

Step 1: Download R and install R:

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

Step 2: Download and install Rstudio **after you install R:**

<http://www.rstudio.com/products/rstudio/download/>

For some potentially useful tips, see:

<http://socserv.mcmaster.ca/jfox/Courses/R/ICPSR/R-install-instructions.html>

From: <http://socserv.mcmaster.ca/jfox/Courses/R/ICPSR/R-install-instructions.html>

Installing R on Windows

Instead of installing R in the standard location, C:\Program Files\R\R-3.1.1, I suggest that you use C:\R\R-3.1.1. This will allow you to install packages without running R with administrator privileges and will avoid problems that sometimes occur when there are spaces in paths.

<https://cran.rstudio.com/> Download and install R first

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.

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[R Homepage](#)

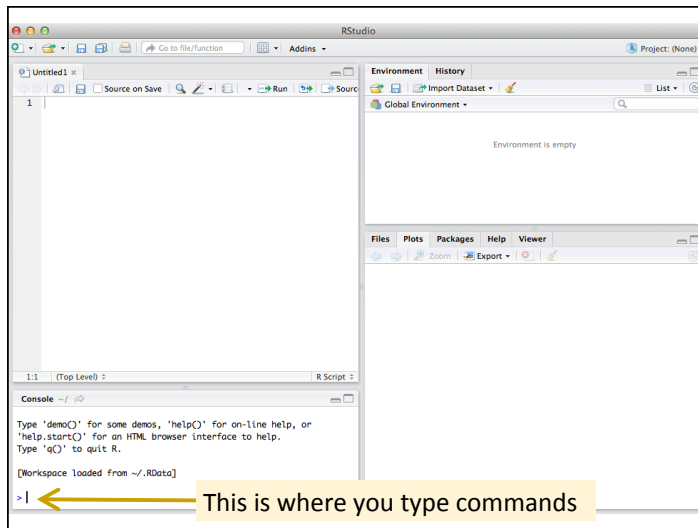
<http://www.rstudio.com/products/rstudio/download/>

R Studio

Instillers for Supported Platforms

Instillers	Size	Date	MD5
RStudio 1.0.136 - Windows Vista/7/8/10	81.9 MB	2016-12-21	93b3f307f567e33f7a4db4c114099b3e
RStudio 1.0.136 - Mac OS X 10.6+ (64-bit)	71.2 MB	2016-12-21	12d6d6ade0203a2fcef6fe3dea65c1ae
RStudio 1.0.136 - Ubuntu 12.04+/Debian 8+ (32-bit)	85.5 MB	2016-12-21	0a20fb89d8aeb39b329a640ddadd2c5
RStudio 1.0.136 - Ubuntu 12.04+/Debian 8+ (64-bit)	92.1 MB	2016-12-21	2a73b88a12a9fba9f6251cecf8b41340
RStudio 1.0.136 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	84.7 MB	2016-12-21	fa6179a7855bf0e9939a34c169da45fd
RStudio 1.0.136 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	85.7 MB	2016-12-21	2b3a148ded380b704e58496befb55545

To download Rstudio
 Scroll down until
 you get to installers



If you would like to learn R or statistics or data analysis via Swirl:

<http://swirlstats.com/students.html>

Install swirl

Open RStudio (or just plain R if you don't have RStudio) and type the following into the console:

```
> install.packages("swirl")
```

Note that the > symbol at the beginning of the line is R's prompt for you type something into the console. We include it here so you know that this command is to be typed into the console and not elsewhere. The part you type begins after > .

After you have installed a package using

```
> install.packages("swirl")
```

You can load the package using the library command:

```
> library(swirl)
```

Use the following to install Swirl courses:

```
> install_from_swirl("Course Name Here")
```

The following will start swirl:

```
> swirl()
```

For a list of courses:

https://github.com/swirldev/swirl_courses#swirl-courses

<http://swirlstats.com/scn/title.html>

Some notes:

- 1.) Normally you only need to install a package once.
e.g `> install.packages("TDAmapper")`
- 2.) If you want to use a package, you must load it
e.g `> library("TDAmapper")`
You only need to do this once per session.
- 3.) If you want to repeat a command, you can use the up-arrow on your keyboard to obtain previously typed commands in the console.
- 4.) When you start typing commands, R will show you some choices. You can click on the one you want.

<https://CRAN.R-project.org/package=TDAmapper>

TDAmapper: Analyze High-Dimensional Data Using Discrete Morse Theory

Topological Data Analysis using Mapper (discrete Morse theory). Generate a 1-dimensional simplicial complex from a filter function defined on the data: 1. Define a filter function (lens) on the data. 2. Perform clustering within within each level set and generate one node (vertex) for each cluster. 3. For each pair of clusters in adjacent level sets with a nonempty intersection, generate one edge between vertices. The function mapper1D uses a filter function with codomain R, while the the function mapper2D uses a filter function with codomain R^2 .

Version: 1.0
 Depends: R (≥ 3.1.2)
 Suggests: fastcluster, igraph
 Published: 2015-05-31
 Author: Paul Pearson [aut, cre, trf], Daniel Muellner [aut, ctb], Gurjeet Singh [aut, ctb]
 Maintainer: Paul Pearson <pearsonp@hope.edu>
 BugReports: <https://github.com/paulpearson/TDAmapper/issues>
 License: GPL-3
 URL: <https://github.com/paulpearson/TDAmapper/>
 NeedsCompilation: no
 Materials: [README](#)
 CRAN checks: [TDAmapper results](#)

Downloads:

Reference manual: [TDAmapper.pdf](#)
 Package source: [TDAmapper_1.0.tar.gz](#)
 Windows binaries: r-devel: [TDAmapper_1.0.zip](#), r-release: [TDAmapper_1.0.zip](#), r-oldrel: [TDAmapper_1.0.zip](#)
 OS X Mavericks binaries: r-release: [TDAmapper_1.0.tgz](#), r-oldrel: [TDAmapper_1.0.tgz](#)

Linking:

Please use the canonical form <https://CRAN.R-project.org/package=TDAmapper> to link to this page.

Click on README for info about package

Click on pdf for description of all TDAmapper commands

If you click on a .r file, it will load in the upper left box of R-studio.

You should download the following files from:
http://homepage.divms.uiowa.edu/~idarcy/COURSES/TDA/SPRING18/LAB1_Rintro

You can download some data files from
<http://homepage.divms.uiowa.edu/~idarcy/COURSES/TDA/SPRING18/Data>

This is where R scripts will load. Feel free to modify R scripts (you may wish to save older versions).

List of all available data sets and variables.

This is where you will see images and help info.

This is where you type commands

To run an R file:

- 1.) Select the section you want to run and click run
- 2.) Click on the line you want to run and click run. Continue clicking run to run the code line by line.

Run blue highlighted portion

Run line 8