Introduction to R Software

Introduction

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Why R and Installation Procedure

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What is R?

R is an environment for data manipulation, statistical computing, graphics display and data analysis.

Effective data handling and storage of outputs is possible.

Simple as well as complicated calculations are possible.

What is R?

Graphical display on-screen and hardcopy are possible.

Programming language is effective which includes all possibilities just like any other good programming language.

The R language is very similar in appearance to "S" - language based on a software S-Plus.

Switching to R?

Many people, research and design offices, analytical firms have started using R.

R is free.

Many statistical packages are freely available.

So you may also consider switching to R.

Switching to R?

- R has a statistical computing environment.

- It is free (open source) software and therefore is not a black box.

- It has a computer language which is convenient to use for statistical and graphical applications.

Switching to R?

- The commands can be saved, run and stored in script files.

- R is available for Windows, Unix, Linux and Macintosh platforms.

- R was developed to compete with S-Plus.

- Built in and contributed packages are available, and users are provided tools to make packages. It is possible to contribute own packages.

Switching to R?

- This language provides the logical control of branching and looping, and modular programming using functions.

- Error messages are provided while executing a programme or a function which are helpful in finding the errors.

Switching to R?

- R is an interpreted computer language (Not compiler).

- When we use the command line interface, each command or expression to be evaluated is typed at the command prompt, and immediately evaluated when the Enter key is pressed at the end of a syntactically complete statement.

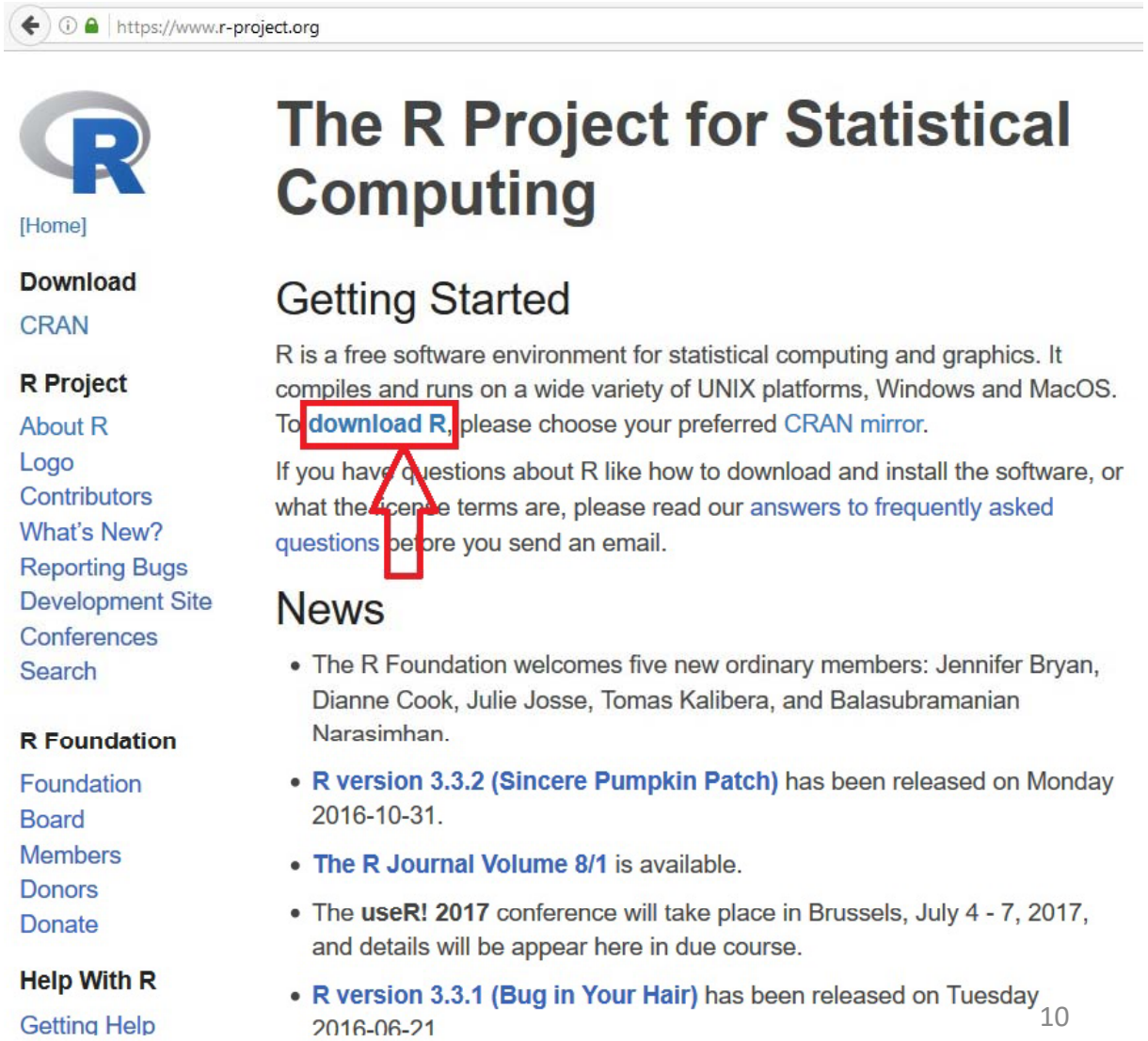
Switching to R?

- **Tips**
  - ✓ **Press the up-arrow key to recall commands and edit them.**
  - ✓ **Use the Esc (Escape) key to cancel a command.**
- **Graphics can be directly saved in a Postscript or PDF format.**

Installing R

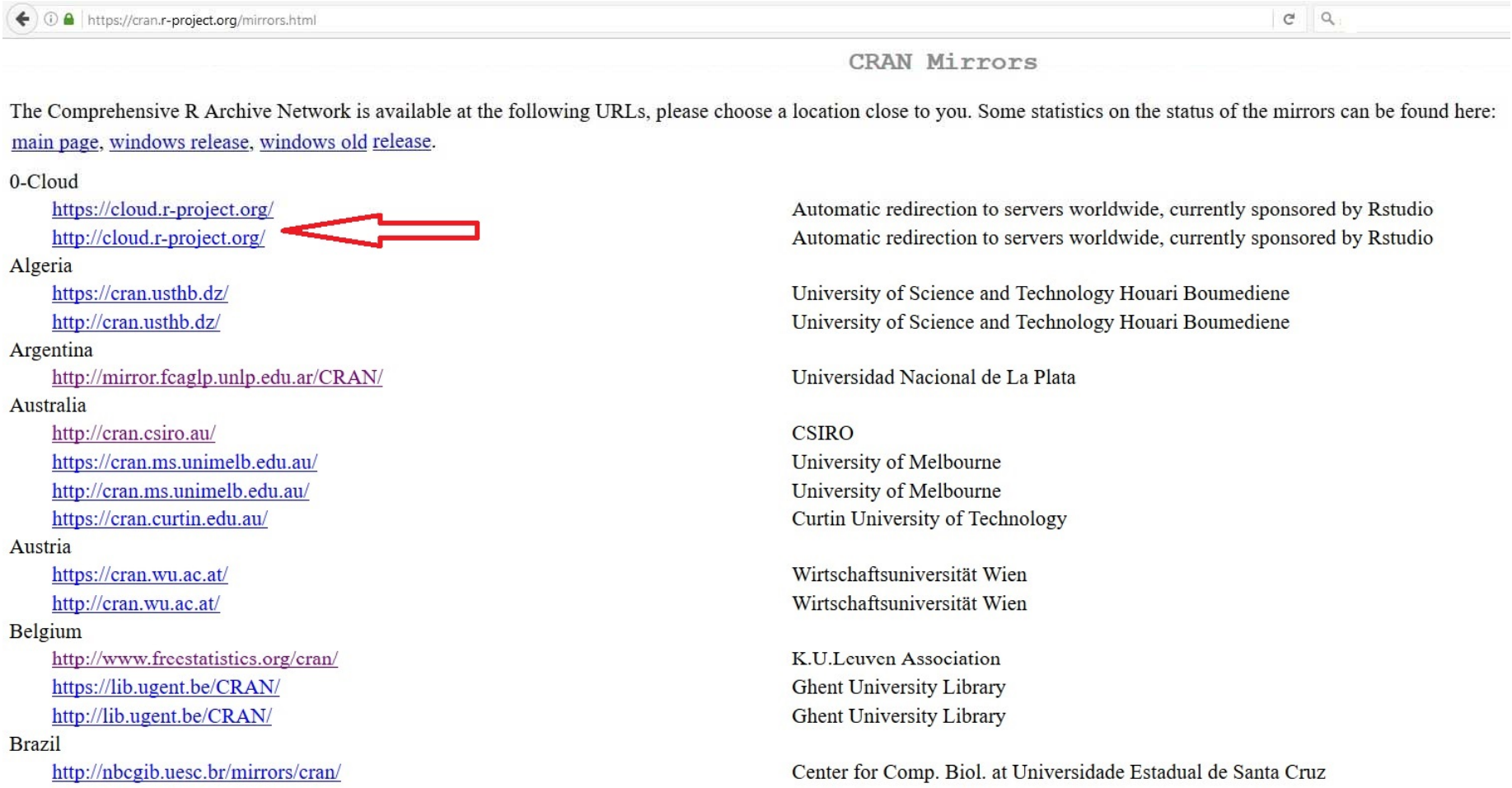
You may install R in a windows or Apple computer by downloading from https://www.r-project.org

Click on download R



Installing R

Choose any mirror and click on the link



https://cran.r-project.org/mirrors.html

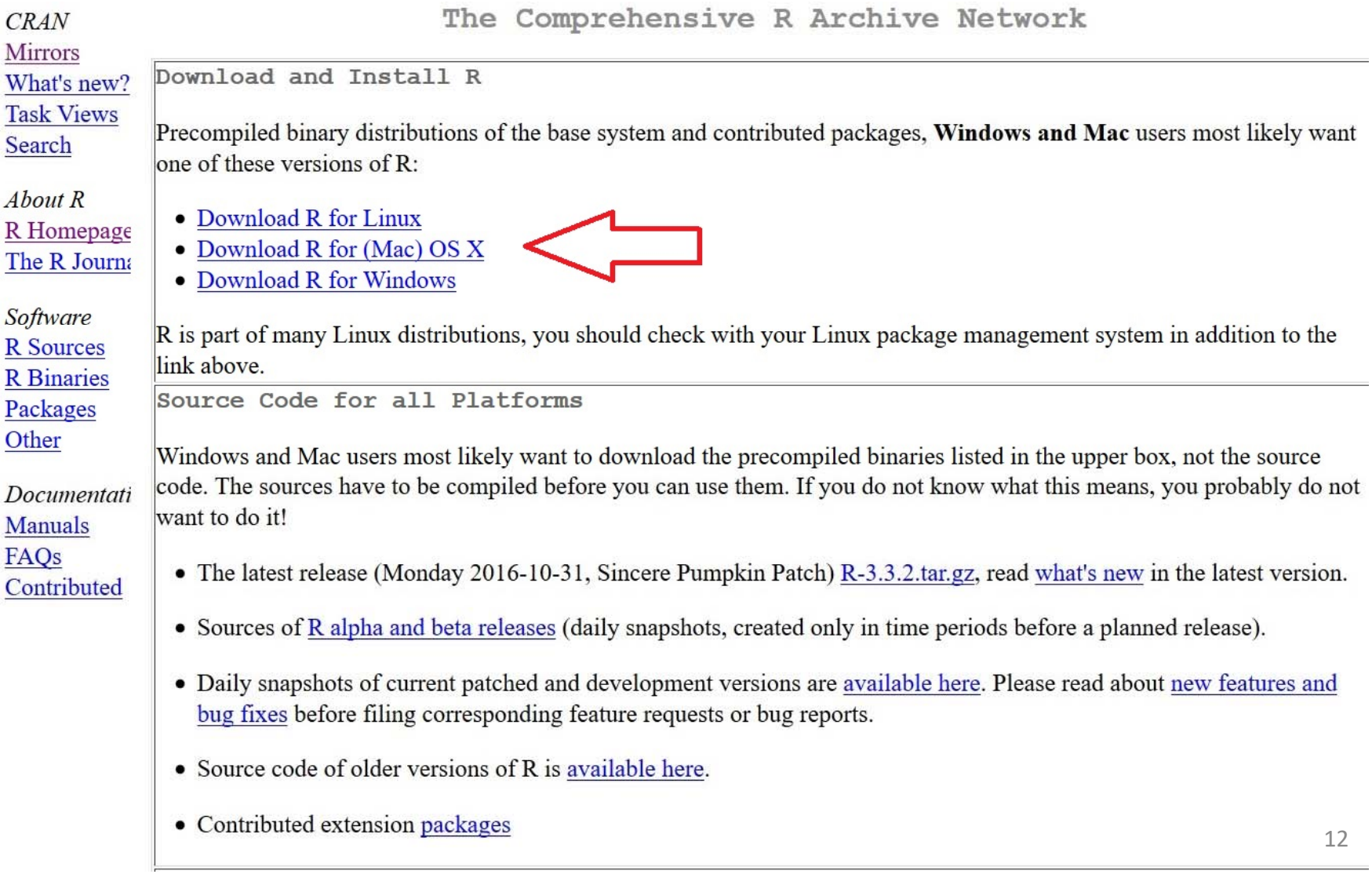
CRAN Mirrors

The Comprehensive R Archive Network is available at the following URLs, please choose a location close to you. Some statistics on the status of the mirrors can be found here: main page, windows release, windows old release.

0-Cloud	
https://cloud.r-project.org/	Automatic redirection to servers worldwide, currently sponsored by Rstudio
http://cloud.r-project.org/	Automatic redirection to servers worldwide, currently sponsored by Rstudio
Algeria	
https://cran.usthb.dz/	University of Science and Technology Houari Boumediene
http://cran.usthb.dz/	University of Science and Technology Houari Boumediene
Argentina	
http://mirror.fcaglp.unlp.edu.ar/CRAN/	Universidad Nacional de La Plata
Australia	
http://cran.csiro.au/	CSIRO
https://cran.ms.unimelb.edu.au/	University of Melbourne
http://cran.ms.unimelb.edu.au/	University of Melbourne
https://cran.curtin.edu.au/	Curtin University of Technology
Austria	
https://cran.wu.ac.at/	Wirtschaftsuniversität Wien
http://cran.wu.ac.at/	Wirtschaftsuniversität Wien
Belgium	
http://www.freestatistics.org/cran/	K.U.Leuven Association
https://lib.ugent.be/CRAN/	Ghent University Library
http://lib.ugent.be/CRAN/	Ghent University Library
Brazil	
http://nbcgib.uesc.br/mirrors/cran/	Center for Comp. Biol. at Universidade Estadual de Santa Cruz

Installing R

Else, download it from the Comprehensive R Archive Network (CRAN) website: http://cran.r-project.org/



Installing R Studio

Rstudio is a software which helps in running the R software.

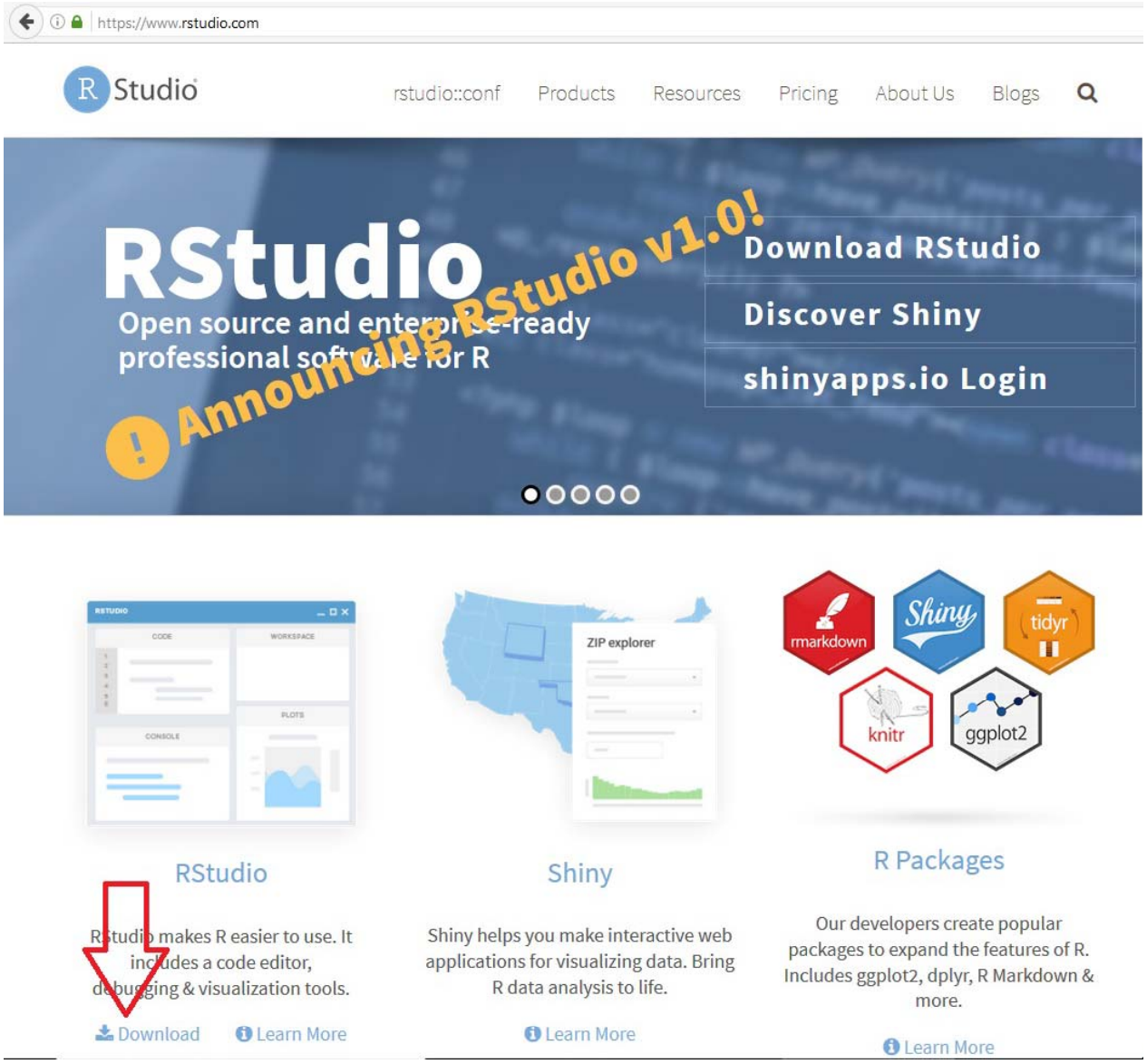
Several such editors are available, e.g. Tinn R (https://sourceforge.net/projects/tinn-r)

Rstudio is written in C++ programming language.

Rstudio is a free and open-source integrated development environment (IDE) for R.

Download R-Studio software from website https://www.rstudio.com/

Installing R Studio



Download and double click on the downloaded file.