

Installing R and RStudio

Biostat 213: Introduction to Computing in the R Software Environment

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What is R and Rstudio?

What is statistical software?

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RStudio

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What is R and
Rstudio?

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- ▶ statistical software is software for conducting **statistical analysis**
- ▶ popular examples include: **R**, Stata, SAS, and IBM SPSS
- ▶ each software program often has its own **programming language**
- ▶ the language allows you to **write instructions** to your computer

What is R?

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What is R and
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- ▶ R is a popular **statistical software** program
- ▶ the term also refers to the **programming language**

What is R?

- ▶ R is **open source**, meaning that the computer code behind it is **publicly available** online
- ▶ development (planning and improvement, etc) of R does not occur within any one private company, but rather within a **community of individual contributors**, from a variety of organizations
- ▶ there is no official technical support, but there are various **online forums and other resources**
- ▶ R includes **little/no added graphical interface** (depending on your operating system)

Why use R?

- ▶ it is extremely **powerful**
 - ▶ unlike most other statistical software, it supports using **multiple data objects** and various types of objects
 - ▶ it supports very complex **data manipulation**
 - ▶ it supports a **wide array of methods**, in large part because there are numerous (more than 12,000!) add-on **packages**
- ▶ it is extremely **popular** in academia as well as in industry
 - ▶ there are numerous **books and other resources** for using R
 - ▶ it is a **marketable skill!**
- ▶ it is **free of cost**

What is RStudio?

- ▶ RStudio is an **add-on interface** (a set of “windows”) for R
- ▶ it was first released in 2011

What is RStudio?

- ▶ to be clear, RStudio does not allow for graphical operation of R (such as through drop-down menus)
- ▶ but, RStudio does include numerous helpful features including:
 - ▶ a tool for [writing and editing code](#)
 - ▶ a tool for [browsing files](#) on the computer
 - ▶ a tool to R's built-in documentation, with clickable links
 - ▶ a tool for [viewing and exporting plots](#)
 - ▶ a tool for browsing and viewing [data objects](#)
 - ▶ a tool for installing packages

Installling R and RStudio

Installing R

- ▶ if your computer's operating system is **macOS** (Apple) or **Windows** (Microsoft), visit cran.r-project.org/ and select the link for your operating system
 - ▶ for **macOS**, select the **latest release** (at the top of the page) and open the downloaded file
 - ▶ for **Windows**, select **base**, select the link at the top of the page, and open the downloaded file
- ▶ if your computer's operating system is **Linux**, the easiest way to install R should be via your package manager

Installing RStudio

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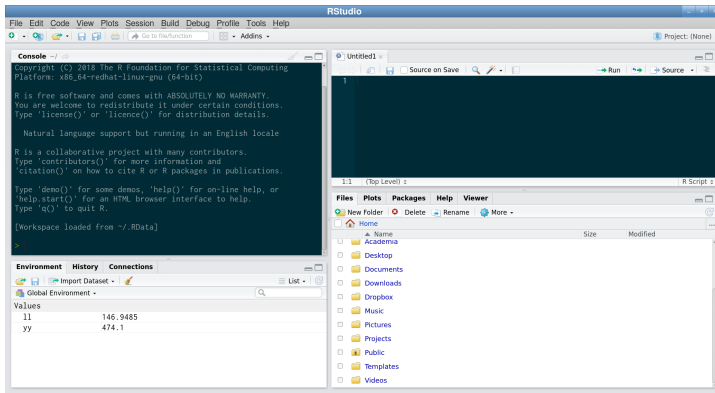
What is R and
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- ▶ visit www.rstudio.com/products/rstudio/download/
- ▶ select the download link for the RStudio Desktop Open Source License
- ▶ select the download link for your operating system
- ▶ open the downloaded file

Verifying successful installation

- ▶ open RStudio
- ▶ you should see something like this:



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- ▶ please feel free to email me if you have trouble installing R or RStudio:
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