RStudio IDE Cheat Sheet

learn more at www.rstudio.com

RStudio

The RStudio IDE is an Integrated Development Environment in R that comes in three versions

Desktop IDE
A local version of the IDE for your desktop

Open Source Server
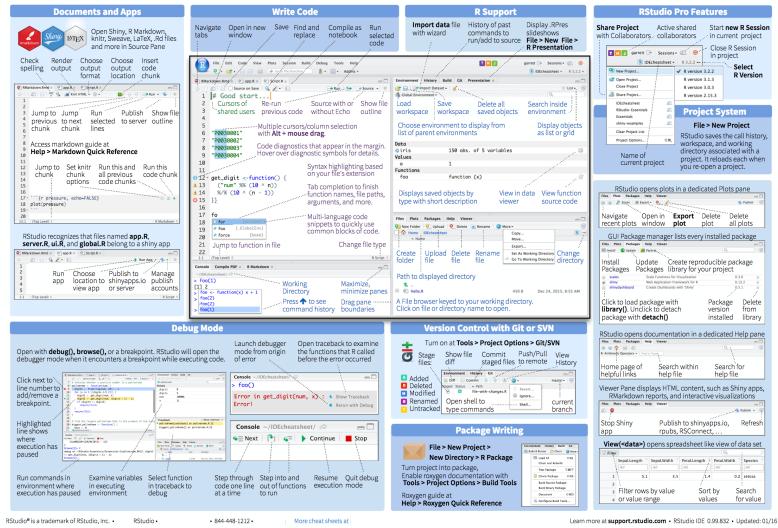for larger compute resources and remote access

Professional Server
for teams that share large compute resources, large data, and uniform environments for collaboration

Download all at **www.rstudio.com**. Each provides the same useful interface:

Documents and Apps

Open Shiny, R Markdown, knitr, Sweave, LaTeX, .Rd files and more in Source Pane

Check spelling | Render output | Choose output format | Choose output location | Insert code chunk

Jump to previous chunk | Jump to next chunk | Run selected lines | Publish to server | Show outline

Access markdown guide at
Help > Markdown Quick Reference

Jump to chunk | Set knitr chunk options | Run this and all previous code chunks | Run this code chunk

```
17  ```{r pressure, echo=FALSE}
18  plot(pressure)
19  ```
```

RStudio recognizes that files named **app.R**, **server.R**, **ui.R**, and **global.R** belong to a shiny app.

Run app | Choose location to view app | Publish to shinyapps.io or server | Manage publish accounts

Write Code

Navigate tabs | Open in new window | Save | Find and replace | Compile as notebook | Run selected code

```
1  # Good start...
2
3
4
5
6  "P0030001"
7  "P0030002"
8  "P0030003"
9  "P0030004"
10
12  get_digit <-function() {
13    ("num" %% (10 ^ n))
14    %/% (10 ^ (n - 1))
15  }}
16
17  fo
18    for        {snippet}
19    foo    {.GlobalEnv}
20    force        {base}
21  Jump to function in file
1:1  (Top Level)          R Script
```

Cursors of shared users | Re-run previous code | Source with or without Echo | Show file outline

Multiple cursors/column selection with **Alt + mouse drag**.

Code diagnostics that appear in the margin. Hover over diagnostic symbols for details.

Syntax highlighting based on your file's extension

Tab completion to finish function names, file paths, arguments, and more.

Multi-language code snippets to quickly use common blocks of code.

Change file type

```
Console    Compile PDF ×    R Markdown
~/IDEcheatsheet/
> foo(1)
[1] 2
> foo <- function(x) x + 1
> foo(2)
> foo(2)
> foo(1)
1:1  (Top Level)          R Script
```

Working Directory

Maximize, minimize panes

Press ↑ to see command history

Drag pane boundaries

```
Files  Plots  Packages  Help  Viewer
🗀 New Folder  ⬆ Upload  🗑 Delete  ✎ Rename  ⚙ More▾
🗀 Home    IDEcheatsheet
    Name
    ..
    Copy...
    Move...
    Export...
    Set As Working Directory
    Go To Working Directory
    hello.R              450 B      Dec 24, 2015, 8:55 AM
```

Create folder | Upload file | Delete file | Rename file | Change directory

Path to displayed directory

A File browser keyed to your working directory. Click on file or directory name to open.

R Support

Import data file with wizard

History of past commands to run/add to source

Display .RPres slideshows
File > New File > R Presentation

```
R    File  Edit  Code  View  Plots  Session  Build  Debug  Tools  Help
                                                    IDEcheatsheet ▾    R 3.2.2 ▾
RMarkdown.Rmd ×  app.R ×  Script.R ×
   Source on Save  🔍 🔧 ▾  →Run  →▾ →Source ▾
Environment  History  Build  Git  Presentation
🗀 Import Dataset ▾                          List ▾
🌐 Global Environment ▾                              🔍
Data
  ⊙ iris          150 obs. of 5 variables
Values
  a              1
Functions
  foo          function (x)
```

Load workspace | Save workspace | Delete all saved objects | Search inside environment

Choose environment to display from list of parent environments

Display objects as list or grid

Displays saved objects by type with short description

View in data viewer

View function source code

RStudio Pro Features

Share Project with Collaborators | Active shared collaborators | Start **new R Session** in current project

```
T  H  J    garrett    Sessions ▾
                        IDEcheatsheet ▾    R 3.2.2 ▾
New Project...                        ✓ R version 3.2.2
Open Project...                         R version 3.1.3
Close Project                           R version 3.0.3
Share Project...                        R version 2.15.3

IDEcheatsheet
RStudio-Essentials
Essentials
shiny-examples
Clear Project List
Project Options...
```

Close R Session in project | **Select R Version**

Name of current project

Project System

File > New Project

RStudio saves the call history, workspace, and working directory associated with a project. It reloads each when you re-open a project.

RStudio opens plots in a dedicated Plots pane

```
Files  Plots  Packages  Help  Viewer
🔍 Zoom  📤 Export ▾  🗑  🧹            🔄      ⬆ Publish ▾
```

Navigate recent plots | Open in window | **Export plot** | Delete plot | Delete all plots

GUI Package manager lists every installed package

```
Files  Plots  Packages  Help  Viewer
Install  ⟳ Update                          🔍 Packa
⬜ scales          Scale Functions for Visualization      3.0.0  ⊗
⬜ shiny           Web Application Framework for R        0.12.2 ⊗
⬜ shinydashboard  Create Dashboards with 'Shiny'         0.5.1  ⊗
```

Install Packages | Update Packages | Create reproducible package library for your project

Click to load package with **library()**. Unclick to detach package with **detach()** | Package version installed | Delete from library

RStudio opens documentation in a dedicated Help pane

```
Files  Plots  Packages  Help  Viewer
R: Arithmetic Operators ▾    Find in Topic
R Arithmetic Operators
```

Home page of helpful links | Search within help file | Search for help file

Viewer Pane displays HTML content, such as Shiny apps, RMarkdown reports, and interactive visualizations

```
Files  Plots  Packages  Help  Viewer
                                    ⬆ Publish ▾
```

Stop Shiny app | Publish to shinyapps.io, rpubs, RSConnect, … | Refresh

View(<data>) opens spreadsheet like view of data set

```
Filter
    Sepal.Length  Sepal.Width  Petal.Length  Petal.Width  Species
    All           All          All           All          All
1   5.1           3.5          1.4           0.2          setosa
```

Filter rows by value or value range | Sort by values | Search for value

Debug Mode

Open with **debug()**, **browse()**, or a breakpoint. RStudio will open the debugger mode when it encounters a breakpoint while executing code.

Launch debugger mode from origin of error

Open traceback to examine the functions that R called before the error occurred

Click next to line number to add/remove a breakpoint.

Highlighted line shows where execution has paused

```
Console    ~/IDEcheatsheet/
> foo()
Error in get_digit(num, x)... 🔴 Show Traceback
Error!
                            🔵 Rerun with Debug
```

```
Console    ~/IDEcheatsheet/
🔁 Next  ⟳  ⟲  ▶ Continue  ■ Stop
```

Run commands in environment where execution has paused

Examine variables in executing environment

Select function in traceback to debug

Step through code one line at a time

Step into and out of functions to run

Resume execution

Quit debug mode

Version Control with Git or SVN

Turn on at **Tools > Project Options > Git/SVN**

Stage files:

Show file diff | Commit staged files | Push/Pull to remote | View History

- 🟩 Added
- 🟥 Deleted
- 🟦 Modified
- 🟨 Renamed
- ⬜ Untracked

```
Environment  History  Git
🔄  ⬇  ⬆  Diff  ✓ Commit              master ▾
Staged  Status  ▲ Path
              file-with-changes.R
    Revert...
    Ignore...
    Shell...
```

Open shell to type commands

current branch

Package Writing

File > New Project > New Directory > R Package

Turn project into package, Enable roxygen documentation with **Tools > Project Options > Build Tools**

Roxygen guide at **Help > Roxygen Quick Reference**

```
Environment  History  Build  Git
🔨 Build & Reload  ✓ Check  More ▾
    Load All                ⌘L
    Clean and Rebuild
    Test Package           ⌘⇧T
    Check Package          ⌘⇧E
    Build Source Package
    Build Binary Package
    Document               ⌘⇧D
    Configure Build Tools...
```

1 LAYOUT

	Windows/Linux	Mac
Move focus to Source Editor	Ctrl+1	Ctrl+1
Move focus to Console	Ctrl+2	Ctrl+2
Move focus to Help	Ctrl+3	Ctrl+3
Show History	Ctrl+4	Ctrl+4
Show Files	Ctrl+5	Ctrl+5
Show Plots	Ctrl+6	Ctrl+6
Show Packages	Ctrl+7	Ctrl+7
Show Environment	Ctrl+8	Ctrl+8
Show Git/SVN	Ctrl+9	Ctrl+9
Show Build	Ctrl+0	Ctrl+0

2 RUN CODE

	Windows/Linux	Mac
Search command history	Ctrl+↑	Cmd+↑
Navigate command history	↑/↓	↑/↓
Move cursor to start of line	Home	Cmd+←
Move cursor to end of line	End	Cmd+→
Change working directory	Ctrl+Shift+H	Ctrl+Shift+H
Interrupt current command	Esc	Esc
Clear console	Ctrl+L	Ctrl+L
Quit Session (desktop only)	Ctrl+Q	Cmd+Q
Restart R Session	Ctrl+Shift+F10	Cmd+Shift+F10
Run current line/selection	Ctrl+Enter	Cmd+Enter
Run current (retain cursor)	Alt+Enter	Option+Enter
Run from current to end	Ctrl+Alt+E	Cmd+Option+E
Run the current function	Ctrl+Alt+F	Cmd+Option+F
Source a file	Ctrl+Shift+O	Cmd+Shift+O
Source the current file	Ctrl+Shift+S	Cmd+Shift+S
Source with echo	Ctrl+Shift+Enter	Cmd+Shift+Enter

3 NAVIGATE CODE

	Windows/Linux	Mac
Goto File/Function	Ctrl+.	Ctrl+.
Fold Selected	Alt+L	Cmd+Option+L
Unfold Selected	Shift+Alt+L	Cmd+Shift+Option+L
Fold All	Alt+O	Cmd+Option+O
Unfold All	Shift+Alt+O	Cmd+Shift+Option+O
Go to line	Shift+Alt+G	Cmd+Shift+Option+G
Jump to	Shift+Alt+J	Cmd+Shift+Option+J
Switch to tab	Ctrl+Shift+.	Ctrl+Shift+.
Previous tab	Ctrl+F11	Ctrl+F11
Next tab	Ctrl+F12	Ctrl+F12
First tab	Ctrl+Shift+F11	Ctrl+Shift+F11
Last tab	Ctrl+Shift+F12	Ctrl+Shift+F12
Navigate back	Ctrl+F9	Cmd+F9
Navigate forward	Ctrl+F10	Cmd+F10
Jump to Brace	Ctrl+P	Ctrl+P
Select within Braces	Ctrl+Shift+Alt+E	Ctrl+Shift+Alt+E
Use Selection for Find	Ctrl+F3	Cmd+E
Find in Files	Ctrl+Shift+F	Cmd+Shift+F
Find Next	Win: F3, Linux: Ctrl+G	Cmd+G
Find Previous	W: Shift+F3, L: Ctrl+Shift	Cmd+Shift+G
Jump to Word	Ctrl+ ←/→	Option+ ←/→
Jump to Start/End	Ctrl+↑/↓	Cmd+↑/↓

4 WRITE CODE

	Windows /Linux	Mac
Attempt completion	Tab or Ctrl+Space	Tab or Cmd+Space
Navigate candidates	↑/↓	↑/↓
Accept candidate	Enter, Tab, or →	Enter, Tab, or →
Dismiss candidates	Esc	Esc
Undo	Ctrl+Z	Cmd+Z
Redo	Ctrl+Shift+Z	Cmd+Shift+Z
Cut	Ctrl+X	Cmd+X
Copy	Ctrl+C	Cmd+C
Paste	Ctrl+V	Cmd+V
Select All	Ctrl+A	Cmd+A
Delete Line	Ctrl+D	Cmd+D
Select	Shift+[Arrow]	Shift+[Arrow]
Select Word	Ctrl+Shift+ ←/→	Option+Shift+ ←/→
Select to Line Start	Alt+Shift+←	Cmd+Shift+←
Select to Line End	Alt+Shift+→	Cmd+Shift+→
Select Page Up/Down	Shift+PageUp/Down	Shift+PageUp/Down
Select to Start/End	Shift+Alt+↑/↓	Cmd+Shift+↑/↓
Delete Word Left	Ctrl+Backspace	Ctrl+Opt+Backspace
Delete Word Right		Option+Delete
Delete to Line End		Ctrl+K
Delete to Line Start		Option+Backspace
Indent	Tab (at start of line)	Tab (at start of line)
Outdent	Shift+Tab	Shift+Tab
Yank line up to cursor	Ctrl+U	Ctrl+U
Yank line after cursor	Ctrl+K	Ctrl+K
Insert yanked text	Ctrl+Y	Ctrl+Y
Insert <-	Alt+-	Option+-
Insert %>%	Ctrl+Shift+M	Cmd+Shift+M
Show help for function	F1	F1
Show source code	F2	F2
New document	Ctrl+Shift+N	Cmd+Shift+N
New document (Chrome)	Ctrl+Alt+Shift+N	Cmd+Shift+Alt+N
Open document	Ctrl+O	Cmd+O
Save document	Ctrl+S	Cmd+S
Close document	Ctrl+W	Cmd+W
Close document (Chrome)	Ctrl+Alt+W	Cmd+Option+W
Close all documents	Ctrl+Shift+W	Cmd+Shift+W
Extract function	Ctrl+Alt+X	Cmd+Option+X
Extract variable	Ctrl+Alt+V	Cmd+Option+V
Reindent lines	Ctrl+I	Cmd+I
(Un)Comment lines	Ctrl+Shift+C	Cmd+Shift+C
Reflow Comment	Ctrl+Shift+/	Cmd+Shift+/
Reformat Selection	Ctrl+Shift+A	Cmd+Shift+A
Select within braces	Ctrl+Shift+E	Ctrl+Shift+E
Show Diagnostics	Ctrl+Shift+Alt+P	Cmd+Shift+Alt+P
Transpose Letters		Ctrl+T
Move Lines Up/Down	Alt+↑/↓	Option+↑/↓
Copy Lines Up/Down	Shift+Alt+↑/↓	Cmd+Option+↑/↓
Add New Cursor Above	Ctrl+Alt+Up	Ctrl+Alt+Up
Add New Cursor Below	Ctrl+Alt+Down	Ctrl+Alt+Down
Move Active Cursor Up	Ctrl+Alt+Shift+Up	Ctrl+Alt+Shift+Up
Move Active Cursor Down	Ctrl+Alt+Shift+Down	Ctrl+Alt+Shift+Down
Find and Replace	Ctrl+F	Cmd+F
Use Selection for Find	Ctrl+F3	Cmd+E
Replace and Find	Ctrl+Shift+J	Cmd+Shift+J

5 DEBUG CODE

	Windows/Linux	Mac
Toggle Breakpoint	Shift+F9	Shift+F9
Execute Next Line	F10	F10
Step Into Function	Shift+F4	Shift+F4
Finish Function/Loop	Shift+F6	Shift+F6
Continue	Shift+F5	Shift+F5
Stop Debugging	Shift+F8	Shift+F8

6 VERSION CONTROL

	Windows/Linux	Mac
Show diff	Ctrl+Alt+D	Ctrl+Option+D
Commit changes	Ctrl+Alt+M	Ctrl+Option+M
Scroll diff view	Ctrl+↑/↓	Ctrl+↑/↓
Stage/Unstage (Git)	Spacebar	Spacebar
Stage/Unstage and move to next	Enter	Enter

7 MAKE PACKAGES

	Windows/Linux	Mac
Build and Reload	Ctrl+Shift+B	Cmd+Shift+B
Load All (devtools)	Ctrl+Shift+L	Cmd+Shift+L
Test Package (Desktop)	Ctrl+Shift+T	Cmd+Shift+T
Test Package (Web)	Ctrl+Alt+F7	Cmd+Alt+F7
Check Package	Ctrl+Shift+E	Cmd+Shift+E
Document Package	Ctrl+Shift+D	Cmd+Shift+D

8 DOCUMENTS AND APPS

	Windows/Linux	Mac
Preview HTML (Markdown, etc.)	Ctrl+Shift+K	Cmd+Shift+K
Knit Document (knitr)	Ctrl+Shift+K	Cmd+Shift+K
Compile Notebook	Ctrl+Shift+K	Cmd+Shift+K
Compile PDF (TeX and Sweave)	Ctrl+Shift+K	Cmd+Shift+K
Insert chunk (Sweave and Knitr)	Ctrl+Alt+I	Cmd+Option+I
Insert code section	Ctrl+Shift+R	Cmd+Shift+R
Re-run previous region	Ctrl+Shift+P	Cmd+Shift+P
Run current document	Ctrl+Alt+R	Cmd+Option+R
Run from start to current line	Ctrl+Alt+B	Cmd+Option+B
Run the current code section	Ctrl+Alt+T	Cmd+Option+T
Run previous Sweave/Rmd code	Ctrl+Alt+P	Cmd+Option+P
Run the current chunk	Ctrl+Alt+C	Cmd+Option+C
Run the next chunk	Ctrl+Alt+N	Cmd+Option+N
Sync Editor & PDF Preview	Ctrl+F8	Cmd+F8
Previous plot	Ctrl+Alt+F11	Cmd+Option+F11
Next plot	Ctrl+Alt+F12	Cmd+Option+F12
Show Keyboard Shortcuts	Alt+Shift+K	Option+Shift+K

Why RStudio Server Pro?

Do everything you would do with the open source server with a commercial license, support, and more.

- edit the same project at the same time as others
- switch easily from one version of R to a different version
- open and run multiple R sessions simultaneously
- see what you and others are doing on your server
- tune your resources to improve performance
- integrate with your authentication, authorization, and audit practices

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