

# 第一章：配置 R 语言环境

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# 配置 R 语言环境

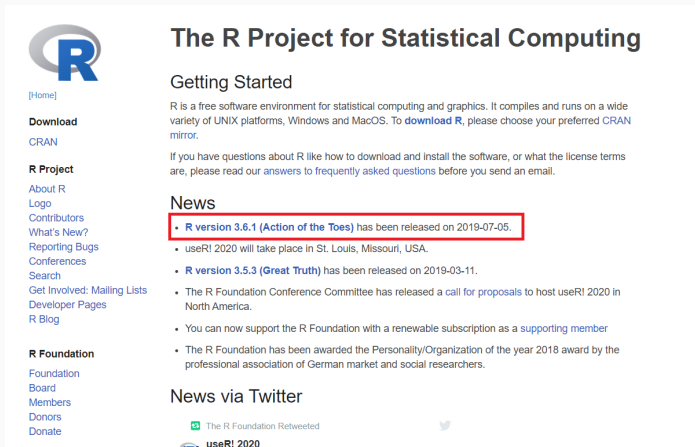
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主要分三步：


- 安装 R
- 安装 Rstudio
- 安装必要的宏包

# 第一步安装 R

- 下载并安装 R，官方网站<http://cran.r-project.org>



The screenshot shows the official R Project website. On the left is a navigation menu with links like [Home], Download, CRAN, R Project, About R, Logo, Contributors, What's New?, Reporting Bugs, Conferences, Search, Get Involved: Mailing Lists, Developer Pages, R Blog, R Foundation, Foundation, Board, Members, Donors, and Donate. The main content area has the title 'The R Project for Statistical Computing' and a 'Getting Started' section. Below this is a 'News' section with a red box highlighting the entry for 'R version 3.6.1 (Action of the Toes)' released on 2019-07-05. Other news items include 'useR! 2020' and 'R version 3.5.3 (Great Truth)'. At the bottom, there is a 'News via Twitter' section showing a tweet from 'The R Foundation' retweeted by 'useR! 2020'.



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## The R Project for Statistical Computing

### Getting Started


R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To [download R](#), please choose your preferred [CRAN mirror](#).


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.

### News

- **R version 3.6.1 (Action of the Toes)** has been released on 2019-07-05.
- useR! 2020 will take place in St. Louis, Missouri, USA.
- **R version 3.5.3 (Great Truth)** has been released on 2019-03-11.
- The R Foundation Conference Committee has released a [call for proposals](#) to host useR! 2020 in North America.
- You can now support the R Foundation with a renewable subscription as a [supporting member](#)
- The R Foundation has been awarded the Personality/Organization of the year 2018 award by the professional association of German market and social researchers.

### News via Twitter

 The R Foundation Retweeted

 useR! 2020

## 第二步安装 RStudio

- 下载并安装 RStudio, 官方网站  
<https://www.rstudio.com/download>
- 选择 RStudio Desktop

### Installers for Supported Platforms

| Installers                                      | Size      | Date       | MD5                              |
|---|-----------|------------|----------------------------------|
| RStudio 1.2.5001 - Ubuntu 18/Debian 10 (64-bit) | 105.43 MB | 2019-09-19 | f108e4d5c1b6c19690378b3ca0990249 |
| RStudio 1.2.5001 - Debian 9 (64-bit)            | 105.70 MB | 2019-09-19 | 23dca12a5e0a0849522f05b4a8600ce8 |
| RStudio 1.2.5001 - Fedora 28/Red Hat 8 (64-bit) | 120.90 MB | 2019-09-19 | 45eab0baf8d0504d183f09c8d40ae704 |
| RStudio 1.2.5001 - macOS 10.12+ (64-bit)        | 126.86 MB | 2019-09-19 | a4d8ee737818158b272450eaa4bd4cf  |
| RStudio 1.2.5001 - SLES/OpenSUSE 12 (64-bit)    | 99.04 MB  | 2019-09-19 | ca94a9bb7e7f5474eedd233ddeef14d6 |
| RStudio 1.2.5001 - OpenSUSE 15 (64-bit)         | 107.12 MB | 2019-09-19 | 2a40768fdc5c5f97cd1d40628bf8aaad |
| RStudio 1.2.5001 - Fedora 19/Red Hat 7 (64-bit) | 120.27 MB | 2019-09-19 | 14bc52d6f78bc4ee22abff2298be919f |
| RStudio 1.2.5001 - Ubuntu 14/Debian 8 (64-bit)  | 96.93 MB  | 2019-09-19 | c19b0ece90130bed7248c1bf6001c647 |
| RStudio 1.2.5001 - Windows 10/8/7 (64-bit)      | 149.83 MB | 2019-09-19 | c54d8779f363ec9636c7831e577521bd |
| RStudio 1.2.5001 - Ubuntu 16 (64-bit)           | 104.88 MB | 2019-09-19 | 4ff58a08c305207729feb65eb145a5a2 |

# 注意事项

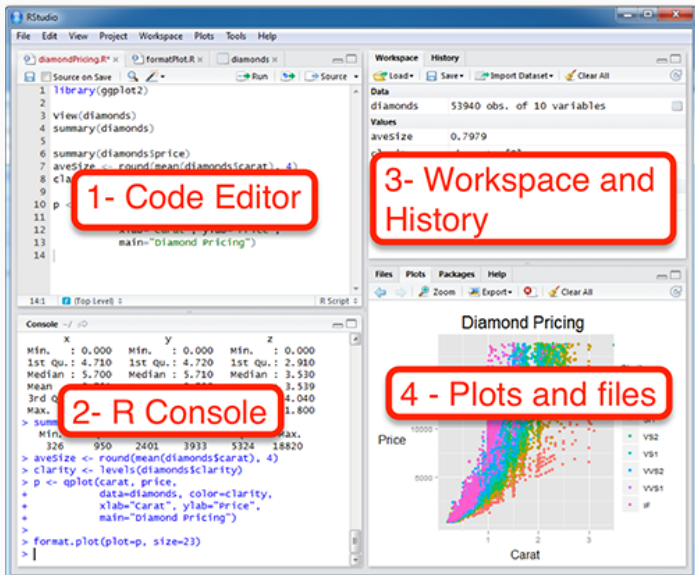
这里有个小小的提示：

- 电脑用户名不要有中文和空格
- 尽量安装在非系统盘，比如，可以选择安装在 D 盘
- 安装路径不要有中文和空格。比如，这样就好
  - D:/R
  - D:/Rstudio

可观看视

频<https://www.bilibili.com/video/BV1hA411e7k3>后安装

# RStudio 很友好



# RStudio 很友好

- 左上角是 Editor 窗口，负责编写代码
- 左下角是 Console 窗口，可以键入命令
- 右上角是 Environment 和 History 窗口，保存当前存储的数据和历史命令记录等
- 右下角是 Plot 和 Help 窗口，用于显示绘制图片和帮助文档



# R 与 RStudio 是什么关系呢

R

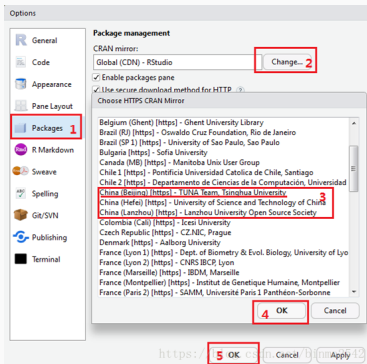
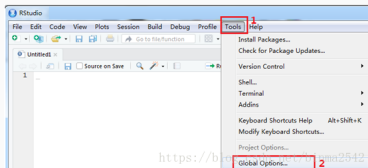


RStudio



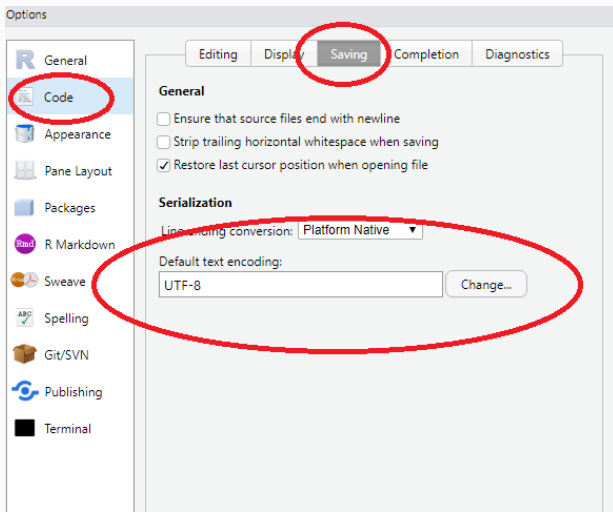
# 必要的配置 (可选)

- 宏包安装设置成国内镜像 Tools > Global options



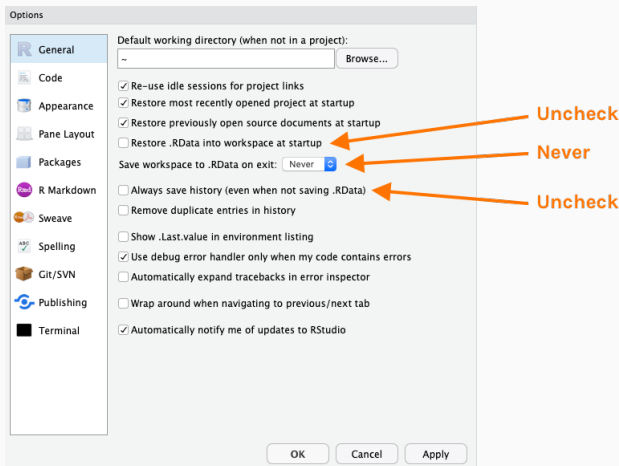
## 必要的配置 (可选)

- 如果打开代码是乱码，试试修设置 Tools > Global options

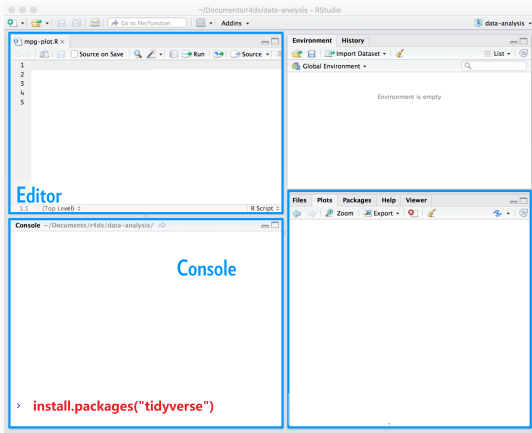


# 必要的配置

- 如果每次打开 Rstudio 非常慢，可以将这几个选项取消掉 Tools > Global options



# 第三步安装宏包



- 命令行安装
  - `install.packages("tidyverse")`

## Installing vs. Loading

INSTALL ONCE:

```
install.packages("light")
```



USE MANY TIMES:

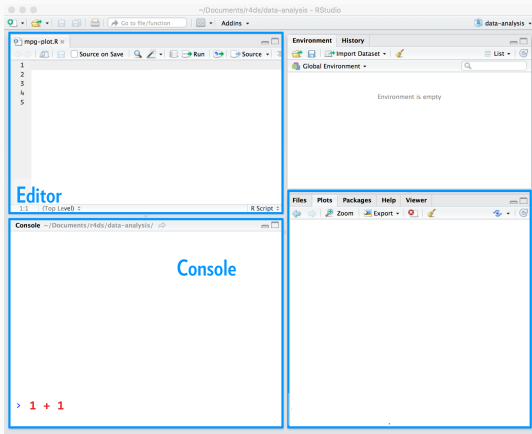
```
library("light")
```



# 测试

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# 测试



在 Console 内键入 `1 + 1` 并按回车后，将显示如下结果

```
1 + 1  
#> [1] 2
```

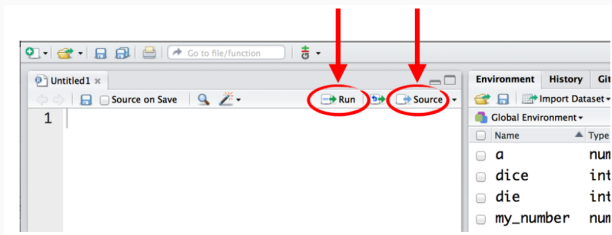


# 脚本

通过 Rstudio 菜单栏依此点击 File > New File > R Script 来创建一个新的脚本。脚本文件通常以 .R 作为文件的后缀名。



如何运行脚本呢？方法有很多



- 按住 Ctrl 键，然后按回车键 Enter，可以运行光标所在行的代码
- 点击 Run，运行光标所在行的代码
- 点击 Source，从头到尾运行当前脚本全部代码
- 鼠标选中多行代码，然后点击 Run 或者 Ctrl + Enter

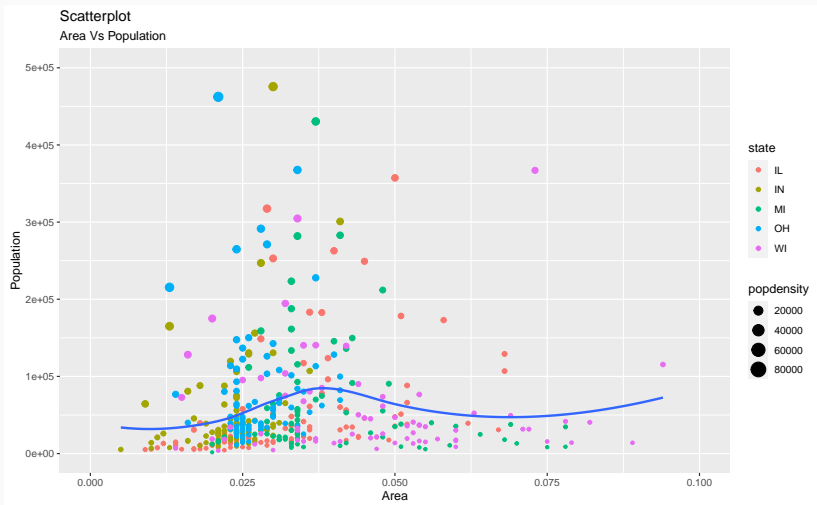
# 测试

复制以下代码到脚本编辑区

```
library(ggplot2)

ggplot(midwest, aes(x = area, y = poptotal)) +
  geom_point(aes(color = state, size = popdensity)) +
  geom_smooth(method = "loess", se = F) +
  xlim(c(0, 0.1)) +
  ylim(c(0, 500000)) +
  labs(
    title = "Scatterplot",
    subtitle = "Area Vs Population",
    x = "Area",
    y = "Population"
  )
```

# 测试



## 可能的问题

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## 可能的问题

- 我的电脑是苹果系统，怎么安装呢？
- 我的 Rstudio 需要哪些设置？
- 为什么 Rstudio 打开是空白呢？
- 安装宏包太慢，怎么解决？
- 安装宏包，遇到报错信息“unable to access index for repository...”？