

# Установка R и RStudio

Перейдите по ссылке [posit.co/download/rstudio-desktop](https://posit.co/download/rstudio-desktop)

В середине страницы найдите следующий раздел

## 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.*

DOWNLOAD AND INSTALL R

## 2: Install RStudio

DOWNLOAD RSTUDIO DESKTOP FOR MACOS 13+

This version of RStudio is only supported on macOS 13 and higher. For earlier macOS environments, please [download a previous version](#).

Size: 557.15 MB | [SHA-256: BE73D3A9](#) | Version: 2024.12.1+563 |  
Released: 2025-02-13

# Установка R

Нажмите [DOWNLOAD AND INSTALL R](#)

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# Установка R

В открывшейся вкладке выберите из списка свою операционную систему



*CRAN*

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[CRAN Team](#)

*About R*

[R Homepage](#)

[The R Journal](#)

## The Comprehensive R Archive Network

### Download and Install R

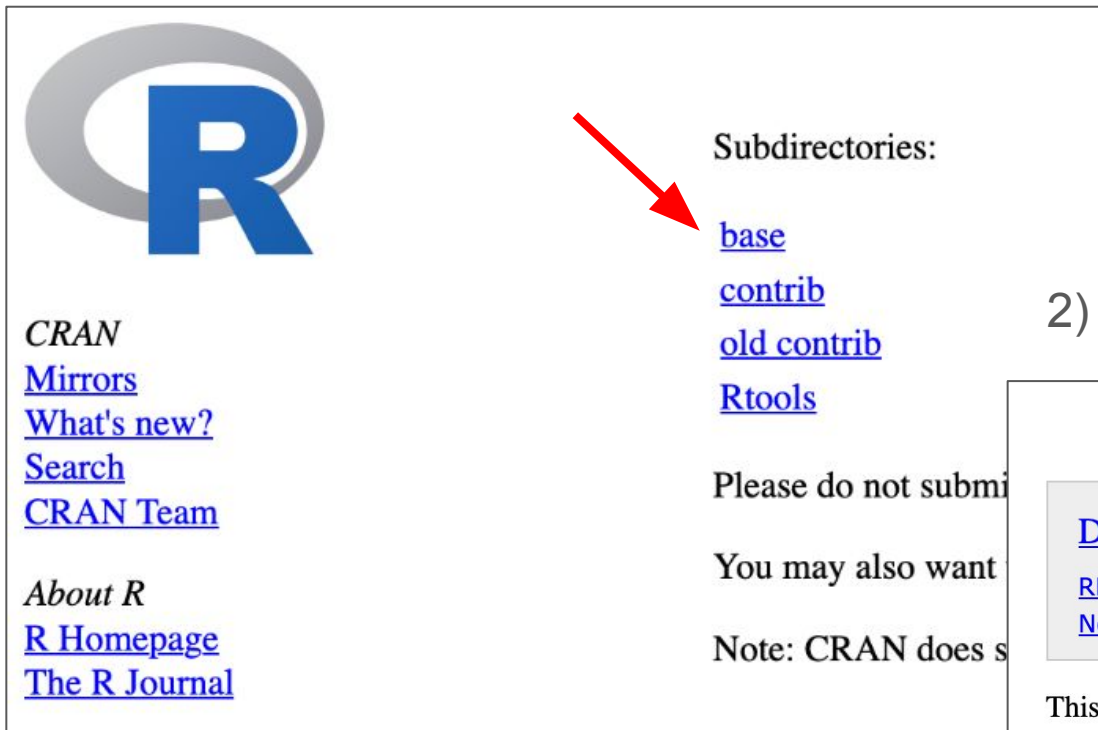
Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [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.

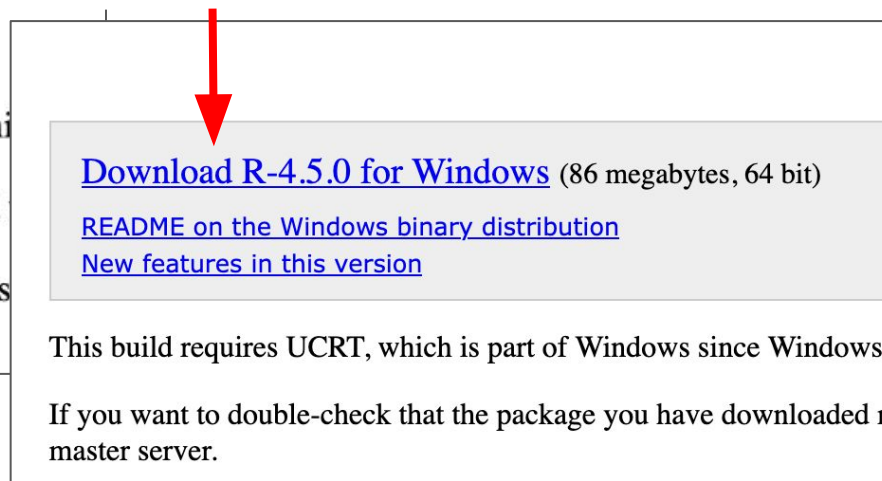
# Для Windows

1) Выберите вариант [base](#)



The screenshot shows the CRAN website. On the left, there is a large blue 'R' logo. Below it, the text 'CRAN' is followed by links: [Mirrors](#), [What's new?](#), [Search](#), [CRAN Team](#), [About R](#), [R Homepage](#), and [The R Journal](#). On the right, under the heading 'Subdirectories:', there is a list of links: [base](#), [contrib](#), [old contrib](#), and [Rtools](#). A red arrow points from the 'base' link to the 'base' subdirectory.

2) Загрузите и установите .exe файл



The screenshot shows the CRAN website. A red arrow points to the link [Download R-4.5.0 for Windows](#) (86 megabytes, 64 bit). Below this link, there are two more links: [README on the Windows binary distribution](#) and [New features in this version](#). Below the links, there is a paragraph: 'This build requires UCRT, which is part of Windows since Windows'. Below that, there is another paragraph: 'If you want to double-check that the package you have downloaded is from the master server.'

# Для Mac

Загрузите и установите .pkg файл (сверху для новых компьютеров, снизу для старых)



[CRAN](#)  
[Mirrors](#)  
[What's new?](#)  
[Search](#)  
[CRAN Team](#)

[About R](#)  
[R Homepage](#)  
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## 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 version [4.5.0](#) 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 4.5.0 "How About a Twenty-Six" released on 2025/04/11**

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

```
pkgutil --check-signature R-4.5.0-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-4.5.0-arm64.pkg
```

### Для новых Mac:

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

[R-4.5.0-arm64.pkg](#)

### или для старых Mac:

For older Intel Macs:

[R-4.5.0-x86\\_64.pkg](#)

SHA1-hash: d1121c69451118c6e43d66b643c589008340f3e7  
(ca. 100MB, notarized and signed)

## Latest release:

**R 4.5.0** binary for macOS 11 (**Big Sur**) and higher, signed and notarized packages.

Contains R 4.5.0 framework, R.app GUI 1.81, Tcl/Tk 8.6.12 X11 libraries and Texinfo components are optional and can be omitted when choosing "custom install", they 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 prompt. If the installation fails, move the downloaded file away from the *Download* or Desktop).

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

This release uses Xcode 14.2/14.3 and GNU Fortran 14.2. If you wish to compile R Fortran code, you may need to download the corresponding GNU Fortran compiler: [project.org/tools](https://project.org/tools). Any external libraries and tools are expected to live in `/opt/R/arm64` or `/opt/R/x86_64` (Intel).

# Установка RStudio

Вернитесь или перейдите по ссылке [posit.co/download/rstudio-desktop](https://posit.co/download/rstudio-desktop)

Нажмите **DOWNLOAD RSTUDIO DESKTOP**

Следуйте инструкциям установщика

## 2: Install RStudio

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This version of RStudio is only supported on macOS 13 and higher. For earlier macOS environments, please [download a previous version](#).

Size: 557.15 MB | [SHA-256: BE73D3A9](#) | Version: 2024.12.1+563 |  
Released: 2025-02-13

# Запустите RStudio

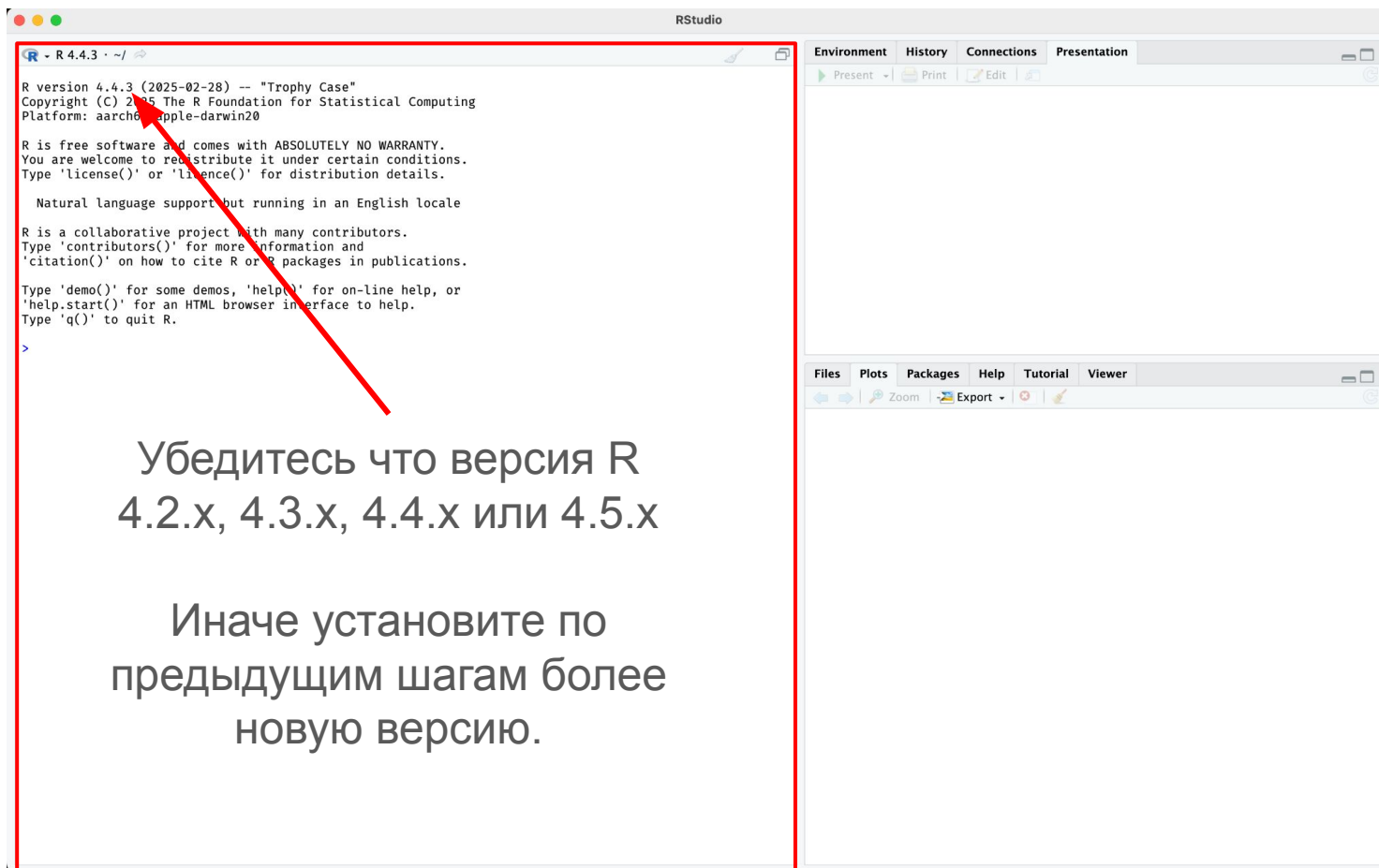


Иконка RStudio - удобный интерфейс.  
Запускаем ее.



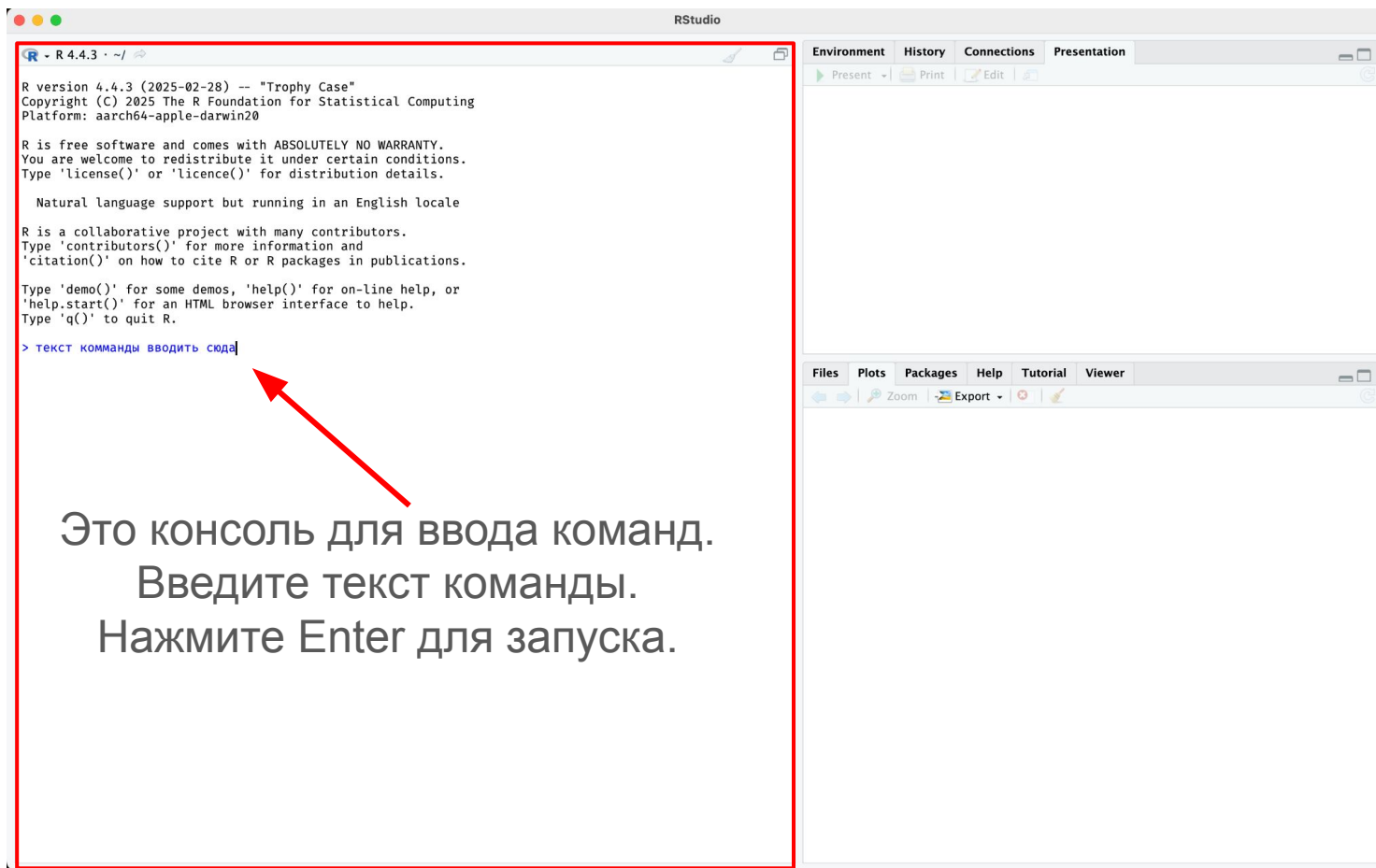
Иконка R - запускает только  
консоль для кода.

# Запустите RStudio





# Запуск команд в RStudio



# Запуск команд в RStudio

```
R version 4.4.3 (2025-02-28) -- "Trophy Case"
Copyright (C) 2025 The R Foundation for Statistical Computing
Platform: aarch64-apple-darwin20

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.

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.

> summary(mtcars)
```

| mpg           | cyl           | disp          | hp            | drat          | wt            |
|---------------|---------------|---------------|---------------|---------------|---------------|
| Min. :10.40   | Min. :4.000   | Min. :71.1    | Min. :52.0    | Min. :2.760   | Min. :1.513   |
| 1st Qu.:15.43 | 1st Qu.:4.000 | 1st Qu.:120.8 | 1st Qu.:96.5  | 1st Qu.:3.080 | 1st Qu.:2.581 |
| Median :19.20 | Median :6.000 | Median :196.3 | Median :123.0 | Median :3.695 | Median :3.325 |
| Mean :20.09   | Mean :6.188   | Mean :230.7   | Mean :146.7   | Mean :3.597   | Mean :3.217   |
| 3rd Qu.:22.80 | 3rd Qu.:8.000 | 3rd Qu.:326.0 | 3rd Qu.:180.0 | 3rd Qu.:3.920 | 3rd Qu.:3.610 |
| Max. :33.90   | Max. :8.000   | Max. :472.0   | Max. :335.0   | Max. :4.930   | Max. :5.424   |

```
      qsec      vs      am      gear      carb
Min. :14.50  Min. :0.0000  Min. :0.0000  Min. :3.000  Min. :1.000
1st Qu.:16.89  1st Qu.:0.0000  1st Qu.:0.0000  1st Qu.:3.000  1st Qu.:2.000
Median :17.71  Median :0.0000  Median :0.0000  Median :4.000  Median :2.000
Mean :17.85   Mean :0.4375   Mean :0.4062   Mean :3.688   Mean :2.812
3rd Qu.:18.90  3rd Qu.:1.0000  3rd Qu.:1.0000  3rd Qu.:4.000  3rd Qu.:4.000
Max. :22.90   Max. :1.0000   Max. :1.0000   Max. :5.000   Max. :8.000

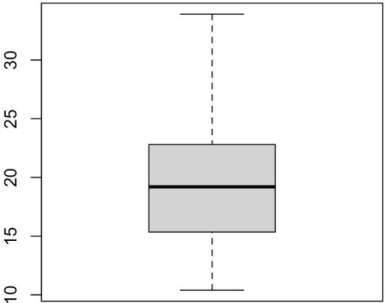
> boxplot(mtcars$mpg)
> |
```

Environment History Connections Presentation

Present Print Edit

Files Plots Packages Help Tutorial Viewer

Zoom Export



A boxplot showing the distribution of miles per gallon (mpg) for the mtcars dataset. The y-axis ranges from 10 to 30. The box represents the interquartile range (IQR) from approximately 15.4 to 22.8, with a median line at 19.2. Whiskers extend from 10.4 to 33.9. There are no outliers.

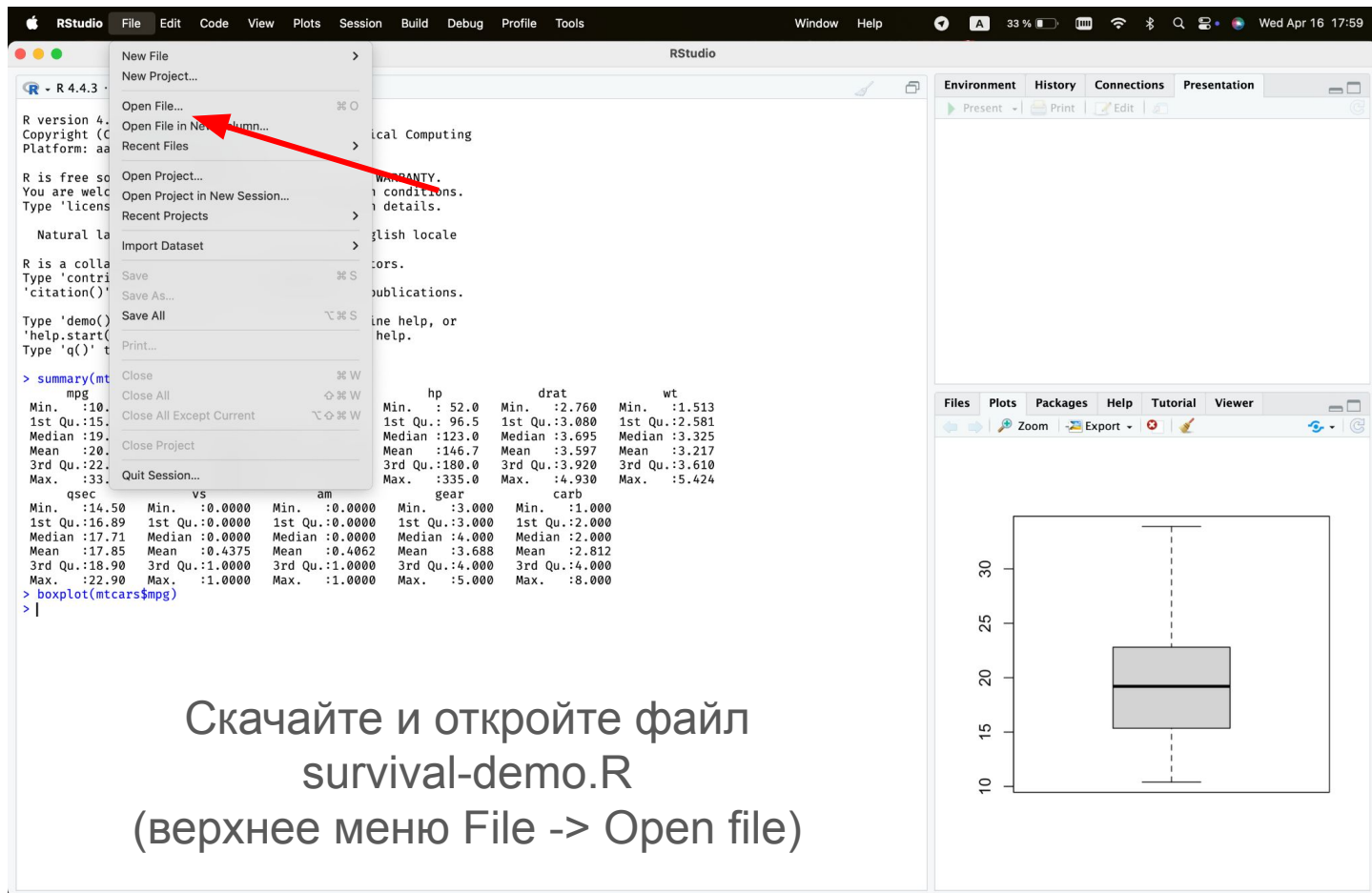
Попробуйте команды

`summary(mtcars)`

`boxplot(mtcars$mpg)`

Должен выводиться график

# Запуск файлов в RStudio



The screenshot shows the RStudio interface. The 'File' menu is open, and a red arrow points to the 'Open File...' option. The console displays the following summary statistics for the 'mtcars' dataset:

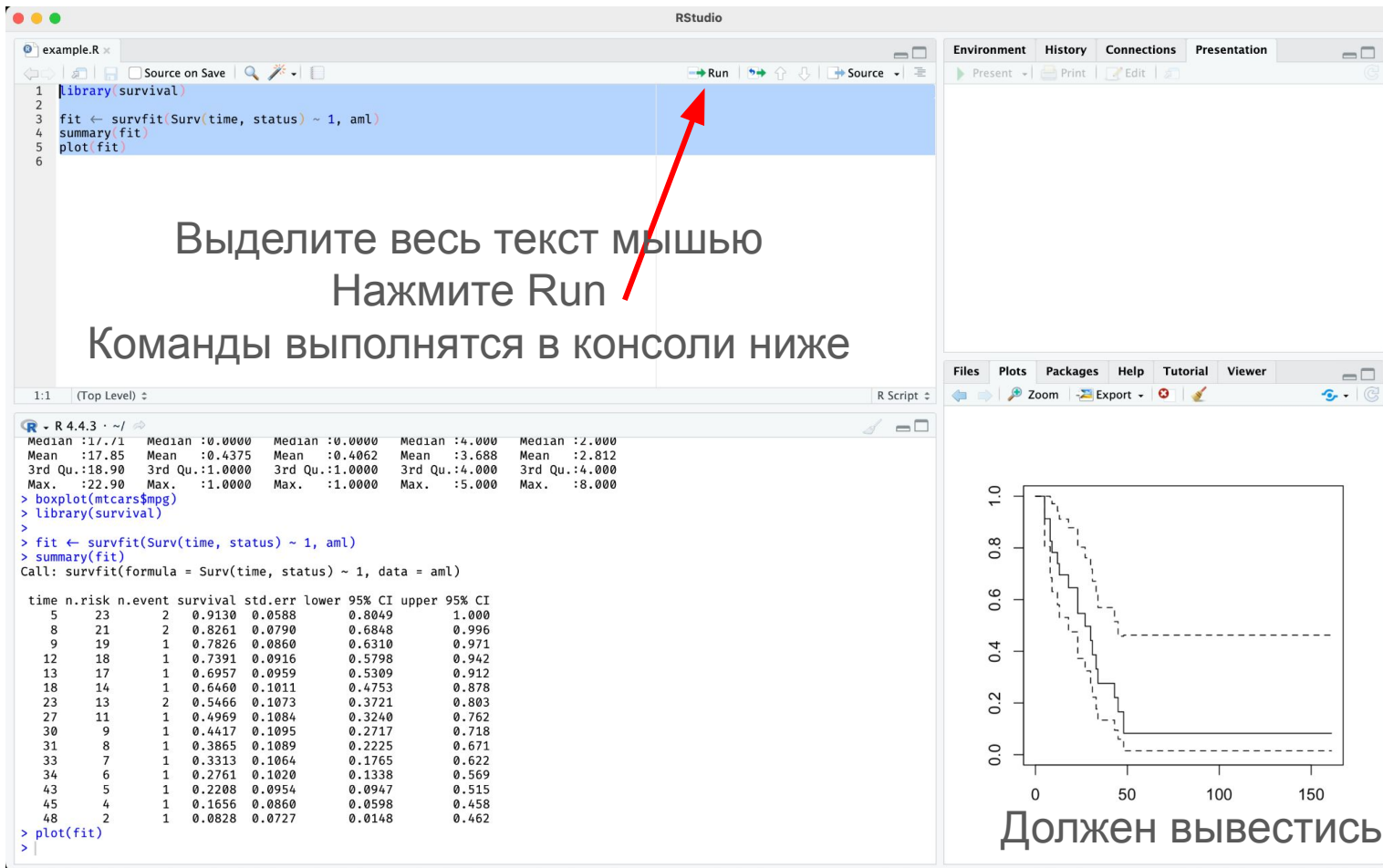
|         | mpg  | vs      | am      | gear   | carb   |
|---------|------|---------|---------|--------|--------|
| Min.    | :10. | :0.0000 | :0.0000 | :3.000 | :1.000 |
| 1st Qu. | :15. | :0.0000 | :0.0000 | :3.000 | :2.000 |
| Median  | :19. | :0.0000 | :0.0000 | :4.000 | :2.000 |
| Mean    | :20. | :0.4375 | :0.4062 | :3.688 | :2.812 |
| 3rd Qu. | :22. | :1.0000 | :1.0000 | :4.000 | :4.000 |
| Max.    | :33. | :1.0000 | :1.0000 | :5.000 | :8.000 |

The console also shows the command `boxplot(mtcars$mpg)` and its output, which is a boxplot of the 'mpg' variable. The boxplot shows a median of approximately 19, with the interquartile range (IQR) spanning from about 15 to 23. The whiskers extend from approximately 10 to 33.

Скачайте и откройте файл survival-demo.R  
(верхнее меню File -> Open file)

# Запуск файлов в RStudio

Выделите весь текст мышью  
Нажмите Run  
Команды выполняются в консоли ниже



The screenshot shows the RStudio environment. The top pane contains an R script with the following code:

```
1 library(survival)
2
3 fit <- survfit(Surv(time, status) ~ 1, aml)
4 summary(fit)
5 plot(fit)
6
```

A red arrow points to the 'Run' button in the top right of the script editor.

The bottom pane shows the R console output, which includes the execution of the script and the resulting survival plot:

```
> boxplot(mtcars$mpg)
> library(survival)
> fit <- survfit(Surv(time, status) ~ 1, aml)
> summary(fit)
Call: survfit(formula = Surv(time, status) ~ 1, data = aml)

   time n.risk n.event survival std.err lower 95% CI upper 95% CI
5      23      2    0.9130  0.0588  0.8049    1.000
8      21      2    0.8261  0.0790  0.6848    0.996
9      19      1    0.7826  0.0860  0.6310    0.971
12     18      1    0.7391  0.0916  0.5798    0.942
13     17      1    0.6957  0.0959  0.5309    0.912
18     14      1    0.6460  0.1011  0.4753    0.878
23     13      2    0.5466  0.1073  0.3721    0.803
27     11      1    0.4969  0.1084  0.3240    0.762
30      9      1    0.4417  0.1095  0.2717    0.718
31      8      1    0.3865  0.1089  0.2225    0.671
33      7      1    0.3313  0.1064  0.1765    0.622
34      6      1    0.2761  0.1020  0.1338    0.569
43      5      1    0.2208  0.0954  0.0947    0.515
45      4      1    0.1656  0.0860  0.0598    0.458
48      2      1    0.0828  0.0727  0.0148    0.462
```

The right pane shows a survival plot with the following characteristics:

- The y-axis represents survival probability, ranging from 0.0 to 1.0.
- The x-axis represents time, ranging from 0 to 150.
- The plot shows a solid line representing the survival function and a dashed line representing the confidence interval.
- The survival probability starts at 1.0 and decreases over time, reaching approximately 0.1 by time 150.

Должен выводиться график

# Установка пакетов

Введите в консоли команду (обратите внимание на кавычки)

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

```
R R 4.4.3 ~/  
45      4      1 0.1656 0.0860      0.0598      0.458  
48      2      1 0.0828 0.0727      0.0148      0.462  
> plot(fit)  
> install.packages("tidyverse")  
Installing package into '/Users/ydb/Temporary/demo'  
(as 'lib' is unspecified)  
also installing the dependencies 'fastmap', 'colorspace', 'sys', 'bit', 'ps', 'base64enc', 'sass', 'digest', 'cachem', 'fa  
rver', 'labeling', 'munsell', 'RColorBrewer', 'viridisLite', 'rappdirs', 'rematch', 'askpass', 'bit64', 'prettyunits', 'pr  
ocessx', 'evaluate', 'highr', 'xfun', 'yaml', 'bslib', 'fontawesome', 'htmltools', 'jquerylib', 'tinytex', 'backports', 'g  
enerics', 'glue', 'lifecycle', 'memoise', 'blob', 'DBI', 'R6', 'tidyselect', 'vctrs', 'withr', 'data.table', 'gtable', 'is  
oband', 'scales', 'gargle', 'uuid', 'cellranger', 'curl', 'ids', 'rematch2', 'cpp11', 'pkgconfig', 'mime', 'openssl', 'tim  
exchange', 'utf8', 'systemfonts', 'textshaping', 'clipr', 'crayon', 'vroom', 'tzdb', 'progress', 'callr', 'fs', 'knitr', 'r  
markdown', 'selectr', 'stringi', 'fansi', 'broom', 'conflicted', 'cli', 'dbplyr', 'dplyr', 'dtplyr', 'forcats', 'ggplot2',  
'googledrive', 'googlesheets4', 'haven', 'hms', 'httr', 'jsonlite', 'lubridate', 'magrittr', 'modelr', 'pillar', 'purrr',  
'ragg', 'readr', 'readxl', 'reprex', 'rlang', 'rstudioapi', 'rvest', 'stringr', 'tibble', 'tidyr', 'xml2'  
  
trying URL 'https://cloud.r-project.org/bin/macosx/big-sur-arm64/contrib/4.4/fastmap_1.2.0.tgz'  
Content type 'application/x-gzip' length 192183 bytes (187 KB)  
  
downloaded 187 KB
```

долго будут ставиться пакеты

```
trying URL 'https://cloud.r-project.org/bin/macosx/big-sur-arm64/contrib/4.4/tidyverse_2.0.0.tgz'  
Content type 'application/x-gzip' length 428901 bytes (418 KB)  
  
downloaded 418 KB
```

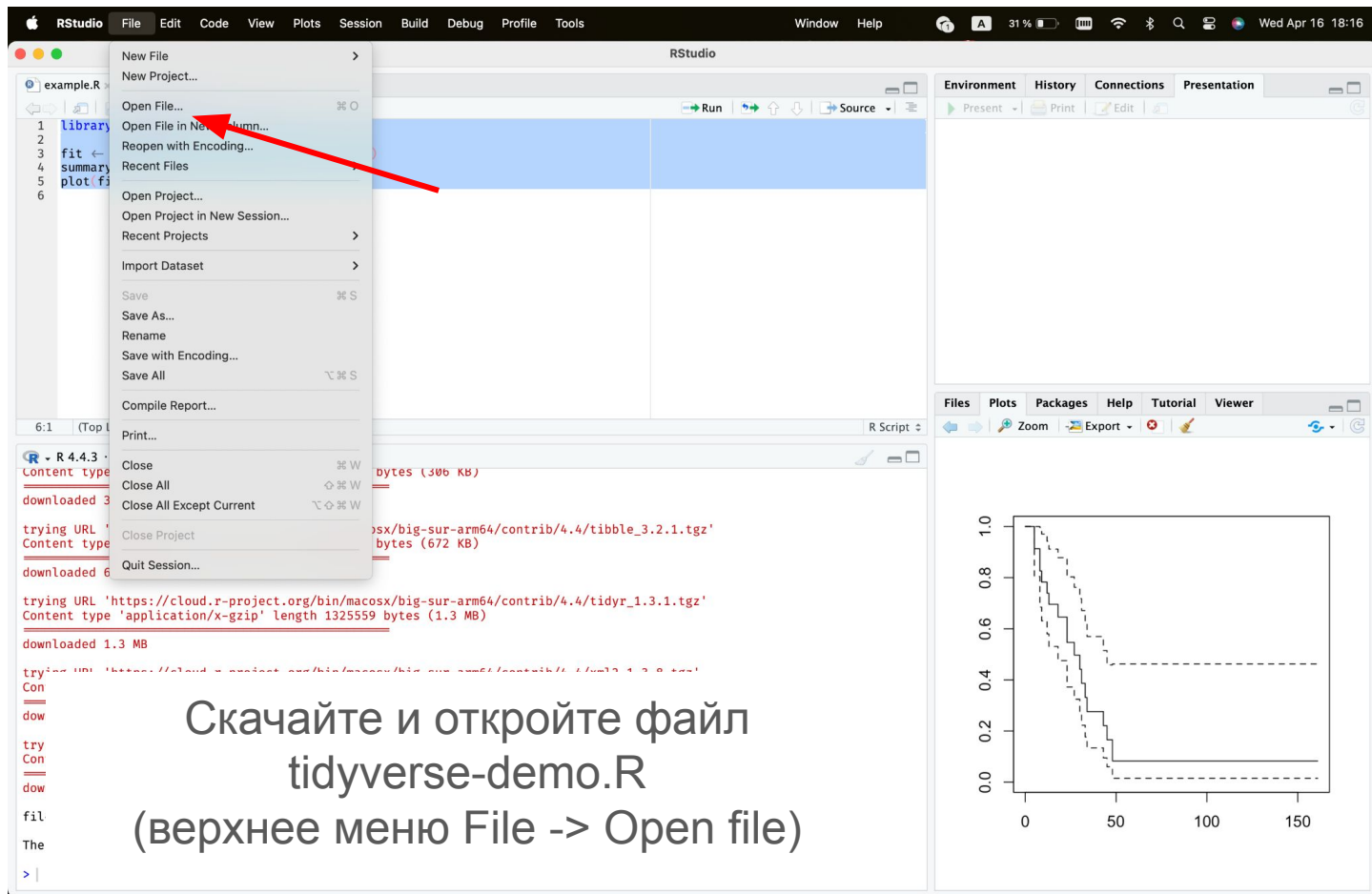
file 'DESCRIPTION' has the wrong MD5 checksum

The downloaded binary packages are in  
/var/folders/6q/x81hj00d5sjtyyicbh6yp64h0000gn/T//Rtmp1cRVmk/downloaded\_packages

```
> |
```

пока не закончится на tidyverse

# Установка пакетов



The screenshot displays the RStudio application window. The 'File' menu is open, and the 'Open File...' option is highlighted with a red arrow. The console shows the following R commands and output:

```
library(tidyverse)
fit <- glm(...)
summary(fit)
plot(fit)
```

The console output shows the installation of the 'tidyverse' package and the 'tidyr' package from the cloud.r-project.org repository. The output includes the URL, content type, length, and size of the downloaded files.

The Environment pane shows the following variables:

- fit (306 KB)
- summary (672 KB)
- plot (672 KB)

The Plots pane shows a survival plot with the following data:

| Time | Survival |
|------|----------|
| 0    | 1.0      |
| 50   | 0.4      |
| 100  | 0.1      |
| 150  | 0.1      |

Скачайте и откройте файл  
tidyverse-demo.R  
(верхнее меню File -> Open file)

# Установка пакетов

The screenshot shows the RStudio interface. The top-left pane contains R code for installing and plotting with tidyverse. The bottom-left pane shows the console output, including the download of tidyverse 2.0.0 and a list of attached packages. The bottom-right pane displays a box plot of 'Miles / gallon' by 'Transmission' type.

**Code in R Script:**

```
1 library(tidyverse)
2
3 ggplot(mtcars) +
4   geom_boxplot(aes(x = factor(am), y = mpg)) +
5   labs(
6     x = "Transmission (0 - auto, 1 - manual)",
7     y = "Miles / gallon",
8   )
9
```

**Console Output:**

```
R - R 4.4.3 - ~/
trying URL 'https://cloud.r-project.org/bin/macosx/big-sur-arm64/contrib/4.4/tidyverse_2.0.0.tgz'
Content type 'application/x-gzip' length 428901 bytes (418 KB)
downloaded 418 KB

file 'DESCRIPTION' has the wrong MD5 checksum

The downloaded binary packages are in
/var/folders/6q/x81hj00d5sjgttycbh6yp64h0000gn/T//Rtmp1cRVMK/downloaded_packages
> library(tidyverse)
— Attaching core tidyverse packages — tidyverse 2.0.0 —
✓ dplyr 1.1.4 ✓ readr 2.1.5
✓ forcats 1.0.0 ✓ stringr 1.5.1
✓ ggplot2 3.5.2 ✓ tibble 3.2.1
✓ lubridate 1.9.4 ✓ tidyr 1.3.1
✓ purrr 1.0.4
— Conflicts — tidyverse_conflicts() —
✖ dplyr::filter() masks stats::filter()
✖ dplyr::lag() masks stats::lag()
! Use the conflicted package to force all conflicts to become errors
>
> ggplot(mtcars) +
+   geom_boxplot(aes(x = factor(am), y = mpg)) +
+   labs(
+     x = "Transmission (0 - auto, 1 - manual)",
+     y = "Miles / gallon",
+   )
>
```

**Box Plot Data:**

| Transmission | Miles / gallon (approx. median) |
|--------------|---------------------------------|
| 0 (auto)     | 16.5                            |
| 1 (manual)   | 22.5                            |