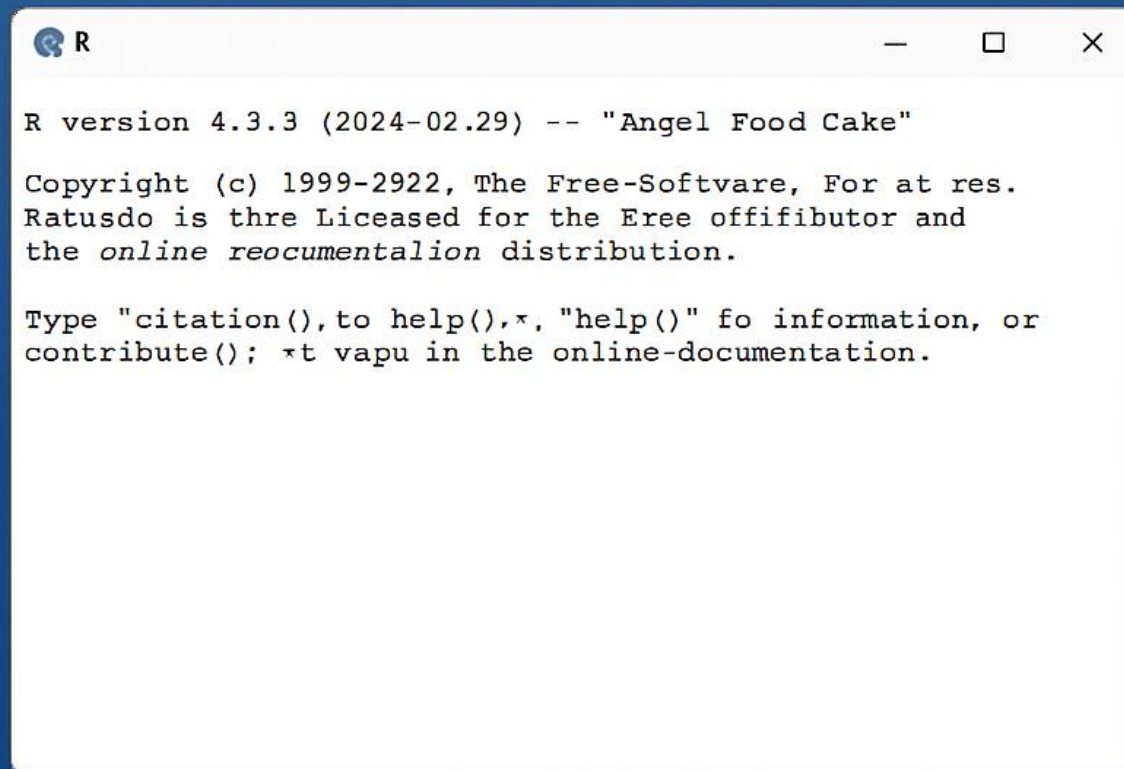
[DOWNLOAD RSTUDIO DESKTOP FOR WINDOWS](#)

Size: 265.28 MB | [SHA-256: BB369743](#) | Version: 2024.12.1+563 |
Released: 2025-02-13

OS	Download	Size	SHA-256
Windows 10/11	RSTUDIO-2024.12.1-563.EXE 	265.28 MB	BB369743
macOS 13+	RSTUDIO-2024.12.1-563.DMG 	557.15 MB	BE73D3A9
Ubuntu 20/Debian 11	RSTUDIO-2024.12.1-563-AMD64.DEB 	203.14 MB	EE259A88
Ubuntu 22/Debian 12	RSTUDIO-2024.12.1-563-AMD64.DEB 	203.17 MB	710931EC
Ubuntu 24	RSTUDIO-2024.12.1-563-AMD64.DEB 	203.17 MB	710931EC
OpenSUSE 15	RSTUDIO-2024.12.1-563-X86_64.RPM 	205.07 MB	9C7E7109
Fedora 34/Red Hat 8	RSTUDIO-2024.12.1-563-X86_64.RPM 	228.91 MB	CDFC2100
Fedora 36/Red Hat 9	RSTUDIO-2024.12.1-563-X86_64.RPM 	219.53 MB	D5FE5220

Nejdříve spustíte R

- Před použitím RStudio se ujistěte, že máte nainstalované R
- Nejprve spustíte R – otevře se jednoduché okno s konzolí
- RStudio poté R automaticky najde a propojí se s ním

A screenshot of the R console window. The window has a title bar with the R logo and the letter 'R'. The text inside the window is as follows:

```
R version 4.3.3 (2024-02.29) -- "Angel Food Cake"

Copyright (c) 1999-2022, The Free-Software, For at res.
Ratusdo is thre Liceased for the Eree offifibutor and
the online reocumentalion distribution.

Type "citation()",to help(),*, "help()" fo information, or
contribute(); *t vapu in the online-documentation.
```

První spuštění RStudio

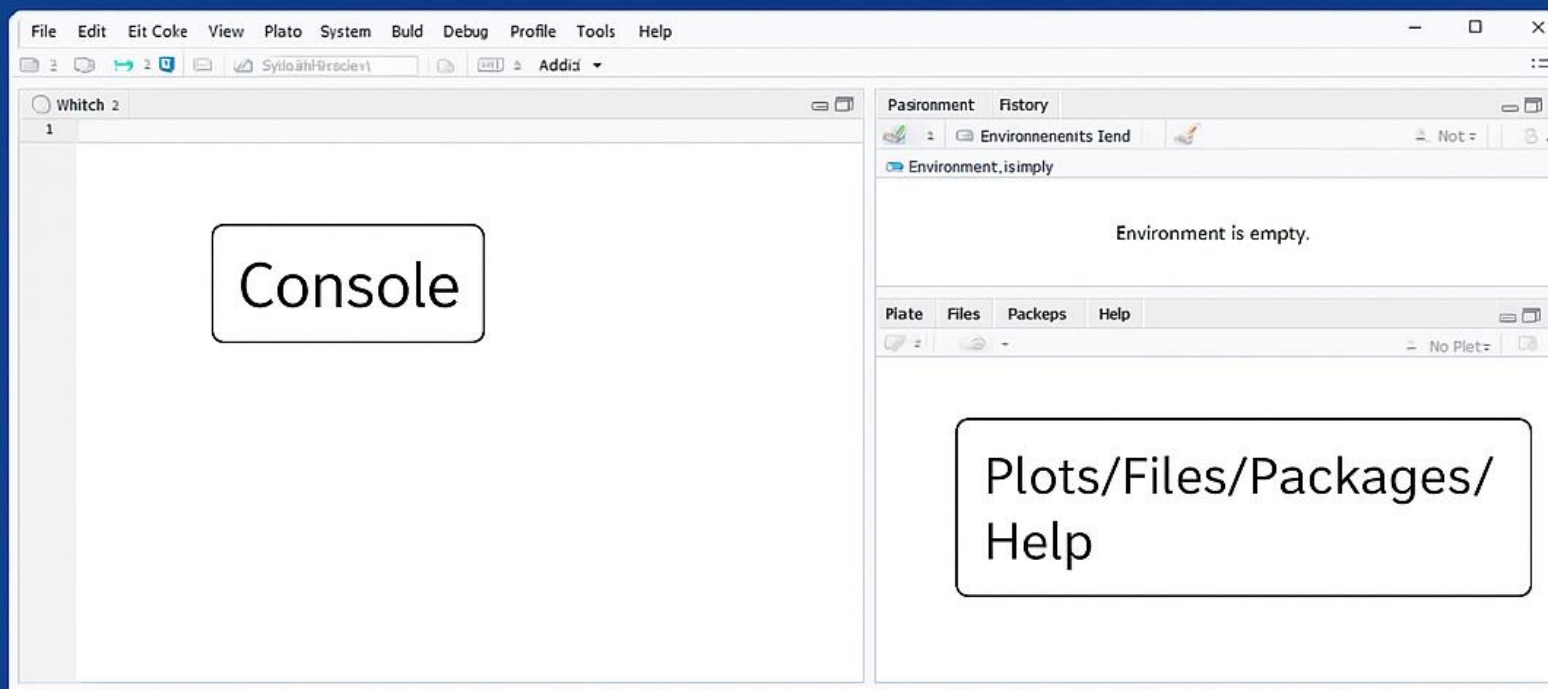
Před otevření RStudio se ujistete, že máte nainstalované:

Console (výpočetní okno – výstupy a příkazy)

Script editor (vlevo nahoře – zde píšete kód)

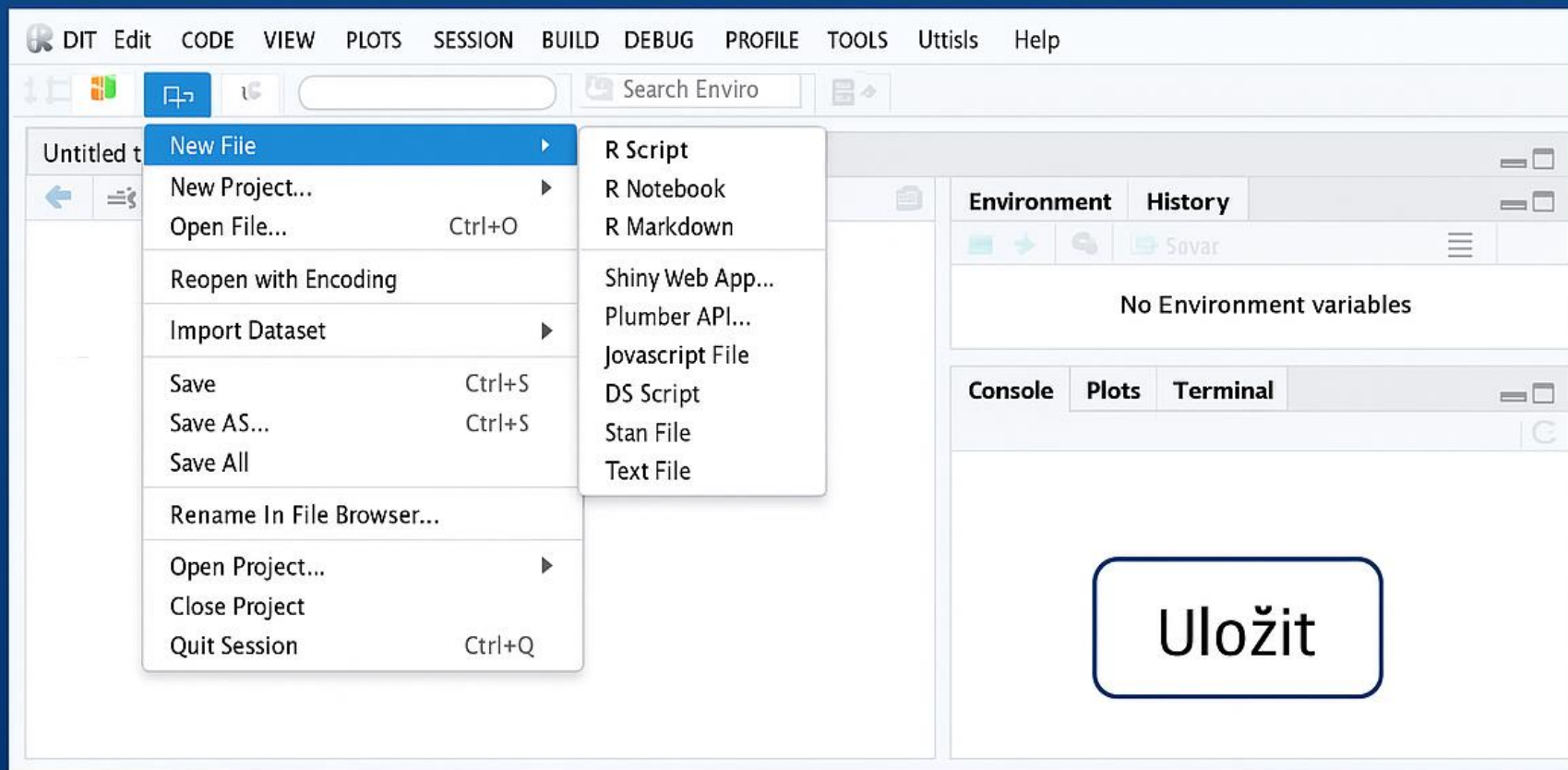
Environment/History (vpravo nahoře – proměnné)

Plots/Files/Packages/Help (vpravo dole – grafy, složky)



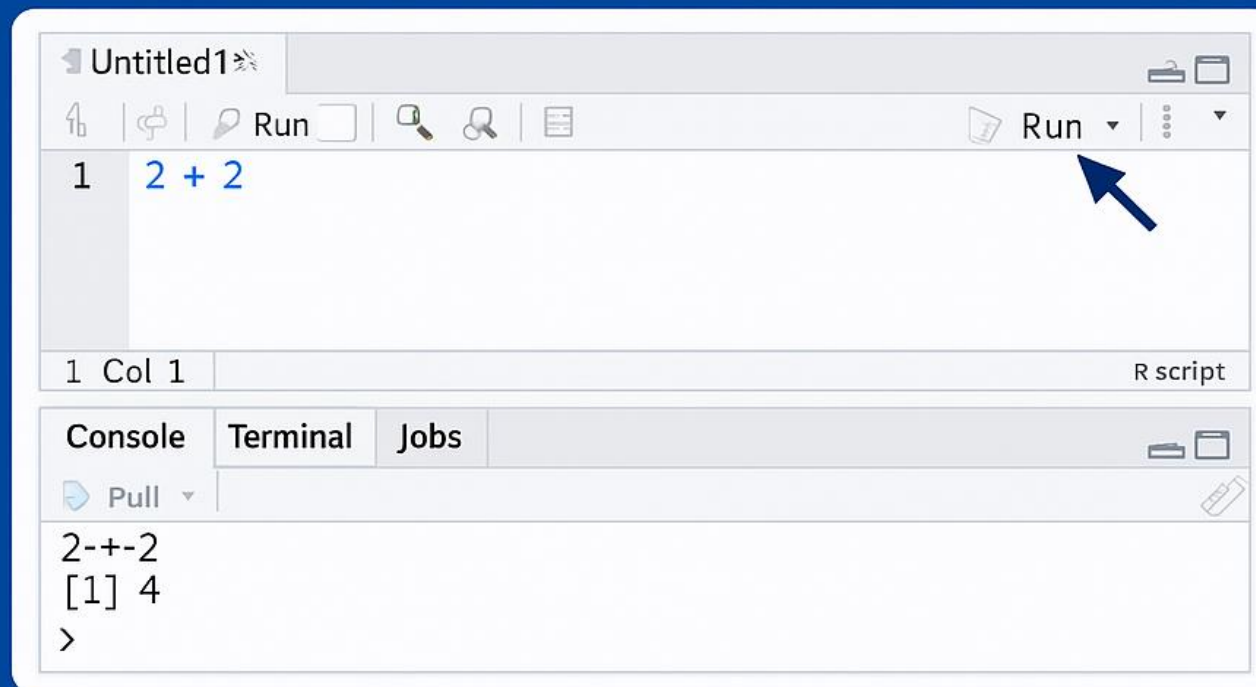
Vytvoření nového skriptu

- Po spuštění RStudio klikněte na **File** → **New File** → **R Script**.
- Otevře se nové okno pro psaní kódu (Script editor).
- Doporučuje se uložit soubor hned na začátku (např. *analýza.R*)



Spuštění příkazů

- Do skriptového okna napište příkaz (např. $2 + 2$)
- Označte řádek a klikněte na tlačítko **Run** (nebo použijte klávesovou zkratku **Ctrl + Enter**)
- Výsledek se zobrazí v konzoli (Console)

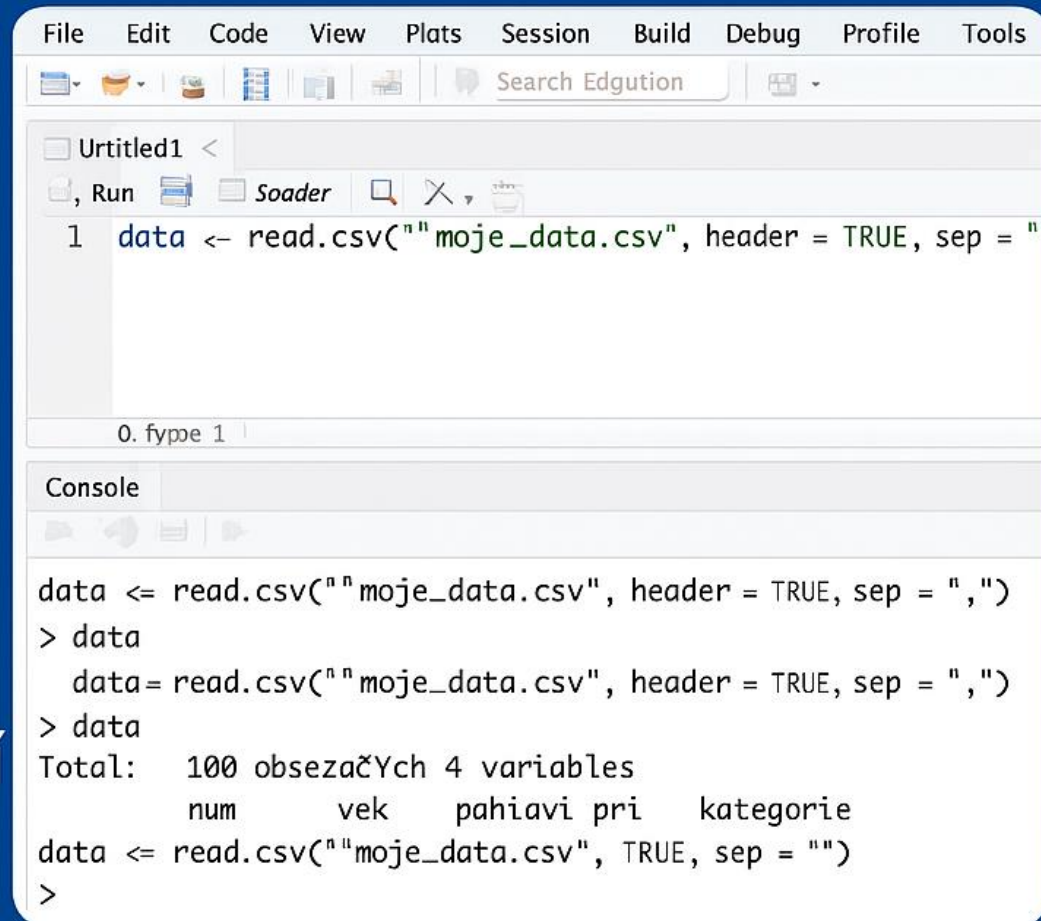


Načtení CSV souboru do R

- Připravte si datový soubor ve formátu CSV.
- Uložte ho do stejné složky, odkud spouštíte skript.
- Použijte funkci `read.csv()` pro načtení:

```
data <- read.csv("moje_data.csv", header = TRUE, sep = ",")
```

Důležité: Název souboru musí být uveden správně (včetně koncovky).



```
File Edit Code View Plots Session Build Debug Profile Tools
Search Edgution

Untitled1 <
, Run Soader
1 data <- read.csv("moje_data.csv", header = TRUE, sep = ",")

0. type 1

Console

data <- read.csv("moje_data.csv", header = TRUE, sep = ",")
> data
data= read.csv("moje_data.csv", header = TRUE, sep = ",")
> data
Total: 100 obsezačŸch 4 variables
      num      vek  pahavi pri  kategorie
data <- read.csv("moje_data.csv", TRUE, sep = ",")
>
```

1 Načtení CSV:

r

📄 Zkopírovat

✎ Upravit

```
data <- read.csv("moje_data.csv", header = TRUE, sep = ",")
```

2 Zobrazení dat:

r

📄 Zkopírovat

✎ Upravit

```
head(data)
```

3 Struktura a shrnutí:

r

📄 Zkopírovat

✎ Upravit

```
str(data)  
summary(data)
```

📌 Vysvětlivky:

- `read.csv()` načte data do tabulky (data.frame)
- `head()` zobrazí prvních 6 řádků
- `str()` ukáže typy proměnných
- `summary()` spočítá např. minimum, maximum, průměr...