

R - HISTORY

S is a statistical programming language developed primarily by [John Chambers](#) and (in earlier versions) Rick Becker and Allan Wilks of [Bell Laboratories](#) in 1976.



S_{Version 1}

S_{Version 2}

S_{Version 3}



R - HISTORY

R was created by [Ross Ihaka](#) and [Robert Gentleman^{\[16\]}](#) at the [University of Auckland](#), New Zealand, and is currently developed by the *R Development Core Team*

R is named partly after the first names of the first two R authors and partly as a play on the name of S.

R is a open source [programming language](#) and [free](#) software environment for [statistical computing](#) and graphics that is supported by the R Foundation for Statistical Computing.

The project was conceived in 1992, with an initial version released in 1995 and a stable beta version in 2000

R is a [GNU package](#). The [source code](#) for the R software environment is written primarily in [C](#), [Fortran](#), and R.

“The GNU General Public License is a widely used free software license, which guarantees end users the freedom to run, study, share and modify the software.”

R - MERITS

- R is the most comprehensive statistical analysis package available . It incorporates all of the standard statistical tests, models, and analyses, as well as providing a comprehensive language for managing and manipulating data.
- R is a programming language and environment developed for statistical analysis by practising statisticians and researchers.
- The graphical capabilities of R are outstanding, providing a fully programmable graphics language that surpasses most other statistical and graphical packages.
- R is free and open source software, allowing anyone to use and, importantly, to modify it.
- R has over 4800 packages available from multiple repositories specializing in topics like econometrics, data mining, spatial analysis, and bio-informatics.
- R is cross-platform. R runs on many operating systems and different hardware.

R - DEMERITS

- **R is slow** : Is an interpreting language and is not very fast. Could be 1/40 of C.
- **Limitation of Memory**: All the objects are in memory. Many R commands give little thought to memory management, and so R can very quickly consume all available memory.
- **R is hard to learn**: One has to memorize the commands /functions, and understand the logics of programming. The fluency in R requires great time and energy.
- **Low Package Quality**: The quality of some packages is less than perfect,

Installation of R/RStudio

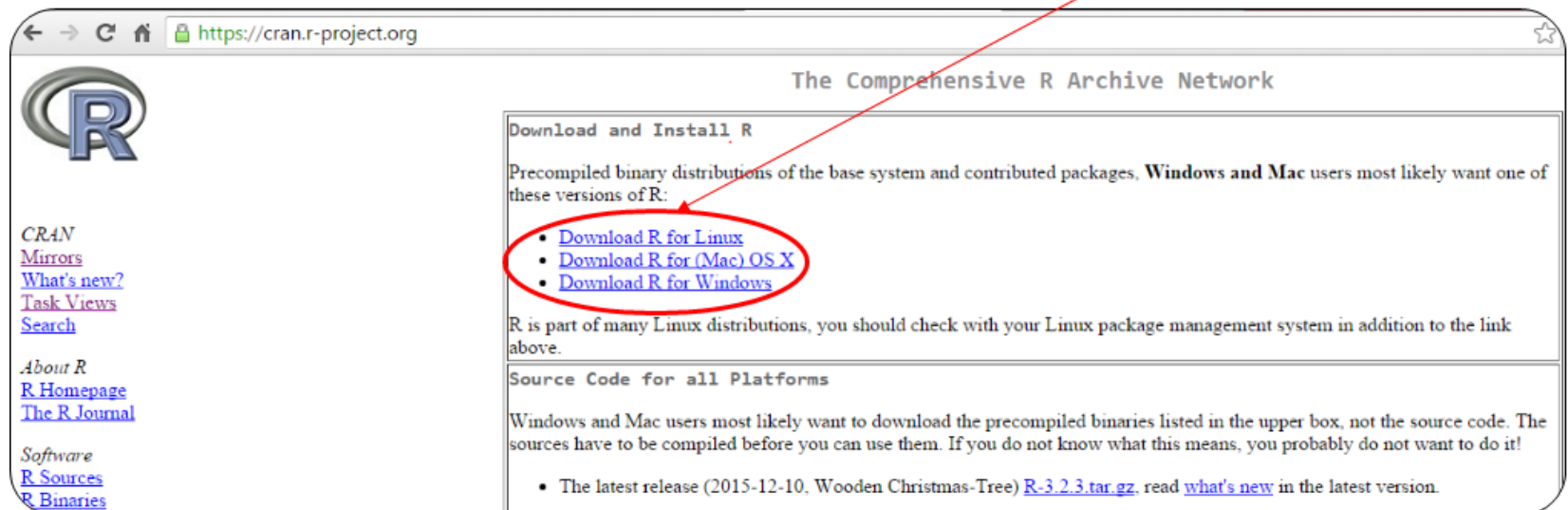
“Almost **36%** of all advertised analytics jobs in India demand for R as a core skill” – Advancer and Analytics India Magazine

STEP TO INSTALL R

Step1. Go to the following website

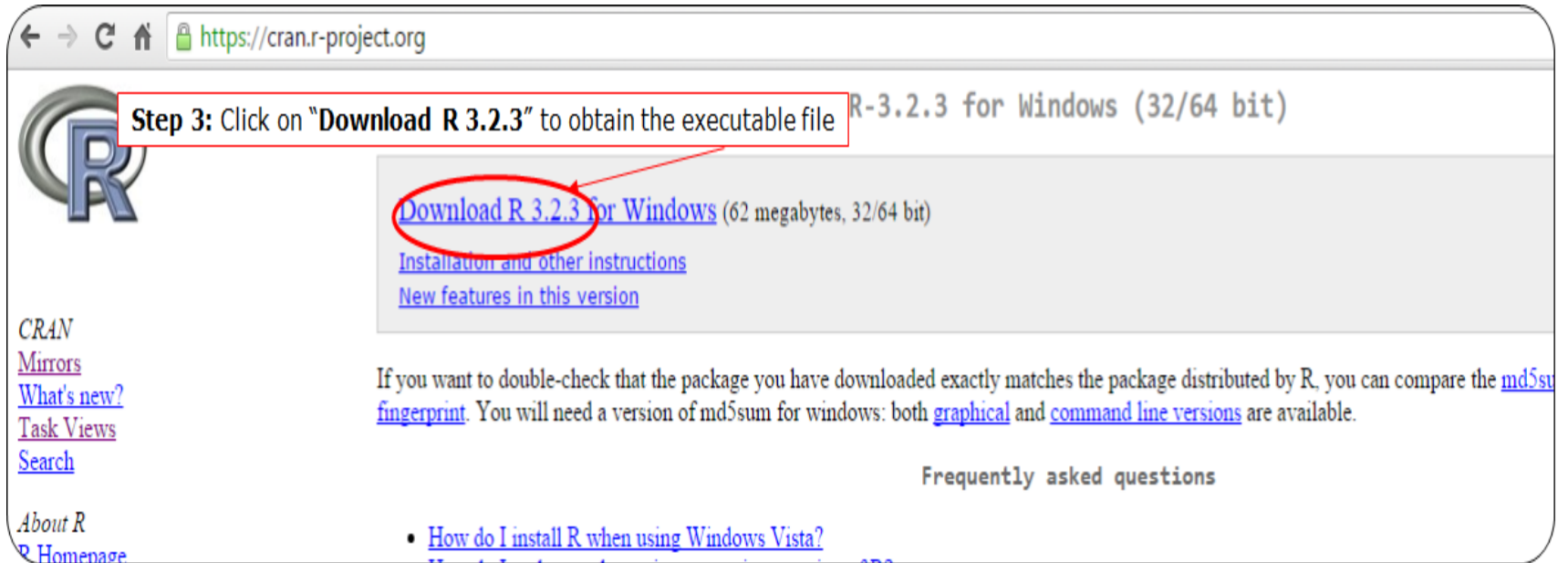
- ✓ <https://cran.r-project.org/>
- ✓ Options will be provided, to select the Platform. R can be installed for Linux, Mac(OS X) & Windows
- ✓ In this Demo, Windows Platform has been selected

Step 1: Click on the appropriate "Download R" link as per your system's platform



STEP TO INSTALL R

Step 2. Click on "Download R" to obtain the executable file



The screenshot shows the CRAN website at <https://cran.r-project.org>. The R logo is on the left. A red box highlights the text "Step 3: Click on 'Download R 3.2.3' to obtain the executable file". A red circle highlights the link "Download R 3.2.3 for Windows (62 megabytes, 32/64 bit)". Below this link are two more links: "Installation and other instructions" and "New features in this version". On the left side, there is a sidebar with links: "CRAN", "Mirrors", "What's new?", "Task Views", "Search", "About R", and "R Homepage". On the right side, there is a section titled "Frequently asked questions" with a link "How do I install R when using Windows Vista?".

Step 3: Click on "Download R 3.2.3" to obtain the executable file

[Download R 3.2.3 for Windows](#) (62 megabytes, 32/64 bit)

[Installation and other instructions](#)

[New features in this version](#)

CRAN
[Mirrors](#)
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[Task Views](#)
[Search](#)
[About R](#)
[R Homepage](#)

If you want to double-check that the package you have downloaded exactly matches the package distributed by R, you can compare the [md5sum fingerprint](#). You will need a version of md5sum for windows: both [graphical](#) and [command line versions](#) are available.

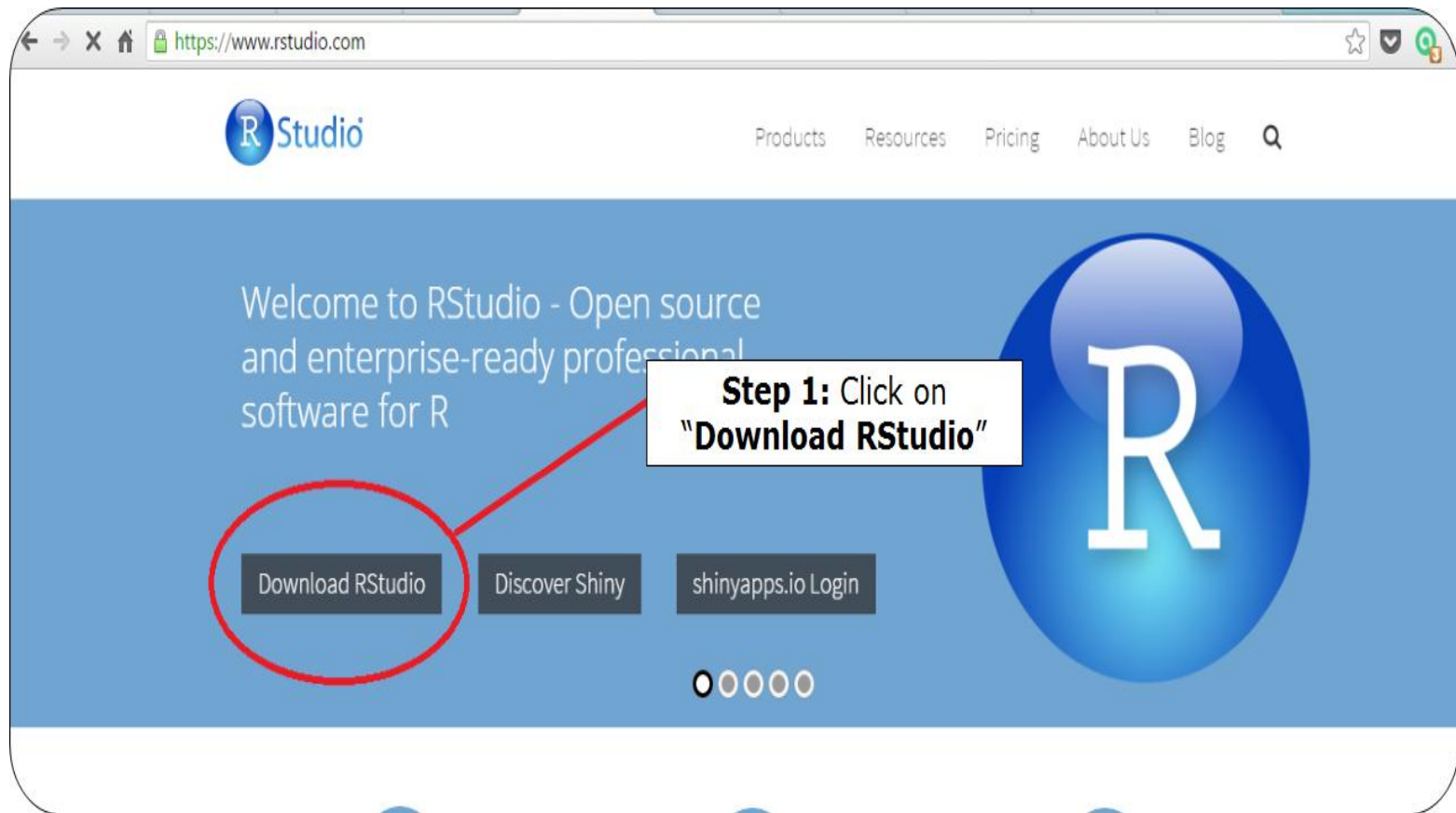
Frequently asked questions

- [How do I install R when using Windows Vista?](#)

Step 3. Install the executable file

STEP TO INSTALL RSTUDIO

Step 1. Go to <https://www.rstudio.com/>



STEP TO INSTALL RSTUDIO

Step 2. Click on "Download RStudio"

The screenshot shows the RStudio Desktop product page on the website <https://www.rstudio.com/products/RStudio/>. The page is titled "RStudio Desktop" and compares two editions: "Open Source Edition" and "Commercial License".

	Open Source Edition	Commercial License
Overview	<ul style="list-style-type: none">• Access RStudio locally• Syntax highlighting, code completion, and smart indentation• Execute R code directly from the source editor• Quickly jump to function definitions• Easily manage multiple working directories using projects• Integrated R help and documentation• Interactive debugger to diagnose and fix errors quickly• Extensive package ecosystem	<p>All of the features of open source; plus:</p> <ul style="list-style-type: none">• A commercial license for organizations not able to use AGPL software• Access to priority support
Support	Community forums only	<ul style="list-style-type: none">• Priority Email Support• 8 hour response during business hours (ET)
License	AGPL v3	RStudio License Agreement
Pricing	Free	\$995/year

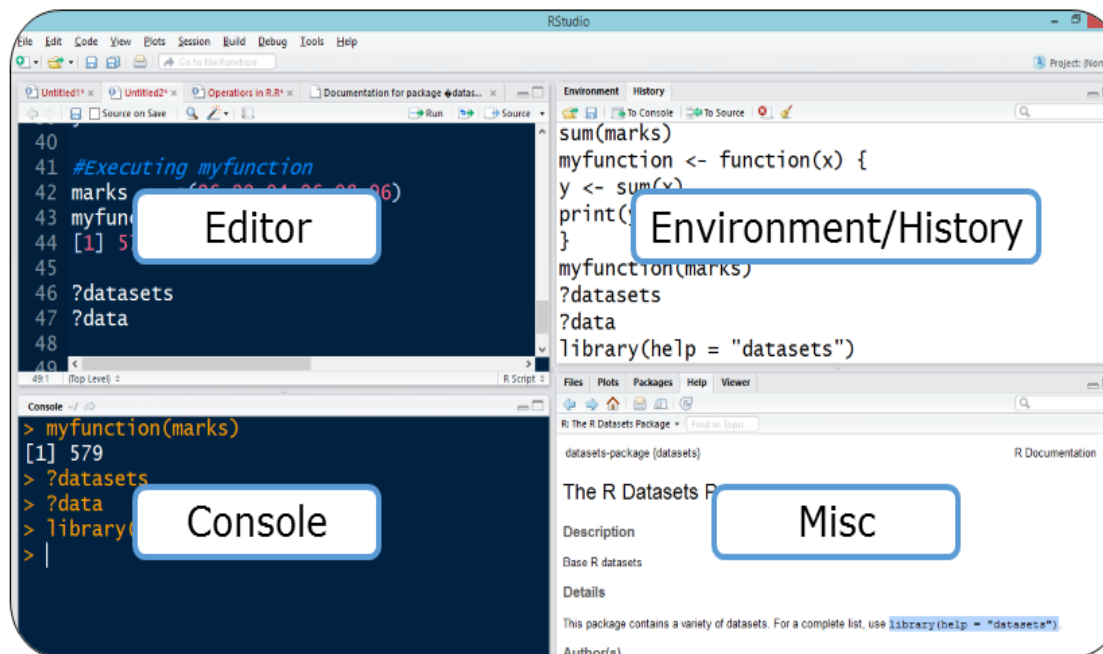
Annotations for Step 2:

- A red box highlights the text: "Step 2: Click on 'DOWNLOAD RSTUDIO DESKTOP' to obtain the executable file".
- A red arrow points from this box to the "DOWNLOAD RSTUDIO DESKTOP" button, which is also circled in red.

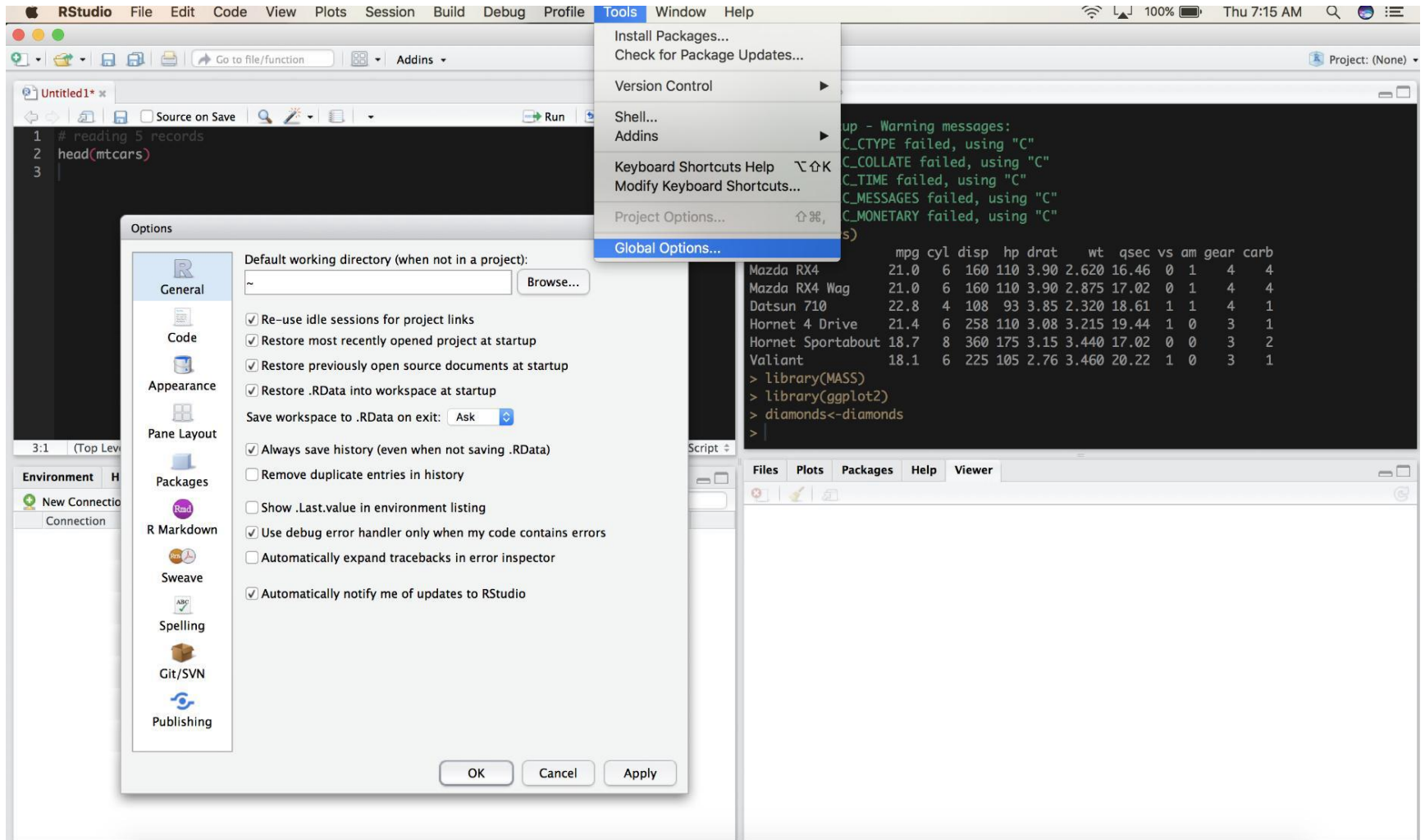
Step 3. Install RStudio

RSTUDIO INTERFACE

- RStudio interface has four main parts
 - The top left panel is the **Editor**
 - The lower left panel is the **Console**
 - The top right panel constitutes of **Environment** tab, which refers to the console environment and lists in detail, every single symbol that has been defined in the console and **History** tab, which lists every console command that was ever executed
 - The bottom right panel is **Misc** and contains five separate tabs, **Files**, **Plots**, **Packages**, **Help** and **Viewer**



RSTUDIO - SETTINGS



TIPS TO REMEMBER

- R is case-sensitive
- Comment your code so you remember what it does; comments are preceded with #
- R scripts are simply text files with a .R extension
- Use Ctrl + R to submit code
- Use the Tab key to let R/R Studio finish typing commands for you
- Use Shift + down arrow to highlight lines or blocks of code
- In R Studio: Ctrl + 1 and Ctrl + 2 switches between script and console
- Use up and down arrows to cycle through previous commands in console
- Don't be afraid of errors; you won't break R
- If you get stuck, Google is your friend

QUIZ TIME

Question 1. The primary R system is available from the _____

- a) CRAN
- b) CRWO
- c) GNU
- d) All of the mentioned

QUIZ TIME

Question 2. Files containing R scripts ends with extension :

- a) .S
- b) .R
- c) .Rp
- d) All of the mentioned

