Getting Started with R

Download R and R Studio

Visit http://cran.r-project.org/ or google "R language."

CRAN (Comprehensive R Archive Network) is a network of mirror sites that allow you to download precompiled binary versions of R or source. Choose the R version that is suitable to your operating system (Windows, Mac or Linux).

Although optional, you are highly recommended to install **R Studio** as well. After installing R, go to https://www.rstudio.com/products/rstudio/download, choose the RStudio Desktop (free) version to download and install. It provides a nicer user interface together with some useful tools for programming in R.

You are recommended to install R on your computer first, then R-studio. During the installation process, choose the default options, unless you have a good understanding of the other options.

Set Working Directory

It is convenient to set your working directory first. This way, when you load or save a file, R will automatically access the working directory. To do that, use function setwd(). Note that the `"\"` used in windows directory specifications does not work here, it needs to be the other direction `"/"`.

You can also check which working directory you are at right now using:

```
getwd()
```

Here is the official R manual page about this http://stat.ethz.ch/R-manual/R-patched/library/base/html/getwd.html

Get Packages

One of the reasons that R has become so popular in recent years is the wide selections of R packages created by R users. A package generally contains functions, data, and complied codes, in addition to a user manual.

You can find a full list of the R-packages from https://cran.r-project.org/. It is not recommended that you go through the complete list of packages, unless you really have some time that you want to kill.

To get a package you will need to first learn about its name, then use the function install.packages("name") to install the package and the relevant files on your computer. Over

the quarter, we will need to install a few packages in addition to the default ones that are installed together with R.

One of my favorite packages is data.table because it allows for fast and easy manipulation of data sets, even if they are very large. Try installing it with the command:

```
install.packages("data.table")
```

Another package you should install is R Markdown. This package is used to produce most of the slides and the RMarkdown (Rmd) used to produce the slides are included in Camino. Feel free to use them as a starting point when writing up your homework. Using RMarkdown isn't strictly required for assignments, but is highly recommended. It can be installed using the command:

```
install.packages("rmarkdown")
```

Get Help

There are generally two ways to help on using R. If you know the name of the function that you are using, but would like to learn about its details or parameter definitions, use "help()", or "?""

Either way, you will get the official R manual for the function plot().

If you do not know the name of the function to use, the best way to find help is through online search. R has become so popular that there are online communities providing really helpful services to R users. There are a few websites that you might find useful to get answers to many of your R programming related questions.

https://stackoverflow.com/ is a community for coders. Not just R, for any programming language, if you have questions, you will find them answered by the community soon.

http://www.statmethods.net/index.html is a nicely organized website helping beginners to get started with R.

https://blog.rstudio.com/ is the Rstudio official blog site.

https://www.r-bloggers.com/ is the R blog sit.

This is far from a complete list of websites. One of the best part of using R is that you will never feel lonely. Just type your question online, you will find an answer somewhere on the web pretty soon.

Finally, if you want to read a book about R, here is the link to the pdf version of The Art of R Programming