



國立臺灣大學

National Taiwan University

使用R語言進行資料分析 Using R for Data Analysis

國立臺灣大學共同教育中心

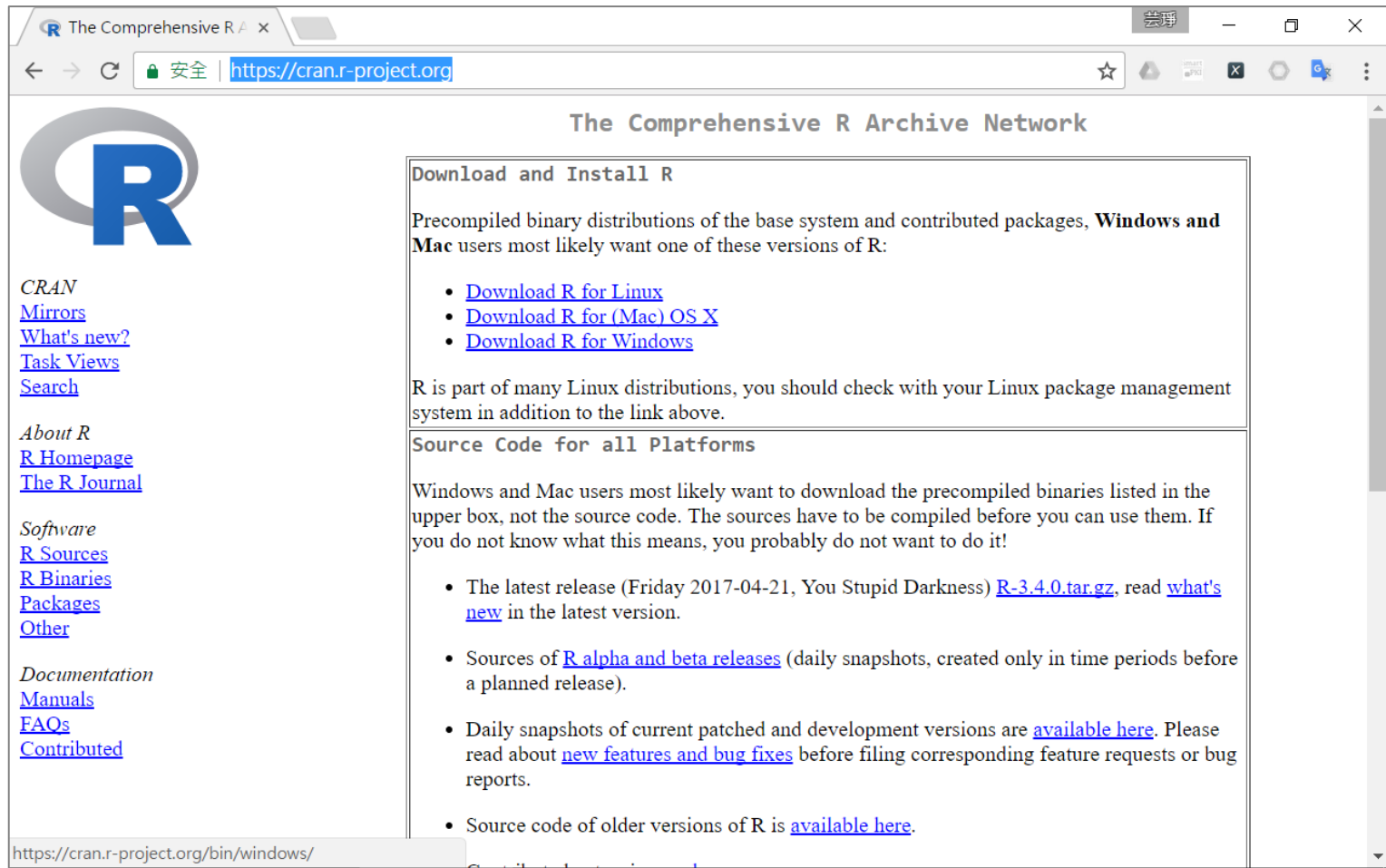
助理教授 蔡芸琇

Chapter 01

» R 語言編輯環境安裝與介紹

開啟 R 官方網站的網頁

<https://cran.r-project.org/>

A screenshot of a web browser displaying the CRAN (Comprehensive R Archive Network) website. The browser's address bar shows the URL 'https://cran.r-project.org/'. The website features the CRAN logo on the left, a navigation menu with links like 'CRAN', 'Mirrors', 'What's new?', 'Task Views', 'Search', 'About R', 'R Homepage', 'The R Journal', 'Software', 'R Sources', 'R Binaries', 'Packages', 'Other', 'Documentation', 'Manuals', 'FAQs', and 'Contributed'. The main content area is titled 'The Comprehensive R Archive Network' and contains two sections: 'Download and Install R' and 'Source Code for all Platforms'. The 'Download and Install R' section provides precompiled binary distributions for Windows and Mac users, with links to download R for Linux, Mac OS X, and Windows. The 'Source Code for all Platforms' section explains that Windows and Mac users should download precompiled binaries instead of source code, which must be compiled. It lists the latest release (R-3.4.0.tar.gz), sources for alpha and beta releases, daily snapshots of current patched and development versions, and source code for older versions of R.

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](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

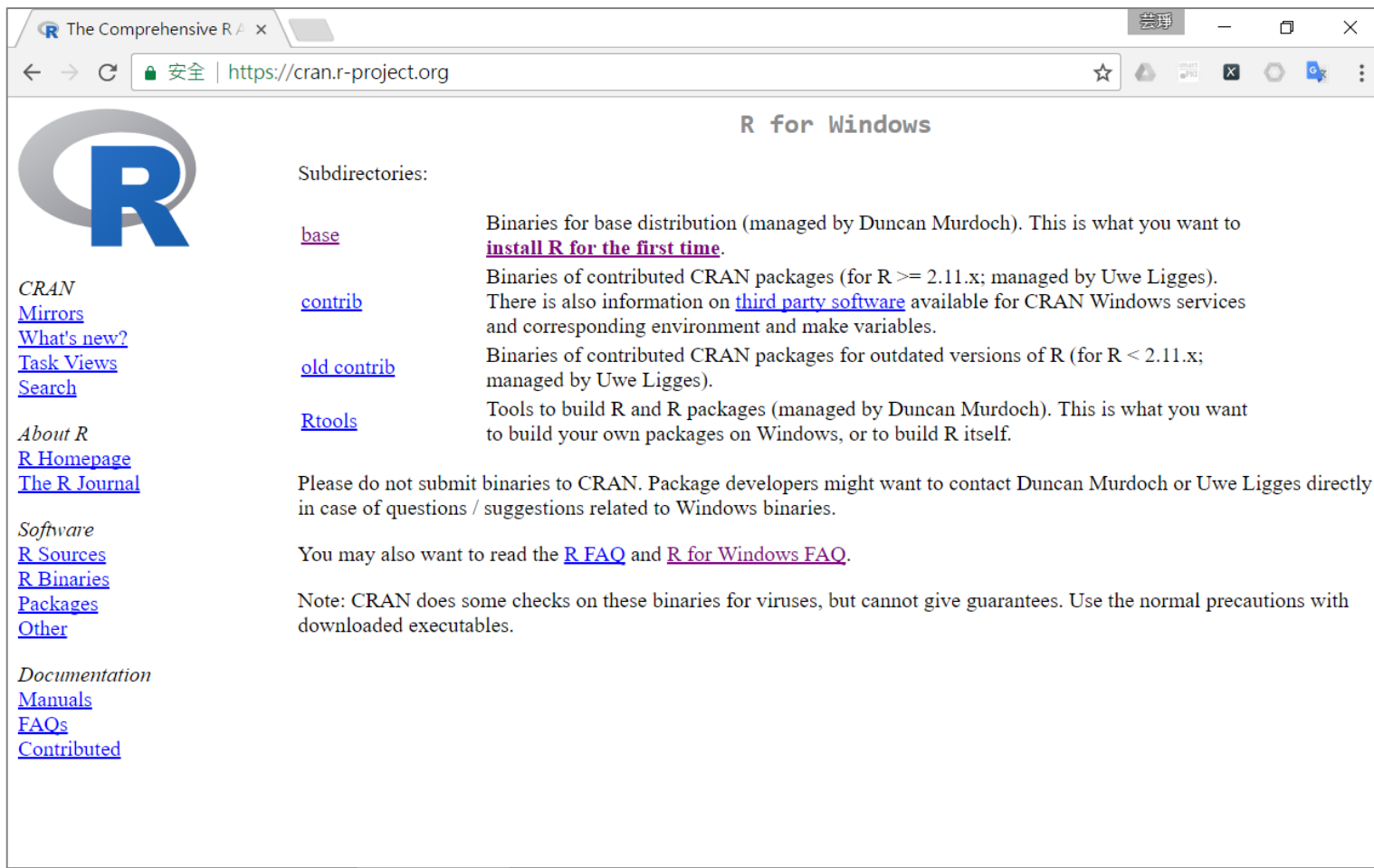
R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

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 (Friday 2017-04-21, You Stupid Darkness) [R-3.4.0.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).

依照不同的作業系統選擇下載處



The screenshot shows a web browser window with the address bar displaying "https://cran.r-project.org". The page title is "R for Windows". On the left side, there is a large blue "R" logo. Below the logo, there are several links: "CRAN", "Mirrors", "What's new?", "Task Views", "Search", "About R", "R Homepage", "The R Journal", "Software", "R Sources", "R Binaries", "Packages", "Other", "Documentation", "Manuals", "FAQs", and "Contributed". The main content area is titled "Subdirectories:" and lists four categories: "base", "contrib", "old contrib", and "Rtools". Each category has a brief description of the binaries and packages available. The "base" category mentions "install R for the first time". The "contrib" category mentions "third party software". The "old contrib" category mentions "outdated versions of R". The "Rtools" category mentions "Tools to build R and R packages". At the bottom, there is a note about submitting binaries to CRAN and a warning about viruses.

The Comprehensive R A x

安全 | https://cran.r-project.org

R for Windows

Subdirectories:

- [base](#): Binaries for base distribution (managed by Duncan Murdoch). This is what you want to **install R for the first time**.
- [contrib](#): Binaries of contributed CRAN packages (for R \geq 2.11.x; managed by Uwe Ligges). There is also information on [third party software](#) available for CRAN Windows services and corresponding environment and make variables.
- [old contrib](#): Binaries of contributed CRAN packages for outdated versions of R (for R $<$ 2.11.x; managed by Uwe Ligges).
- [Rtools](#): Tools to build R and R packages (managed by Duncan Murdoch). 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 Duncan Murdoch or 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.

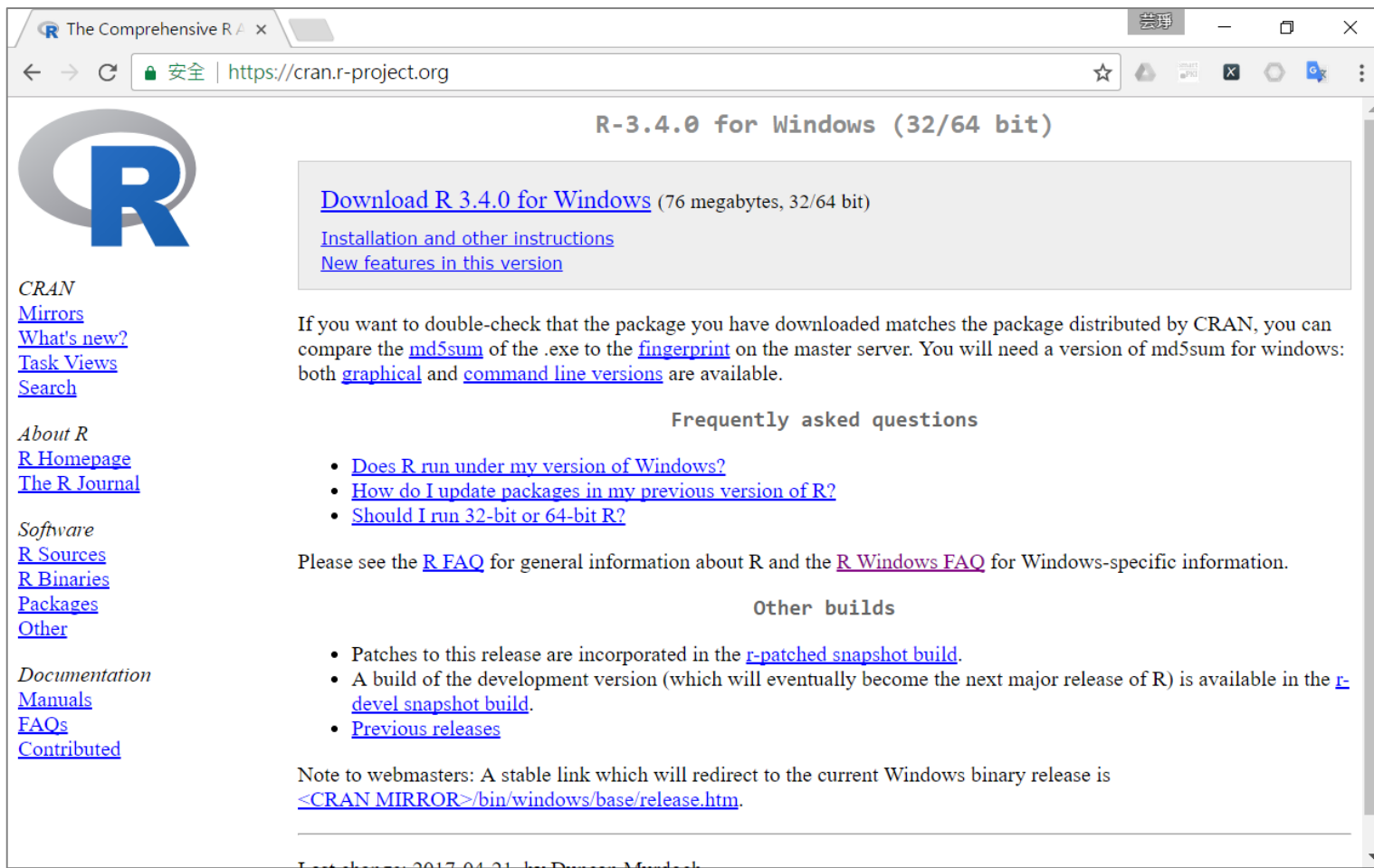
CRAN
[Mirrors](#)
[What's new?](#)
[Task Views](#)
[Search](#)

About R
[R Homepage](#)
[The R Journal](#)

Software
[R Sources](#)
[R Binaries](#)
[Packages](#)
[Other](#)

Documentation
[Manuals](#)
[FAQs](#)
[Contributed](#)

以 Windows 作業系統為例



The screenshot shows a web browser window with the address bar displaying <https://cran.r-project.org>. The page title is "R-3.4.0 for Windows (32/64 bit)". The main content area features a large R logo on the left and a central box with the following links:

- [Download R 3.4.0 for Windows](#) (76 megabytes, 32/64 bit)
- [Installation and other instructions](#)
- [New features in this version](#)

Below the central box, the text reads: "If you want to double-check that the package you have downloaded matches the package distributed by CRAN, you can compare the [md5sum](#) of the .exe to the [fingerprint](#) on the master server. You will need a version of md5sum for windows: both [graphical](#) and [command line versions](#) are available."

The "Frequently asked questions" section includes the following links:

- [Does R run under my version of Windows?](#)
- [How do I update packages in my previous version of R?](#)
- [Should I run 32-bit or 64-bit R?](#)

Please see the [R FAQ](#) for general information about R and the [R Windows FAQ](#) for Windows-specific information.

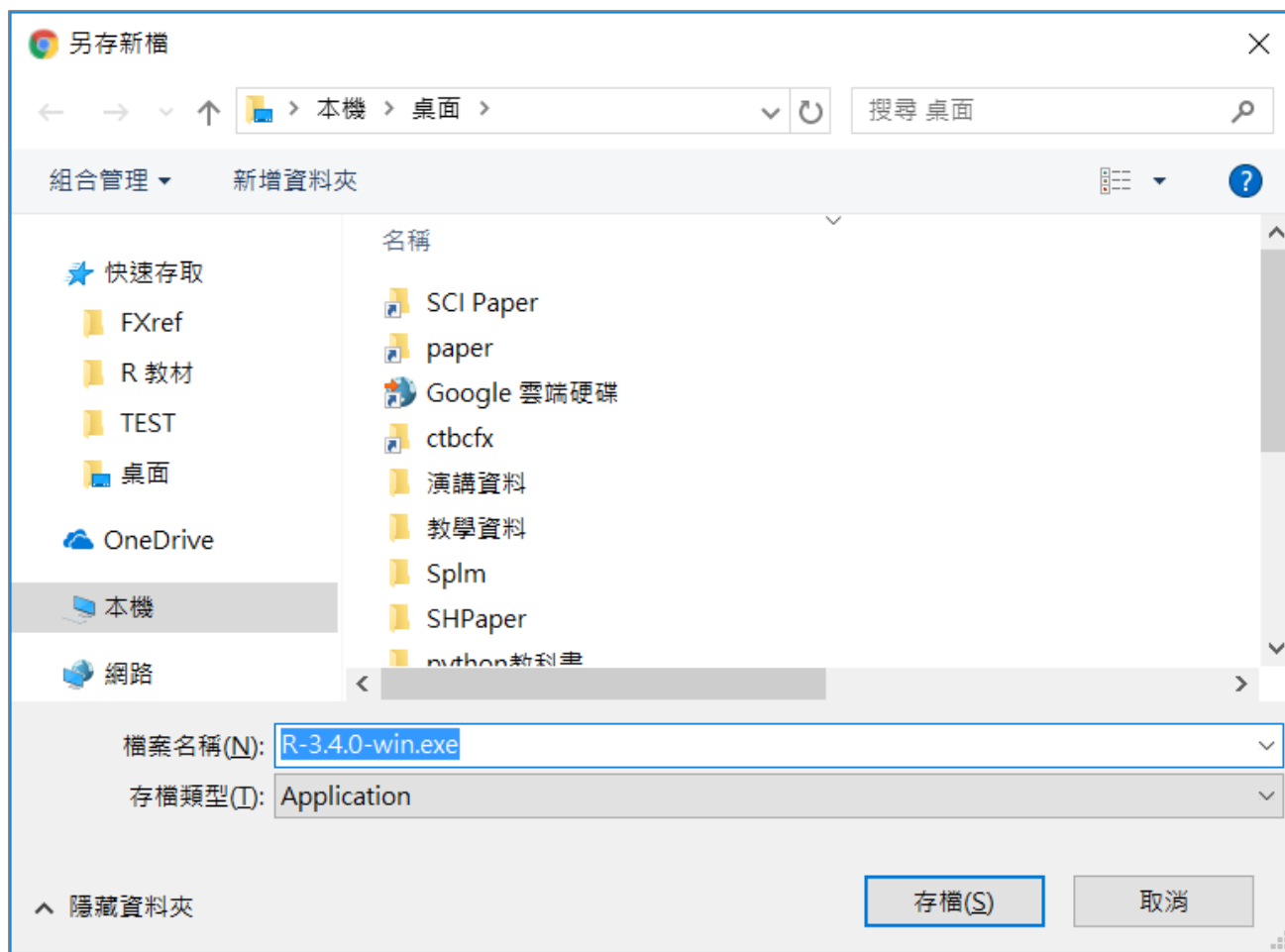
The "Other builds" section includes the following links:

- Patches to this release are incorporated in the [r-patched snapshot build](#).
- A build of the development version (which will eventually become the next major release of R) is available in the [r-devel snapshot build](#).
- [Previous releases](#)

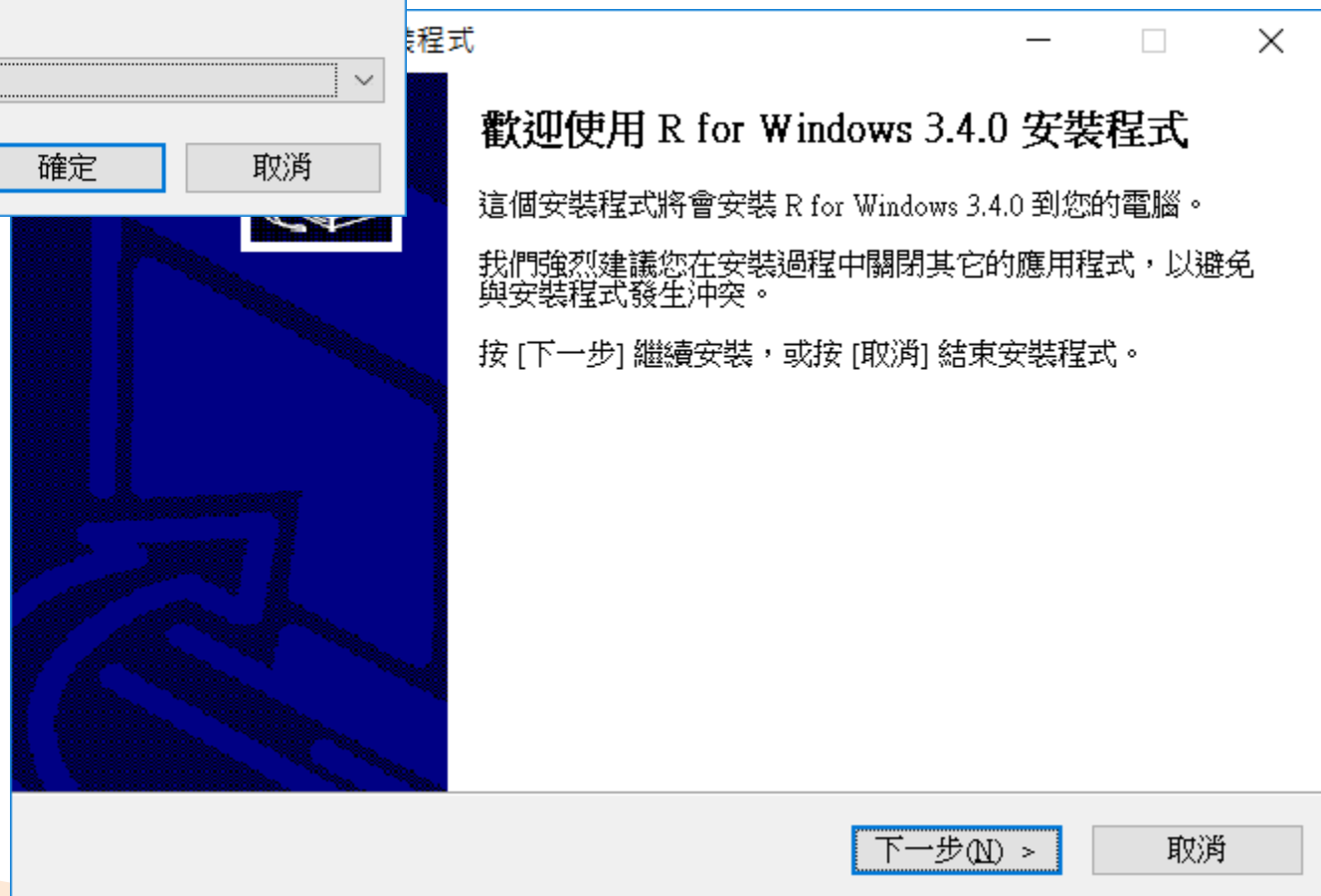
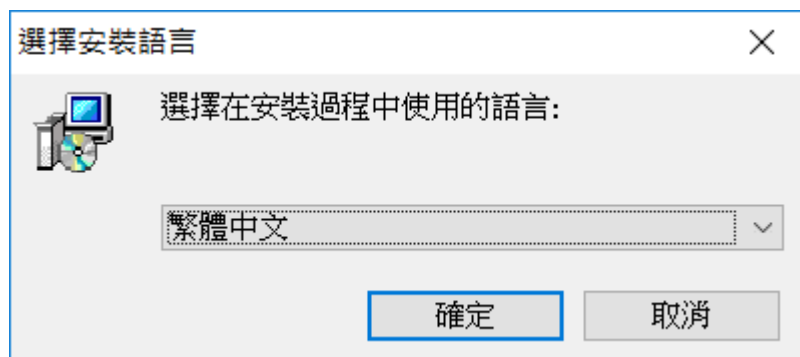
Note to webmasters: A stable link which will redirect to the current Windows binary release is [<CRAN MIRROR>/bin/windows/base/release.htm](https://cran.r-project.org/bin/windows/base/release.htm).

Tested on: 2017-04-21 by Duncan Murdoch

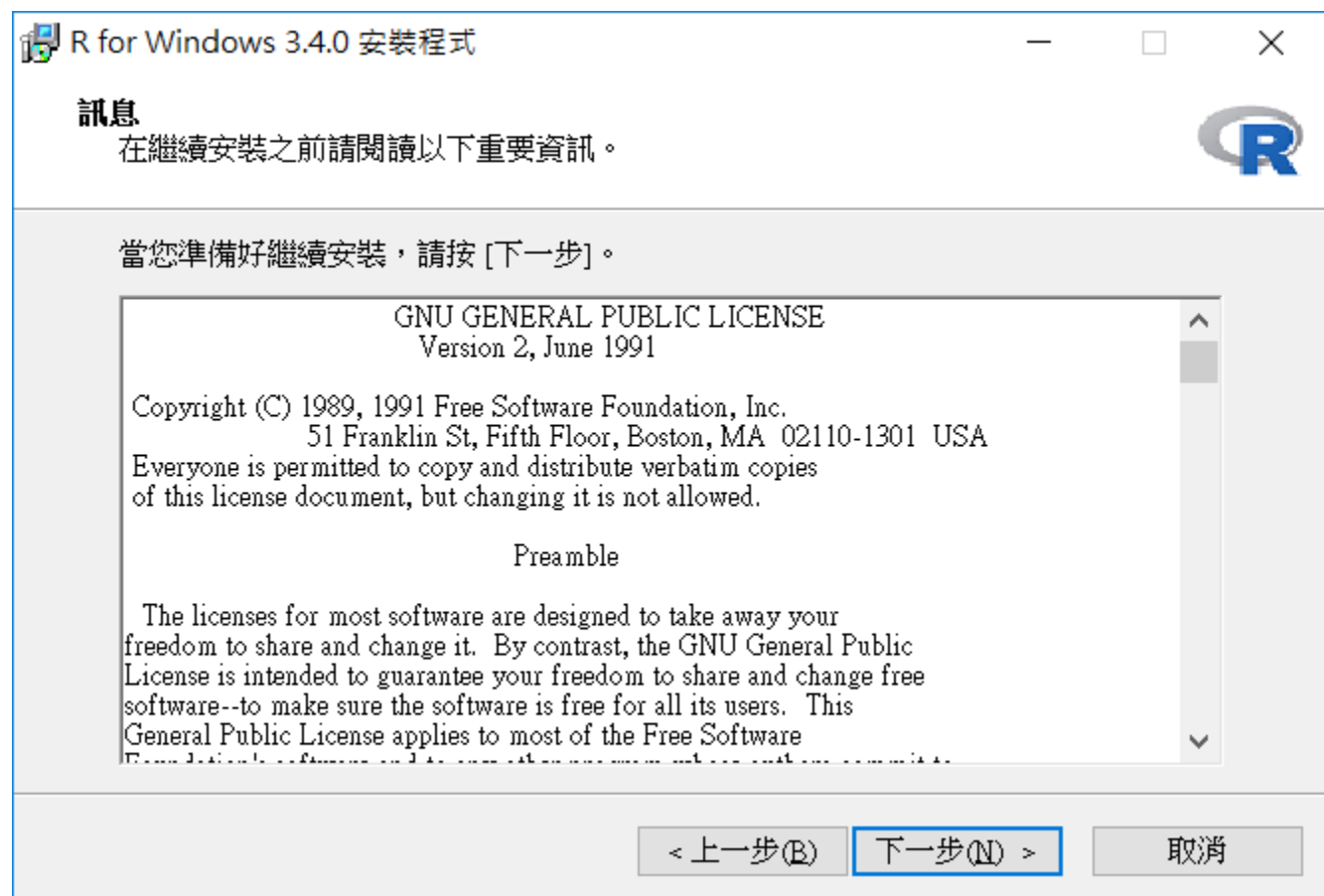
將 R 安裝檔存至本機



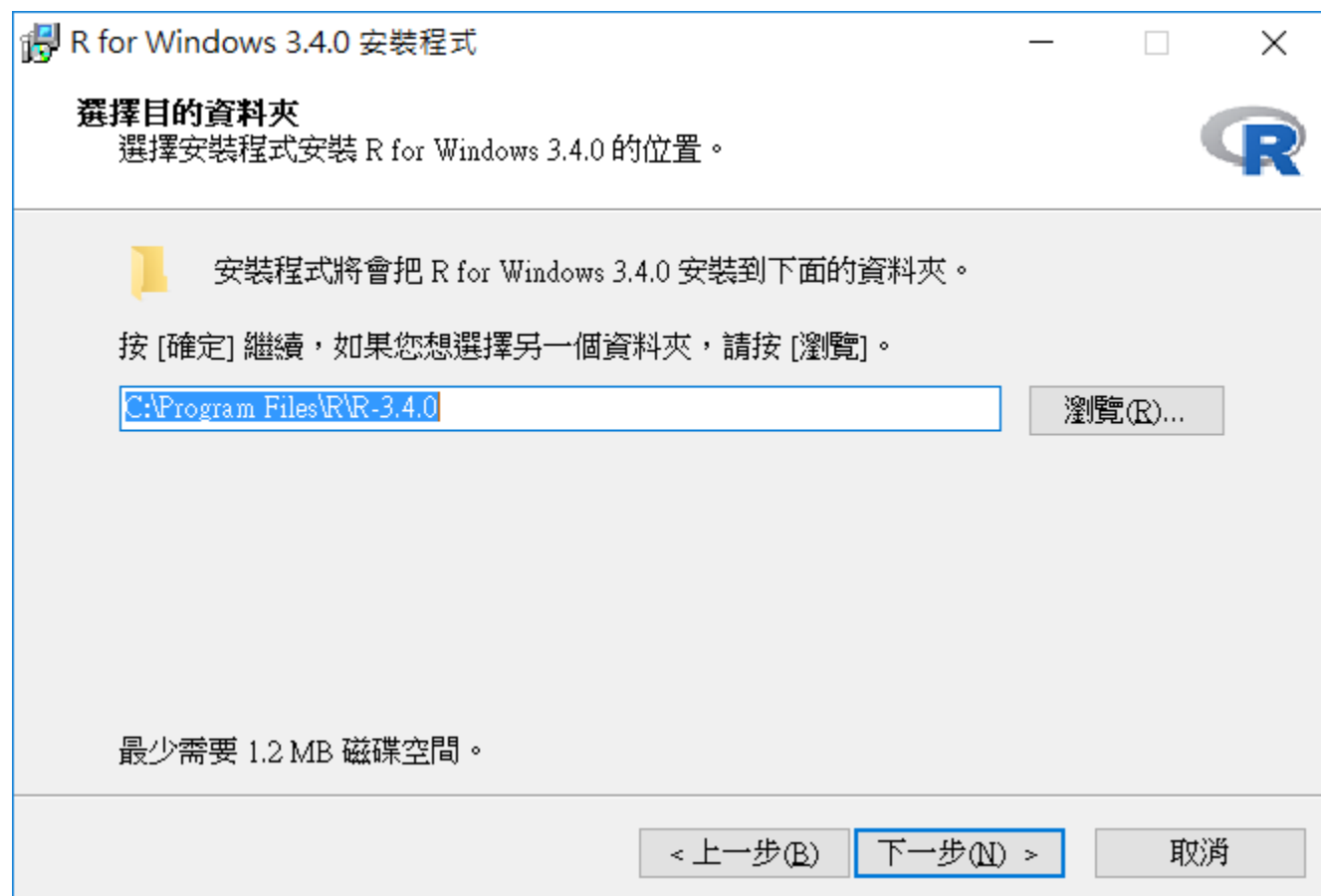
選擇使用語言並直接執行 R 安裝檔



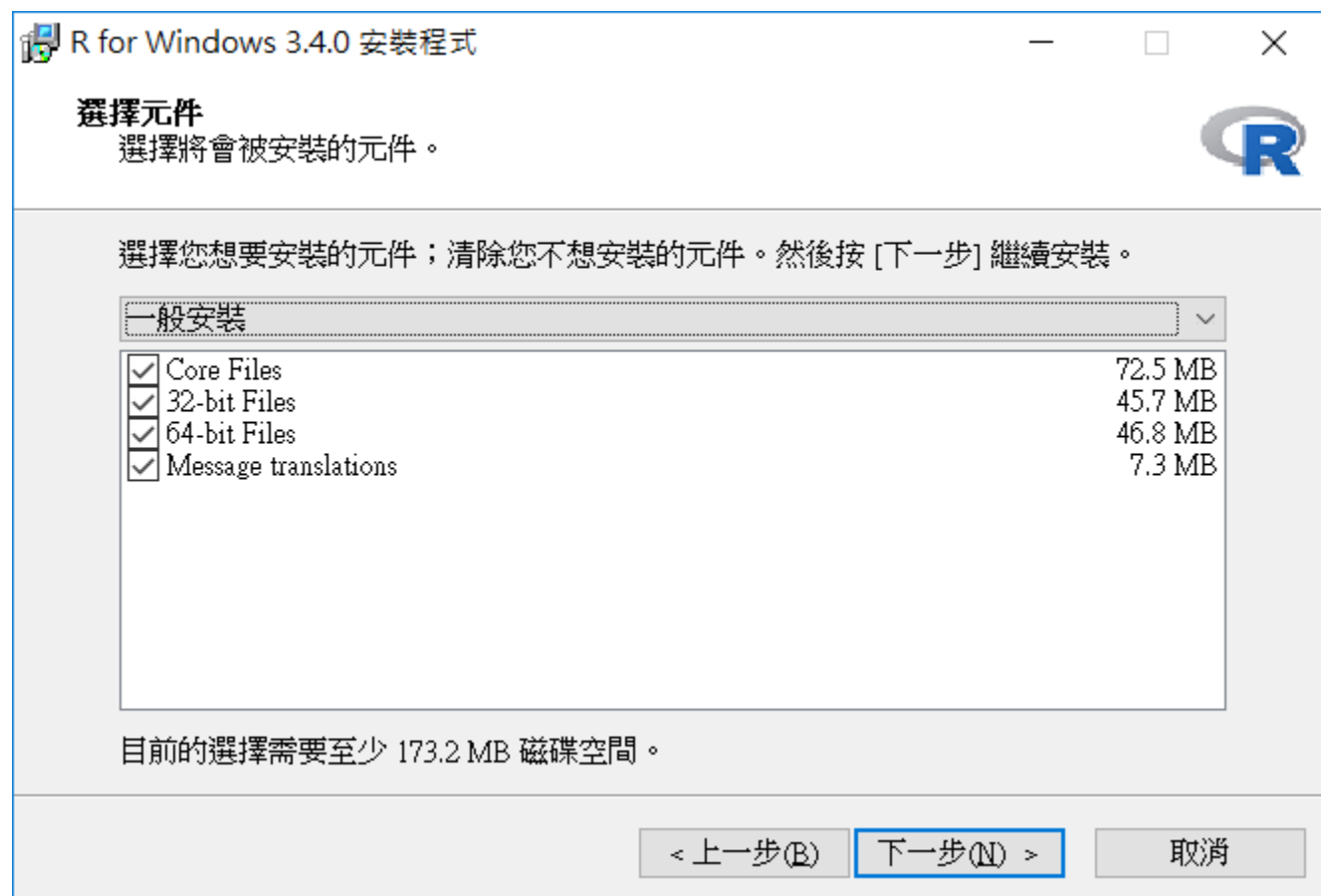
依照安裝檔指示進行



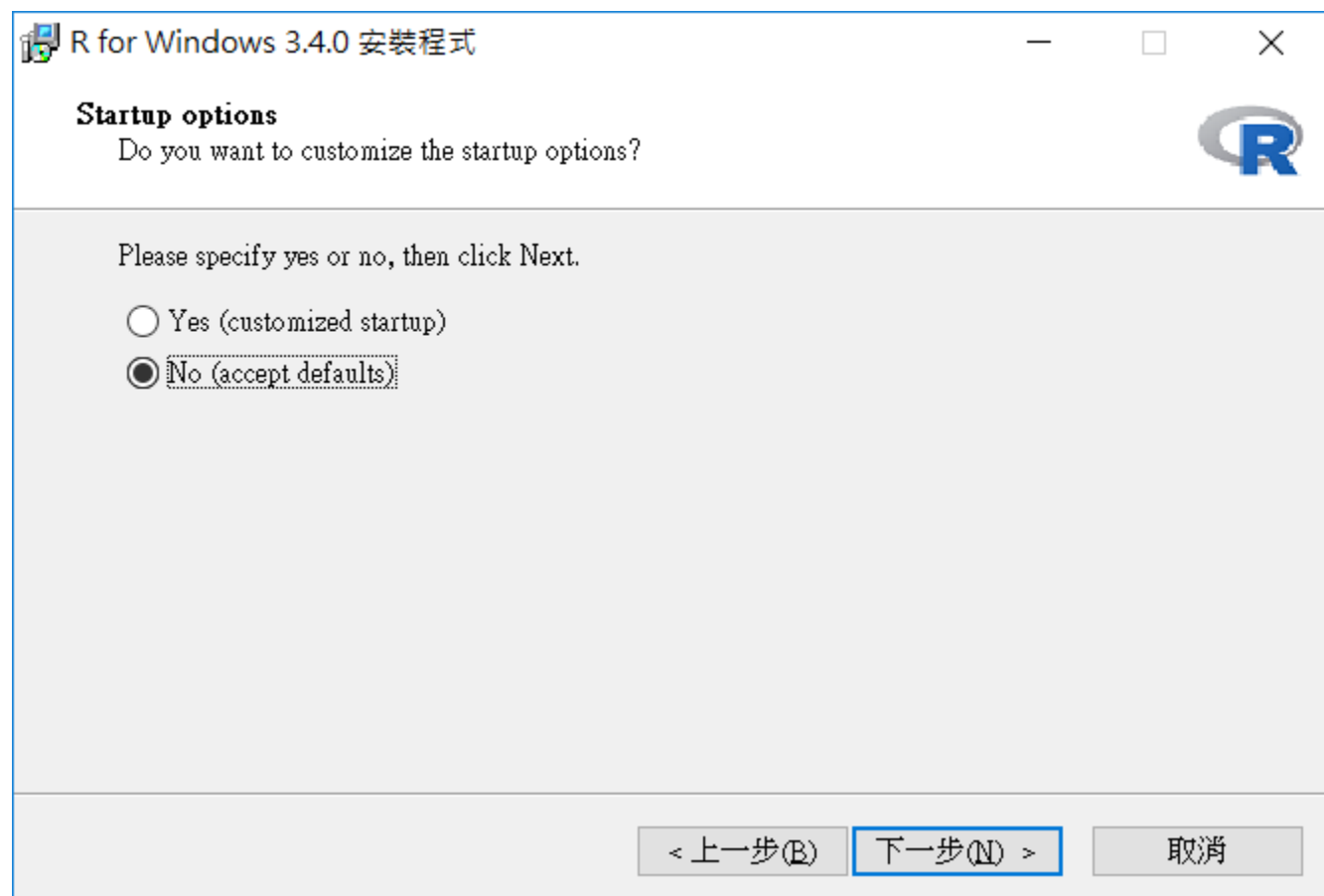
依照安裝檔指示進行



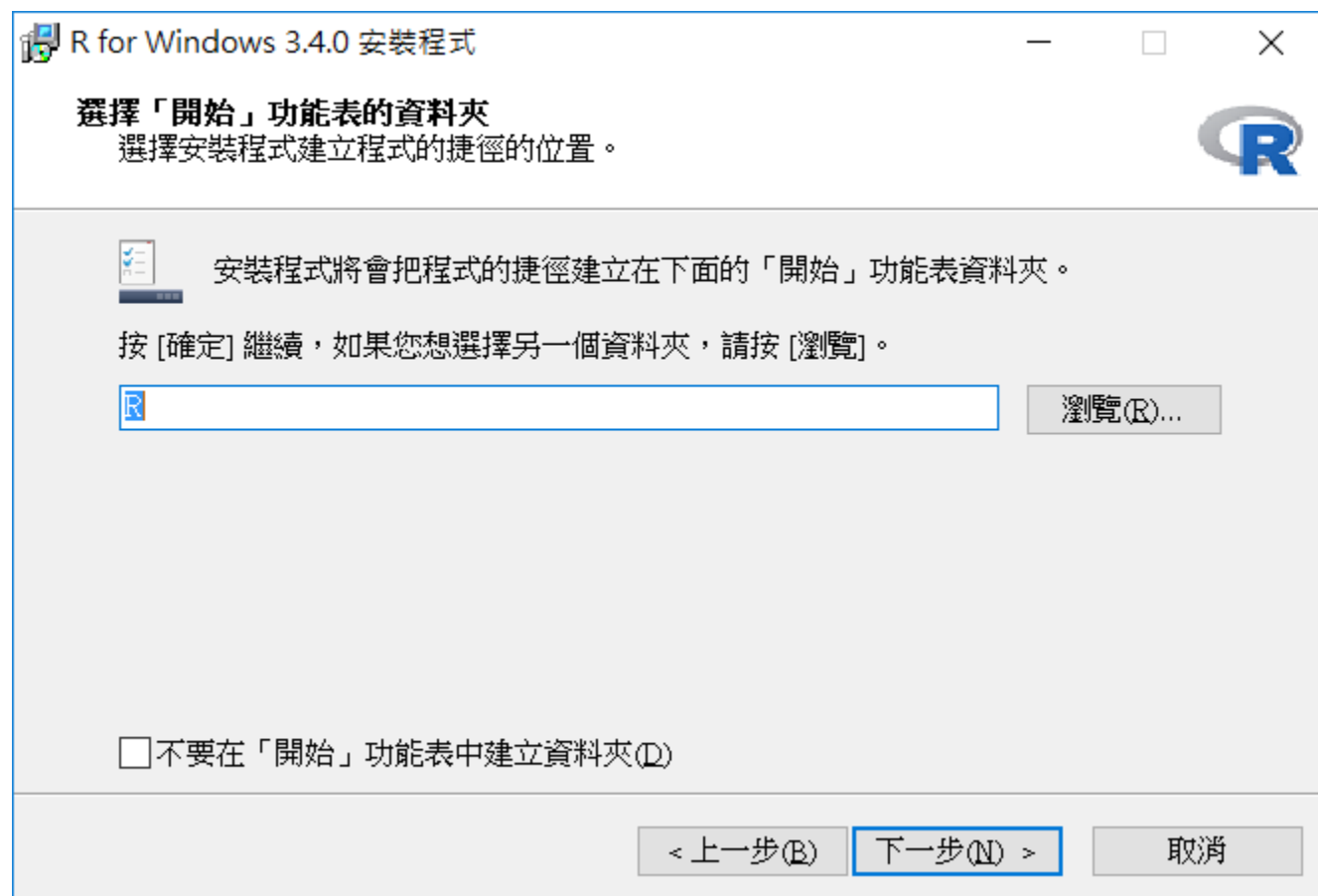
依照安裝檔指示進行



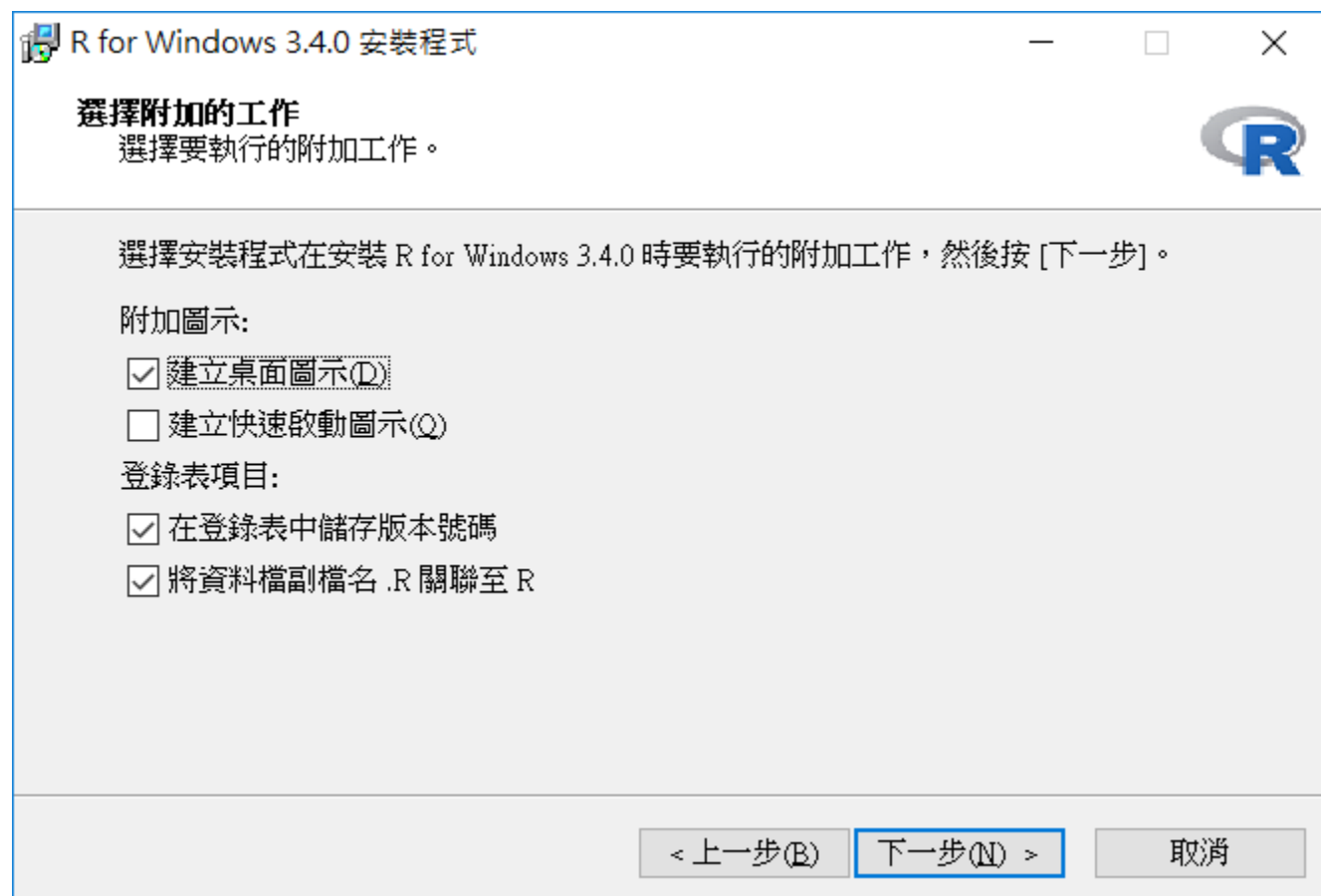
依照安裝檔指示進行



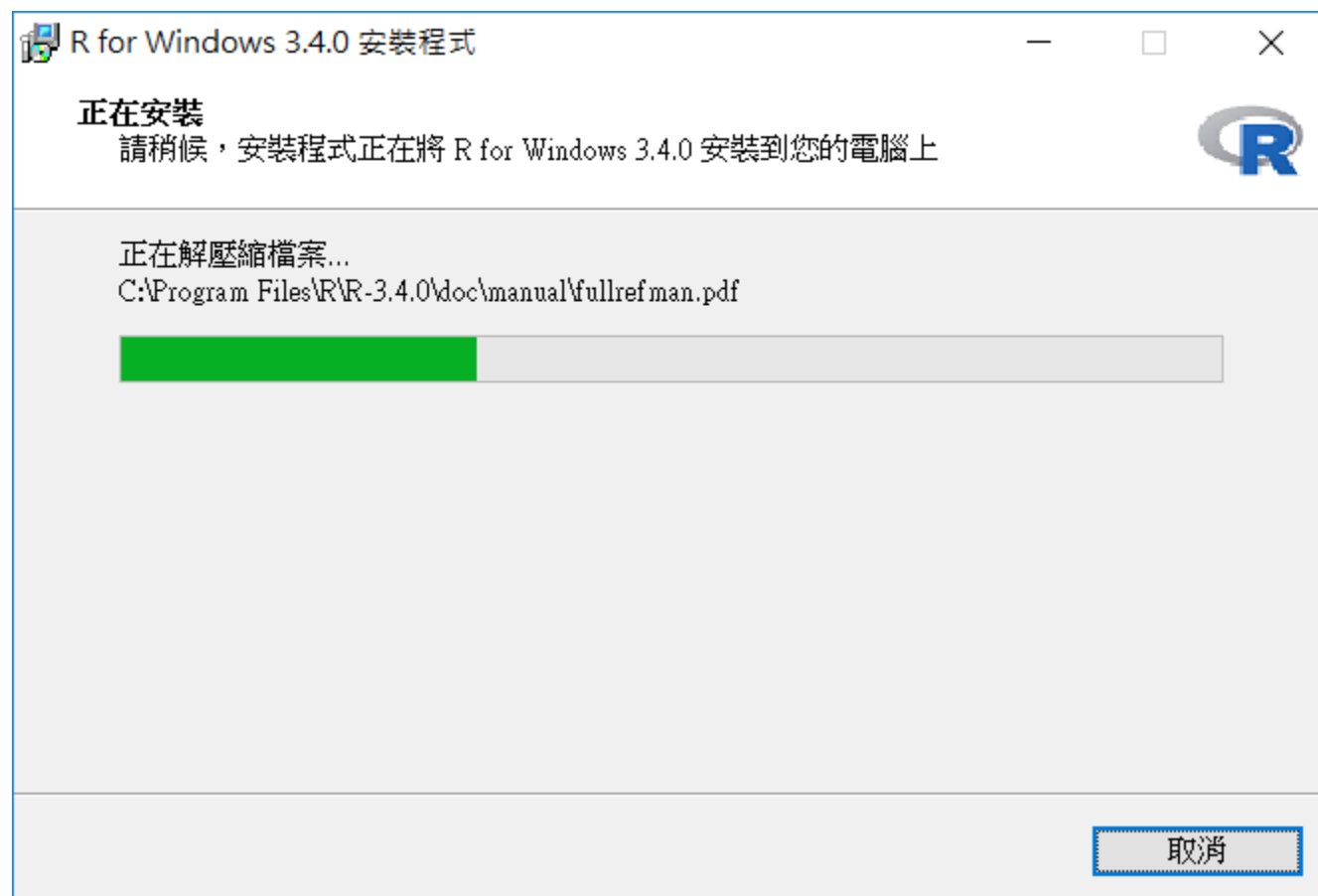
依照安裝檔指示進行



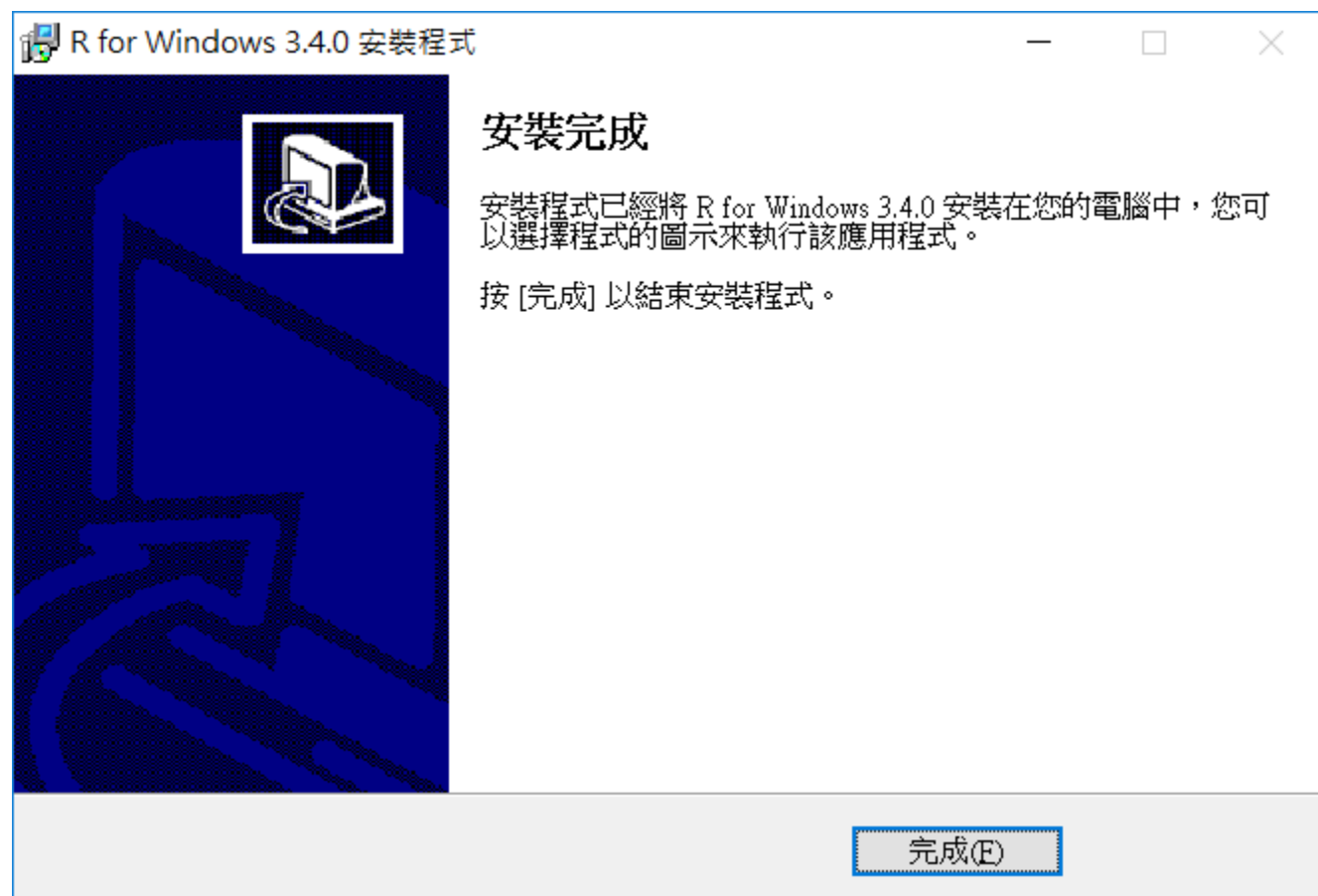
依照安裝檔指示進行



正在安裝中

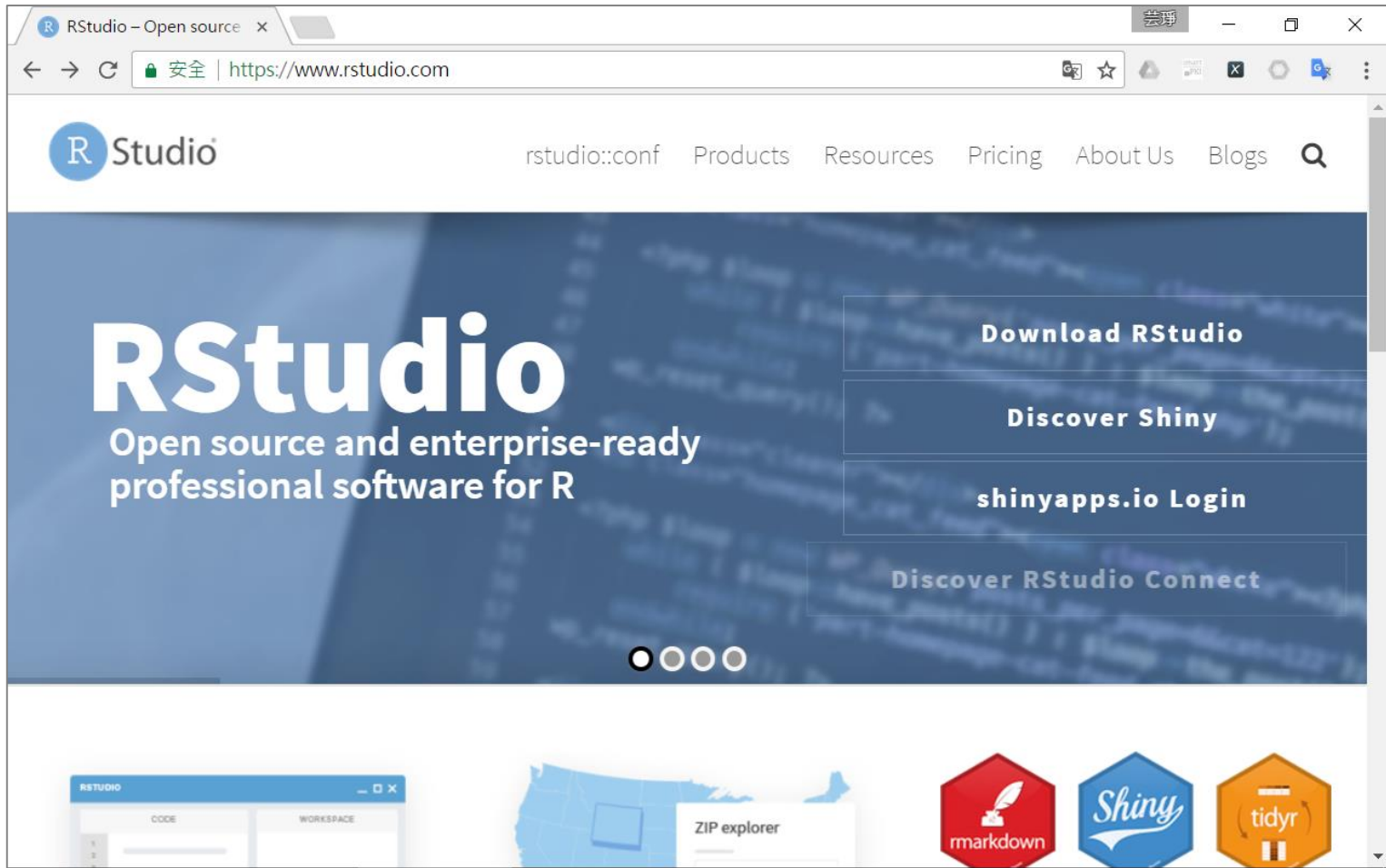


安裝完成

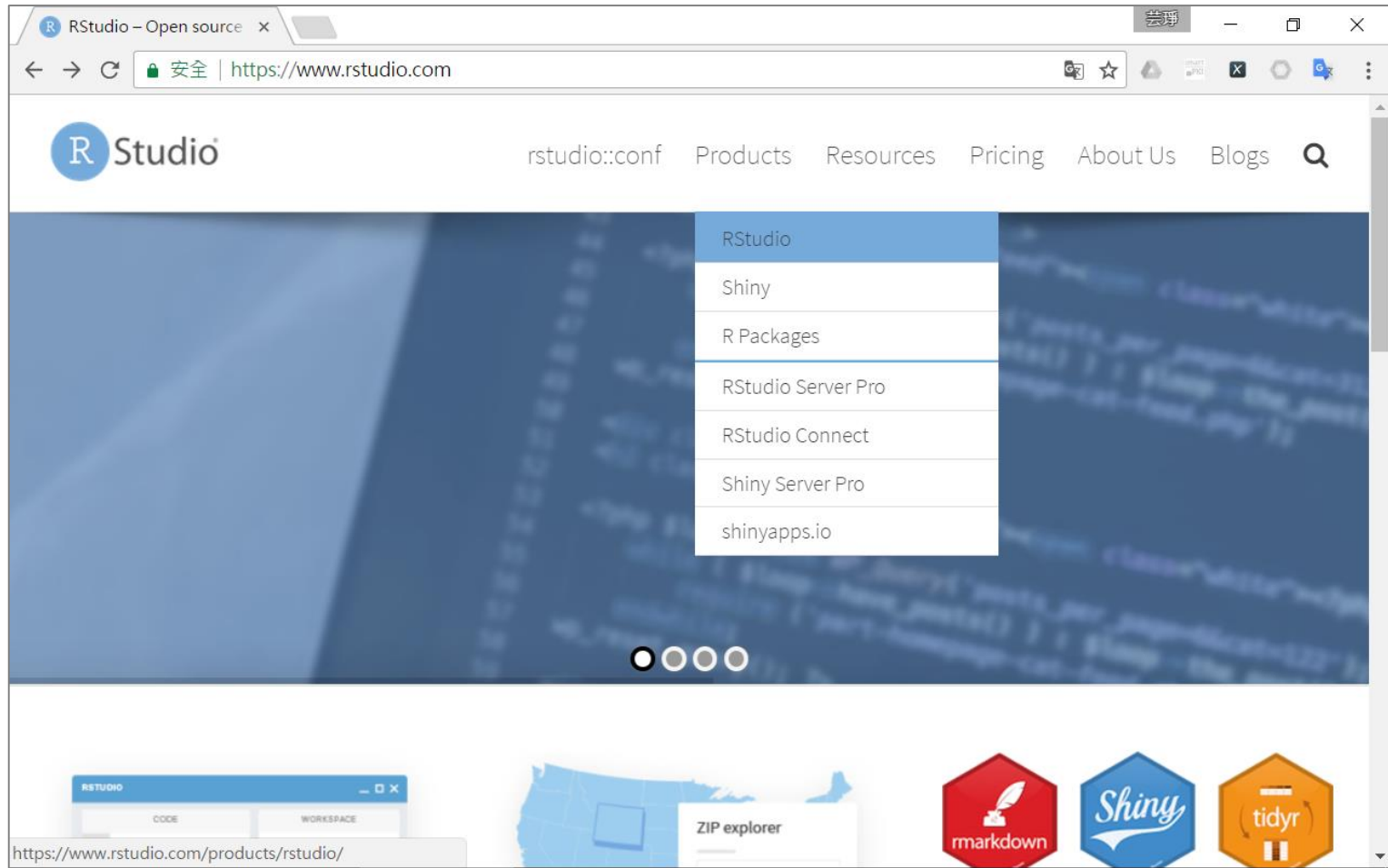


開啟 RStudio 官方網站的網頁

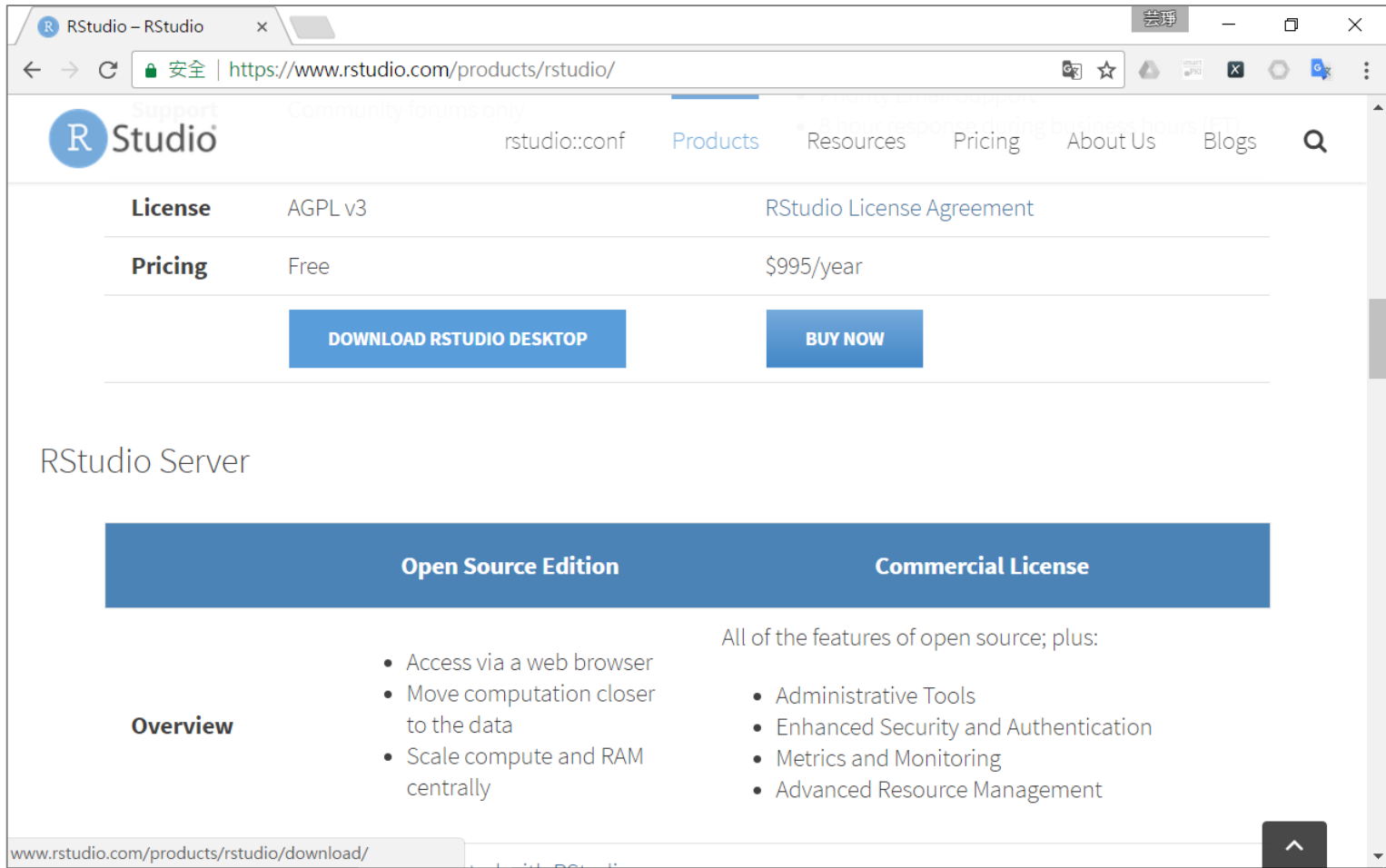
<https://www.rstudio.com/>



選擇 Products -> RStudio



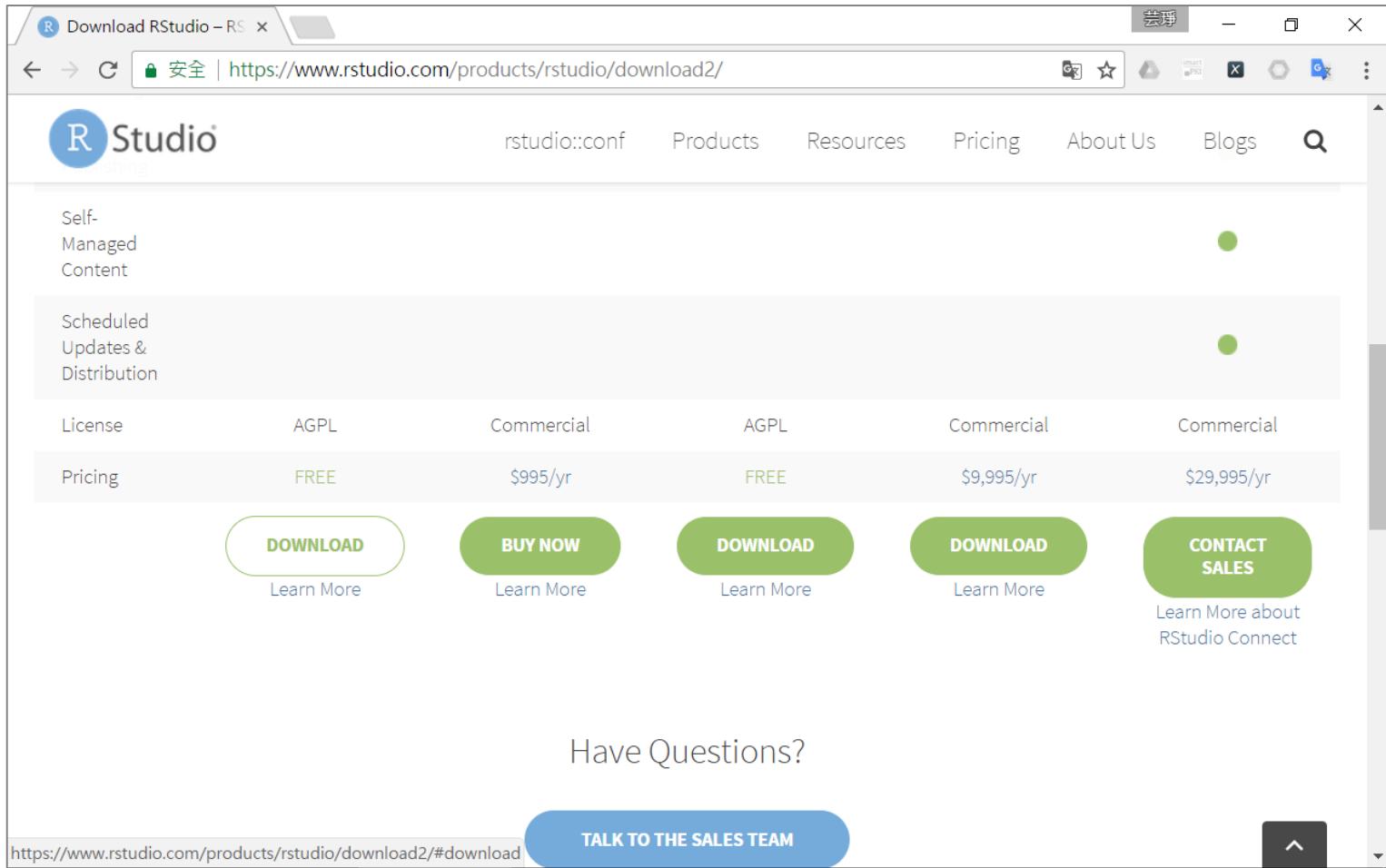
下載 Rstudio Desktop



The screenshot shows the RStudio website's product page. The browser's address bar displays the URL <https://www.rstudio.com/products/rstudio/>. The page features the RStudio logo and a navigation menu with links to Support, Community forums only, Products, Resources, Pricing, About Us, and Blogs. A table provides details on the license (AGPL v3) and pricing (Free or \$995/year). Below this, there are buttons for 'DOWNLOAD RSTUDIO DESKTOP' and 'BUY NOW'. The 'RStudio Server' section is also visible, with an 'Overview' table comparing the 'Open Source Edition' and 'Commercial License'.

	Open Source Edition	Commercial License
Overview	<ul style="list-style-type: none">• Access via a web browser• Move computation closer to the data• Scale compute and RAM centrally	<p>All of the features of open source; plus:</p> <ul style="list-style-type: none">• Administrative Tools• Enhanced Security and Authentication• Metrics and Monitoring• Advanced Resource Management

下載 RStudio Desktop Open Source License



The screenshot shows the RStudio website's download page. The browser address bar displays the URL <https://www.rstudio.com/products/rstudio/download2/>. The page features the RStudio logo and a navigation menu with links to 'rstudio::conf', 'Products', 'Resources', 'Pricing', 'About Us', and 'Blogs'. Below the navigation, there are two sections: 'Self-Managed Content' and 'Scheduled Updates & Distribution', each with a green dot indicator. The main content area is a table comparing different RStudio Desktop licenses. The table has two rows: 'License' and 'Pricing'. The licenses are AGPL, Commercial, AGPL, Commercial, and Commercial. The pricing for AGPL is 'FREE', and for Commercial, it is '\$995/yr', '\$9,995/yr', and '\$29,995/yr'. Below the table, there are five buttons: 'DOWNLOAD' (with a 'Learn More' link), 'BUY NOW' (with a 'Learn More' link), 'DOWNLOAD' (with a 'Learn More' link), 'DOWNLOAD' (with a 'Learn More' link), and 'CONTACT SALES' (with a 'Learn More about RStudio Connect' link). At the bottom, there is a 'Have Questions?' section with a 'TALK TO THE SALES TEAM' button. The footer of the page shows the URL <https://www.rstudio.com/products/rstudio/download2/#download>.

License	AGPL	Commercial	AGPL	Commercial	Commercial
Pricing	FREE	\$995/yr	FREE	\$9,995/yr	\$29,995/yr

DOWNLOAD Learn More

BUY NOW Learn More

DOWNLOAD Learn More

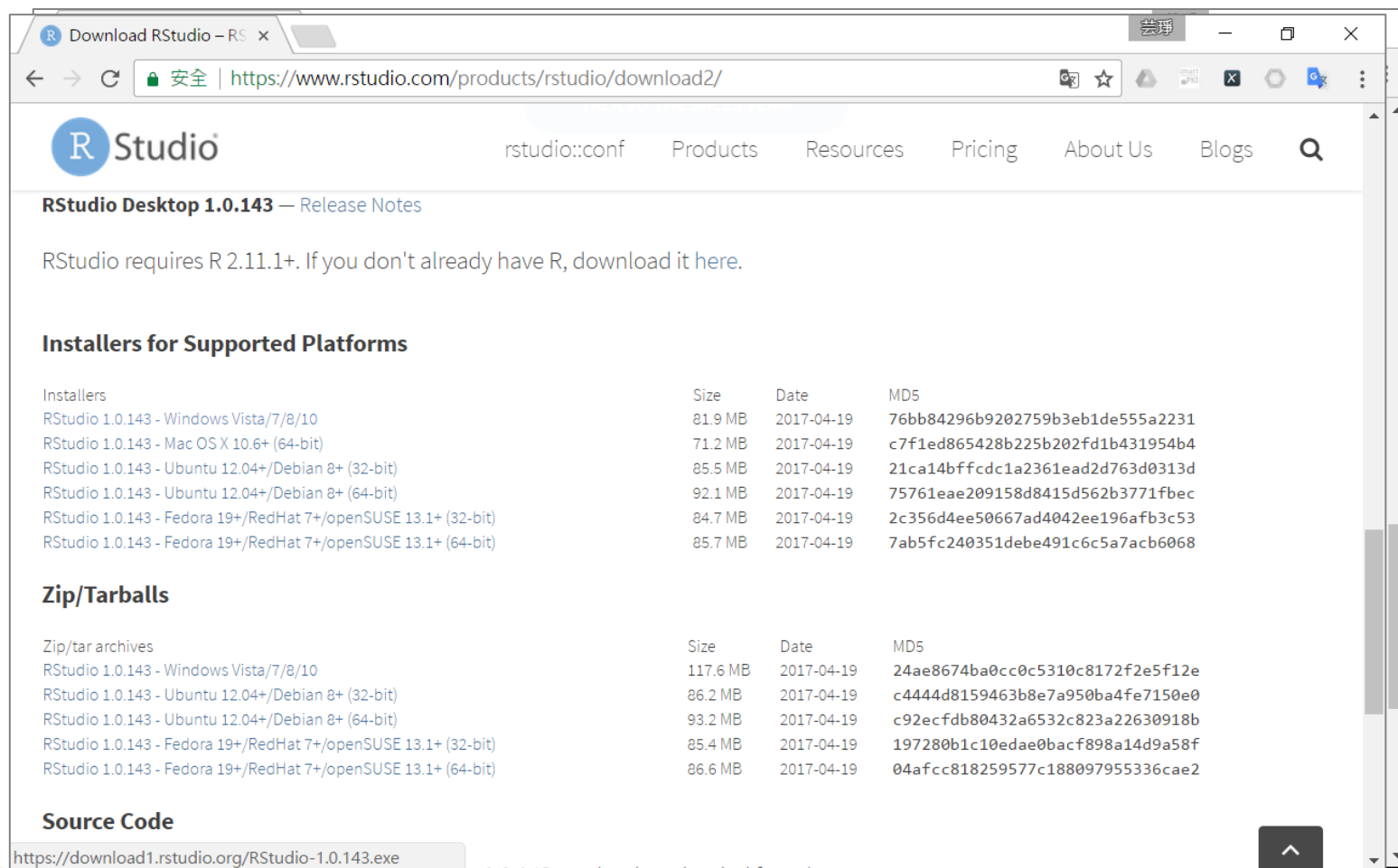
DOWNLOAD Learn More

CONTACT SALES Learn More about RStudio Connect

Have Questions?

TALK TO THE SALES TEAM

依照不同的作業系統選擇下載處



The screenshot shows the RStudio download page for version 1.0.143. The page includes a navigation bar with links to 'Products', 'Resources', 'Pricing', 'About Us', and 'Blogs'. The main content area is titled 'RStudio Desktop 1.0.143 — Release Notes' and contains a paragraph stating 'RStudio requires R 2.11.1+. If you don't already have R, download it [here](#).' Below this, there are two sections: 'Installers for Supported Platforms' and 'Zip/Tarballs'. Each section contains a table with columns for 'Installers' or 'Zip/tar archives', 'Size', 'Date', and 'MD5'. The 'Installers' table lists download links for Windows Vista/7/8/10, Mac OS X 10.6+ (64-bit), Ubuntu 12.04+/Debian 8+ (32-bit), Ubuntu 12.04+/Debian 8+ (64-bit), Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit), and Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit). The 'Zip/Tarballs' table lists download links for Windows Vista/7/8/10, Ubuntu 12.04+/Debian 8+ (32-bit), Ubuntu 12.04+/Debian 8+ (64-bit), Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit), and Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit). At the bottom of the page, there is a 'Source Code' section with a link to 'https://download1.rstudio.org/RStudio-1.0.143.exe'.

Download RStudio - RS x

安全 | <https://www.rstudio.com/products/rstudio/download2/>

R Studio

rstudio::conf Products Resources Pricing About Us Blogs

RStudio Desktop 1.0.143 — Release Notes

RStudio requires R 2.11.1+. If you don't already have R, download it [here](#).

Installers for Supported Platforms

Installers	Size	Date	MD5
RStudio 1.0.143 - Windows Vista/7/8/10	81.9 MB	2017-04-19	76bb84296b9202759b3eb1de555a2231
RStudio 1.0.143 - Mac OS X 10.6+ (64-bit)	71.2 MB	2017-04-19	c7f1ed865428b225b202fd1b431954b4
RStudio 1.0.143 - Ubuntu 12.04+/Debian 8+ (32-bit)	85.5 MB	2017-04-19	21ca14bffc1a2361ead2d763d0313d
RStudio 1.0.143 - Ubuntu 12.04+/Debian 8+ (64-bit)	92.1 MB	2017-04-19	75761eae209158d8415d562b3771fbec
RStudio 1.0.143 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	84.7 MB	2017-04-19	2c356d4ee50667ad4042ee196afb3c53
RStudio 1.0.143 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	85.7 MB	2017-04-19	7ab5fc240351debe491c6c5a7ac6068

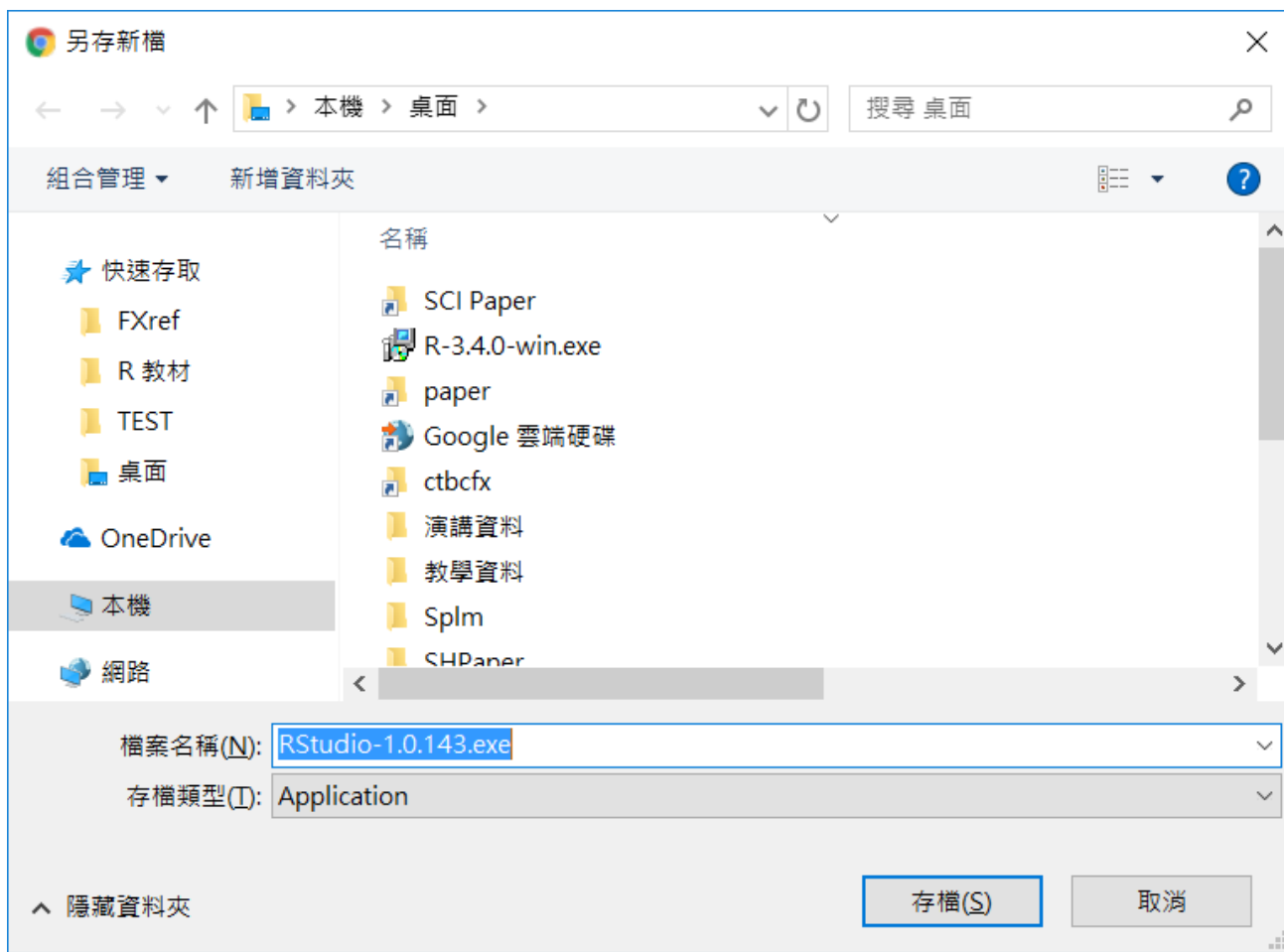
Zip/Tarballs

Zip/tar archives	Size	Date	MD5
RStudio 1.0.143 - Windows Vista/7/8/10	117.6 MB	2017-04-19	24ae8674ba0cc0c5310c8172f2e5f12e
RStudio 1.0.143 - Ubuntu 12.04+/Debian 8+ (32-bit)	86.2 MB	2017-04-19	c4444d8159463b8e7a950ba4fe7150e0
RStudio 1.0.143 - Ubuntu 12.04+/Debian 8+ (64-bit)	93.2 MB	2017-04-19	c92ecfdb80432a6532c823a22630918b
RStudio 1.0.143 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	85.4 MB	2017-04-19	197280b1c10edae0bacf898a14d9a58f
RStudio 1.0.143 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	86.6 MB	2017-04-19	04afcc818259577c188097955336cae2

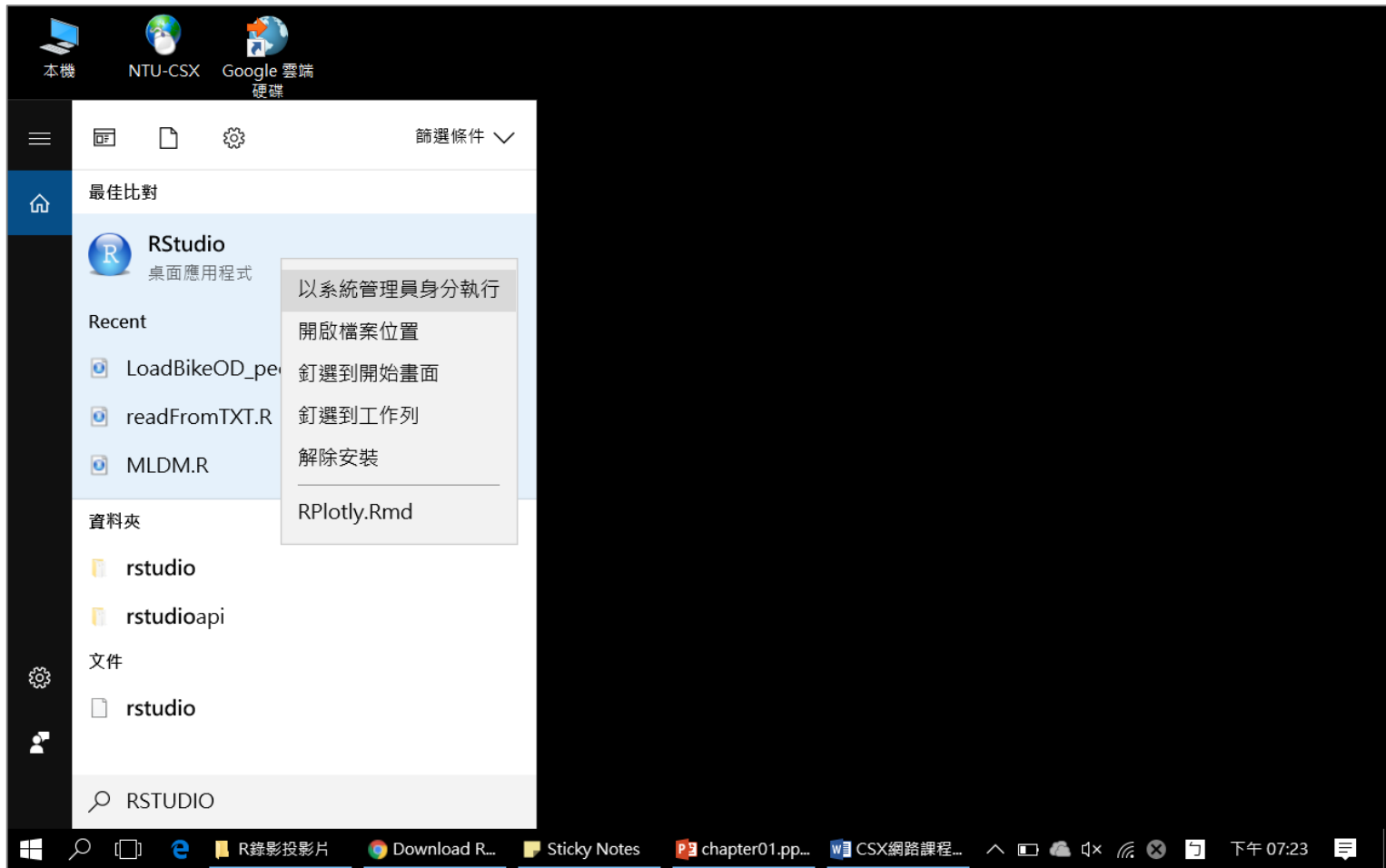
Source Code

<https://download1.rstudio.org/RStudio-1.0.143.exe>

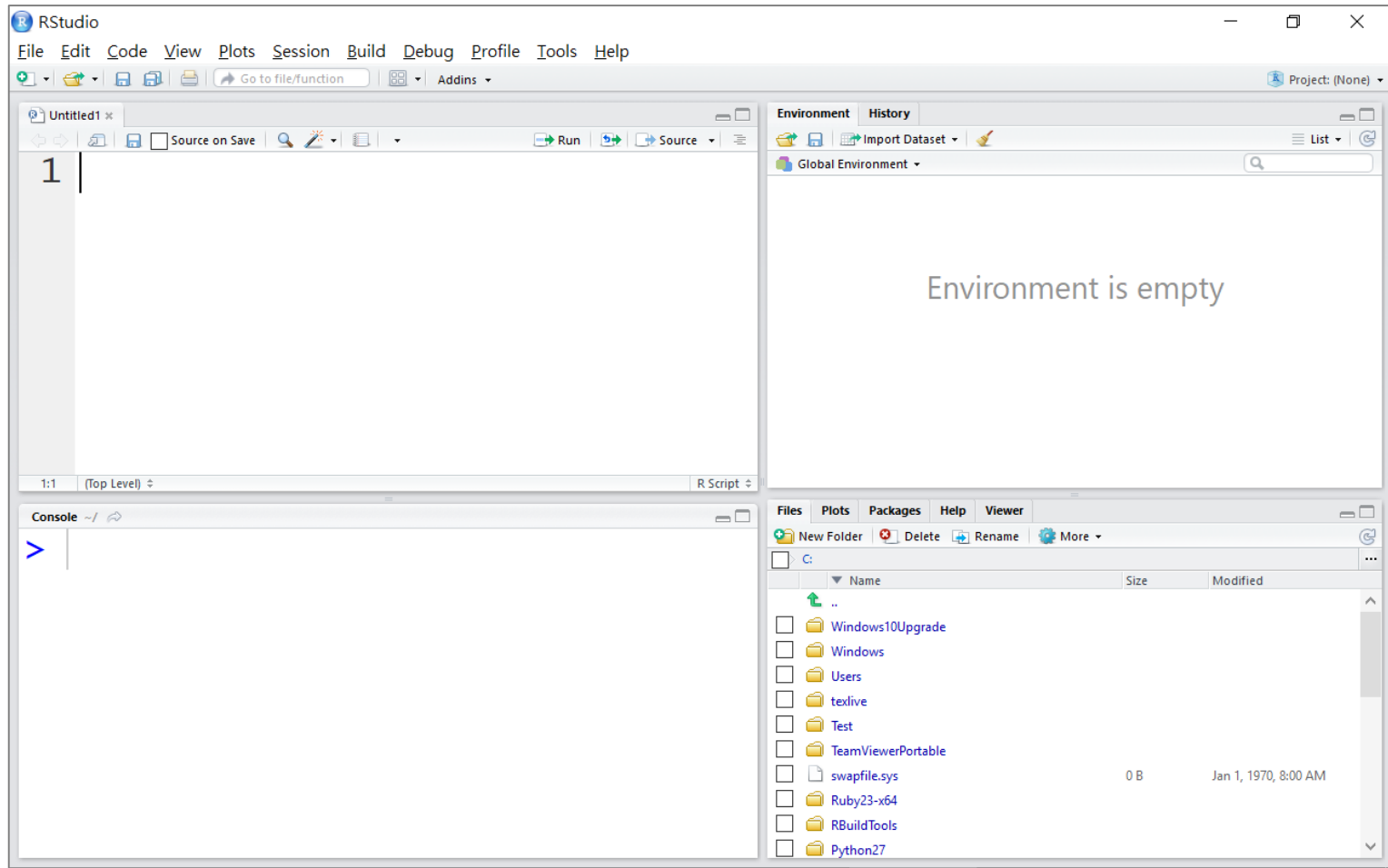
以 Windows 作業系統為例



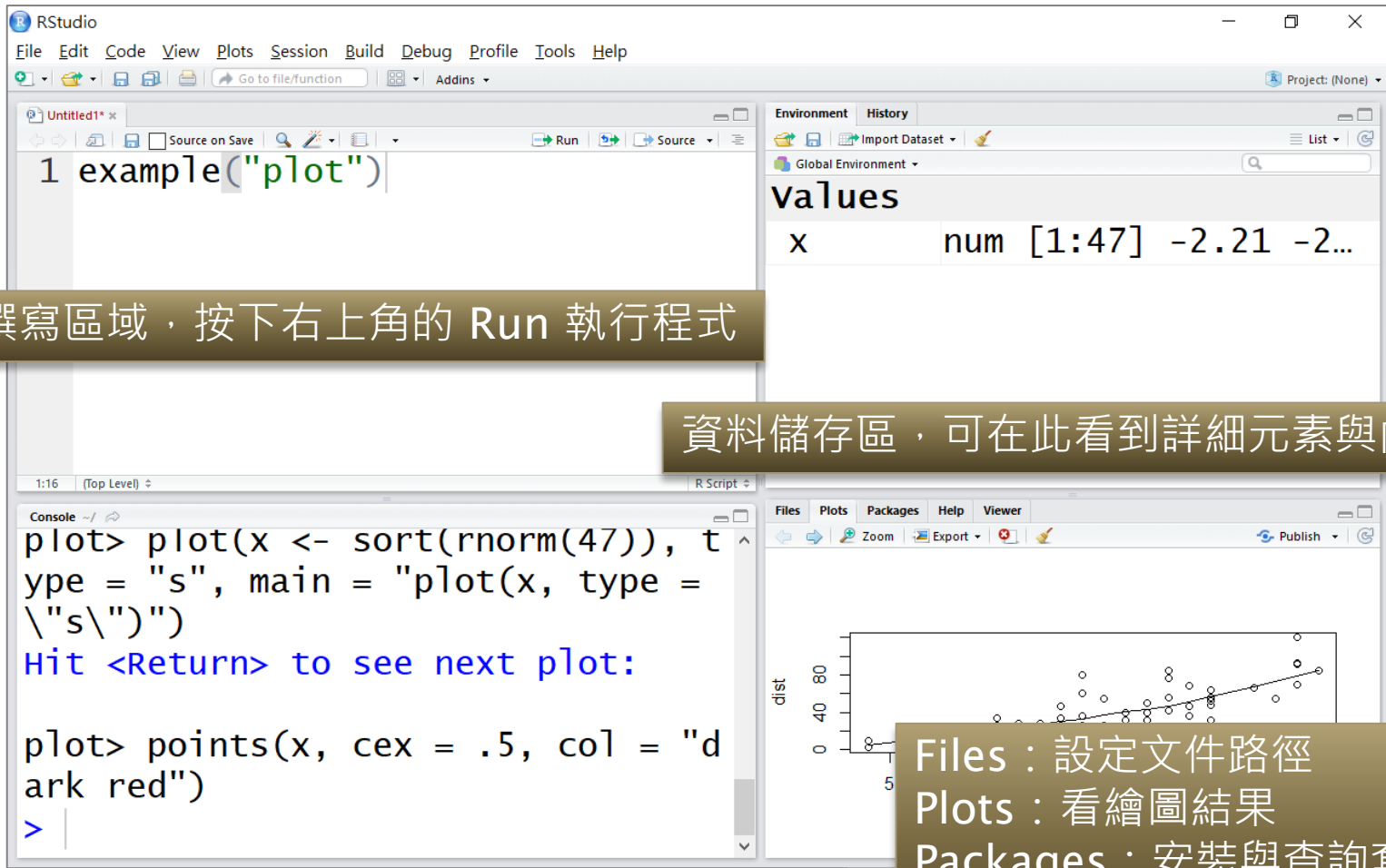
依照安裝檔指示進行安裝完成後，以系統管理員身分執行 RStudio



順利開啟 RStudio



RStudio 編輯畫面介紹



程式撰寫區域，按下右上角的 Run 執行程式

資料儲存區，可在此看到詳細元素與內容

主控台區域，程式碼也可以在主控台直接輸入

Files：設定文件路徑
Plots：看繪圖結果
Packages：安裝與查詢套件
Help：看 R 說明文件