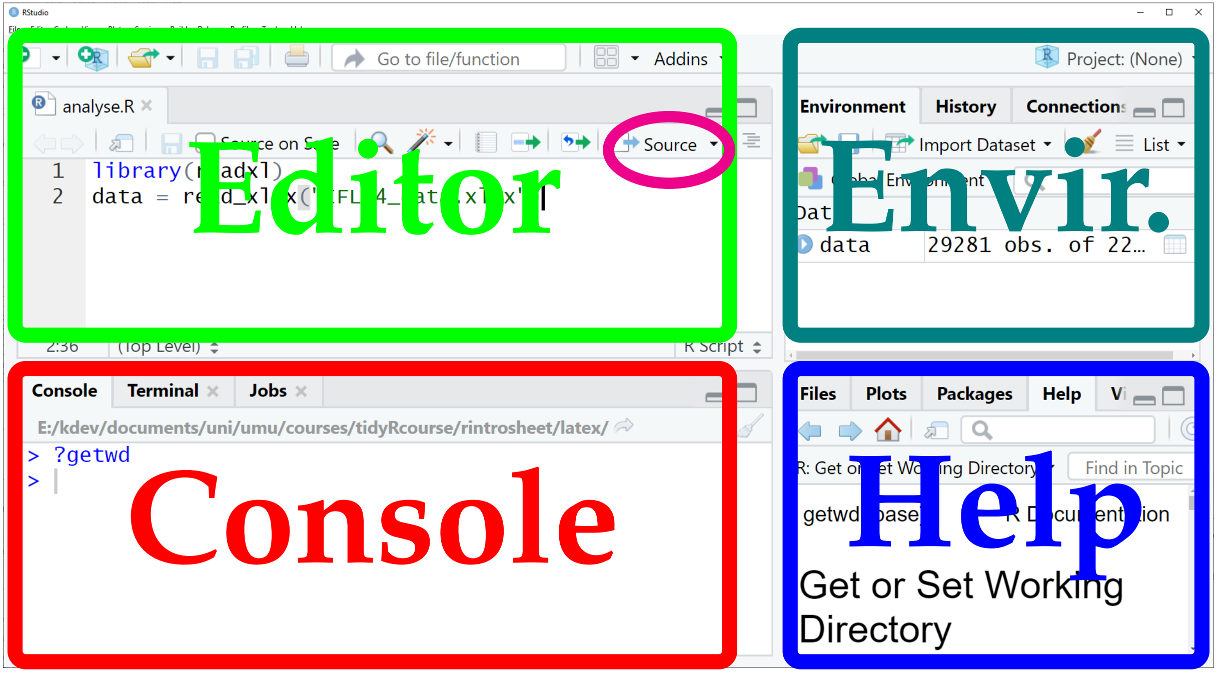
Chapter 1

RStudio

Now we switch to RStudio and will see why it is much mor convenient. Windows user can open RStudio using the start menu or the search box. Mac users should use the dock, launchpad, finder or spotlight.

Figure 1.1: The Rstudio program



```
library(r adxl)
data = re d_xl x(' FL 4_ at .xl x'
```

```
E:/kdev/documents/uni/umu/courses/tidyRcourse/rintrosheet/latex/
> ?getwd
>
```

Text editor

The *editor* pane displays the content of the *.R* file. This is the place to put all the code and commands that you want to keep so that you can run the same analysis again in the future. To run all code in the file, click on *Source* on the top right of the editor pane.

Console

The *Console* tab is good to try out single pieces of codes that you are not sure will work or that you just want to play with. Make sure the Console tab is selected. Write the the code that you want to run and press enter. Pressing the Arrow-up key on the keyboard while the cursor is blinking in the console will bring back the last line of code that was run in the console.

Environment

The *Environment* tab in the top right pane contains an overview of all the objects in R. Available R objects will appear there. Ensure the Environment tab is selected.

Help

The *Help* tab displays help information. For example writing `?getwd` in the console and pressing Enter will show informationon on setting working directories. The help command can be used with any inbuilt function. Ensure the Help tab is selected.

1.1 How script files work

When a script is started by clicking on Source in RStudio, R reads the text inside of it from top to bottom. If a line contains text, it instructs R to do certain things. These are intructions. Every instruction is followed by a line break. So that is really all what a script file contains, a series of commands in textual form that are executed from top to bottom of the file.

1.2 Why script files?

As mentioned in the boxes above and in the R Basics chapter, there is two ways of entering R code in Rstudio: The console or executing a file with R code in it. Even if it may be tempting to just use the console, try to always put keep the essential R code in a file so that the analysis can be reproduced later. Actually, it may the likely primary beneficent is the author of the code because it often is difficult to exactly remember how to preform an analysis after some time.

A particular problematic scenario would be if a scientist performed an analysis and published the results in a paper. This scientist does only uses the R console for analysing data, without storing the commands in a file. Somebody else that reads the paper two years later thinks there is problem with the results and tries to contact the scientist. Even though there is a basic description of the procedure in the paper, the scientist does not arrive at the published results, no matter how hard she tries. Is there really a problem with the original analysis? Or does the scientist do something wrong while trying to reproduce the results?

Other benefits of keeping R code in script files:

- Reusable code
- If the data changes, it is easy to run the script again
- It is possible to publish the code and let others reproduce and verify the results

As such, R code files should be self-sufficient, that means they should run without any further issues after opening them in Rstudio, potentially adjusting the R working directory, and clicking on Source.

They should also be well commented so that others or yourself can easily understand what the code is supposed to do.