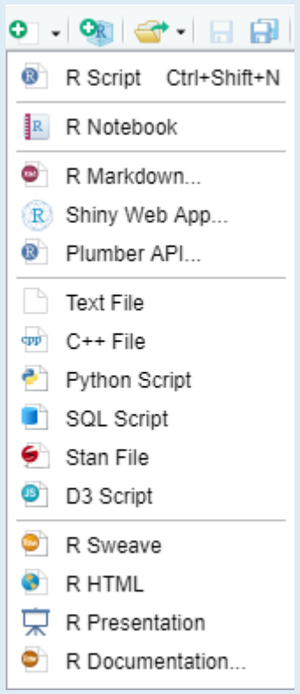
RStudio Basics: : **CHEAT SHEET**

Starting a Project

There are multiple options to choose from the new file drop down:



Document & Presentation

R Markdown: Document for presentation with R chunks embedded. Can knit to HTML, PDF and Word.

R Notebook: R Markdown with a preview option.

Shiny Web App: Interactive web app for user interaction with data.

Plumber API: Tool for turning R code into API by adding roxygen2-like comments.

R Sweave: Enables integration of R code into LaTeX and LyX documents.

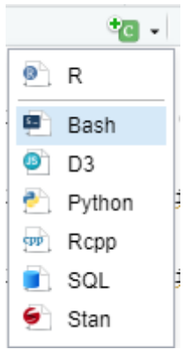
Scripts

You can embed any of the script files in an R Markdown document by referencing them in a chunk.

```
```{r, code = readLines("external.R")}
```
```

Inserting R Chunks

You can use the ”insert a new code chunk” drop down to easily add new chunks of code to an R Markdown document. You can alternatively click **Ctrl + Alt + I**.



Basic Chunk Options:

```
```{r, include = FALSE,
    echo = FALSE,
    message  = FALSE,
    warning = FALSE,
    fig.cap = “...”,
    fig.height = 5,
    fig.width = 5}
```
```

Add a caption

Change what is displayed in the markdown output – can be TRUE or FALSE

Set the graph height and width

Global changes

You can also change the global values, which will affect the whole document, with:

`knitr::opts_chunk$set(fig.width=6, fig.height=5…)`

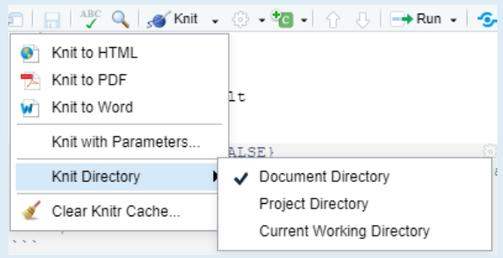
Other chunk options:

There are many other chunk options for displaying code, output, and text in many different formats and styles. An extensive guide can be found at:

https://yihui.org/knitr/options/

Knitting

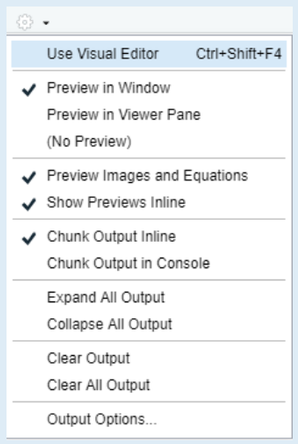
Knitting is a how you can render your R markdown document. Once you click the Knit button the document will render, and a preview will be displayed.



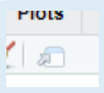
You can knit to HTML, PDF and Word. You can also easily choose the directory of where the rendering happens.

A useful shortcut for knitting is:
Ctrl + Shift + K

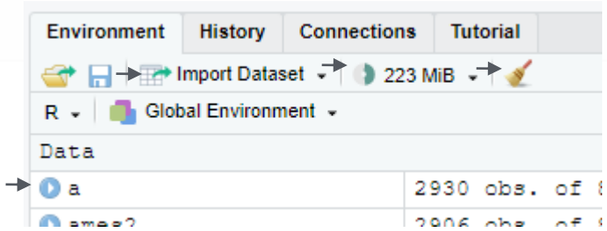
You can choose to have your preview displayed in the RStudio Viewer or in a new window in the settings:



or by clicking the new window button:



Environment



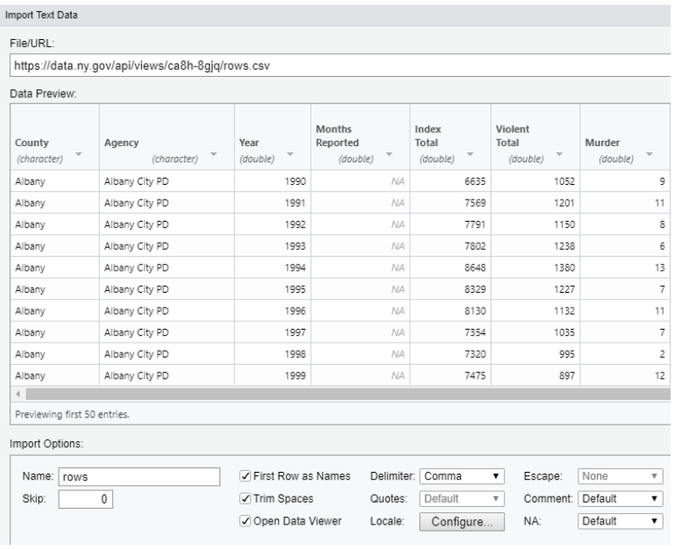
The environment tab is very useful for visualizing and handling the data you are currently dealing with. You can click on any dataset rather than typing view(x). You can also click on the dropdown of each dataset to see a neat breakdown.

It can also be used for changing the data by loading another workspace through the directory button

Importing Data

You can import data by clicking on the **Import Dataset** dropdown.

The import will give a preview of the data being imported which can be useful for verifying that the data is correct.



Memory

The environment tab is also useful for clearing up memory. You can click the broom or memory indicator for options of clearing space.

RStudio Basics: : **CHEAT SHEET**

Libraries

Useful R Libraries:
You can install an R package with:
Install.packages("package name")

You can then load the library with:
Library(package name)

.....

Tidyverse:
A collection of R packages including:

- **Ggplot2 –** for creating graphs
- **Dplyr –** for data manipulation
- **Tidy –** for tidying data
- **Readr –** for reading data (csv, tsv…)
- **Purrr –** tools for working with functions and vectors
- **Tibble –** dataframes
- **Stringr –** for working with strings
- **Forcats –** handles R factors for variables

You can install the tidyverse package or each package individually.

You can see more about tidyverse packages at:
https://www.tidyverse.org/

GG Graphics:

- **Gganimate –** for animating graphics
- **Ggridges –** for ridgeline plots
- **Ggmap –** for map plots
- **Ggrepel –** for adding text labels to graphs
- **Ggally –** many additions to ggplot2

For visual and more elaborate descriptions visit:
https://mode.com/blog/r-ggplot-extension-packages/

For a further guide of R packages visit:
https://support.rstudio.com/hc/en-us/articles/201057987-Quick-list-of-useful-R-packages

Keyboard Shortcuts

- Redo – Ctrl+Shift+Z
- Knit – Ctrl+Shift+K
- Restart R Session – Ctrl+Shift+H

Console:

- Interrupt Current Command – Esc
- Clear Console – Ctrl+L

Chunks:

- Insert Chunk – Ctrl+Alt+I
- Run Selected Lines – Ctrl+Enter
- Run Current Chunk – Ctrl-Shift-Enter
- Run Next Chunk – Ctrl+Alt+N
- Run All Chunks Above – Ctrl+Alt+Shift+P
- Run All Chunks – Ctrl+Alt+R

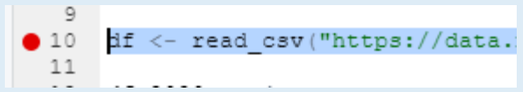
Debugging:

- Execute Next Line – F10
- Step Into Function – Shift+F4
- Continue – Shift+F5
- Stop – Shift+F8
- Toggle Breakpoint – Shift+F9

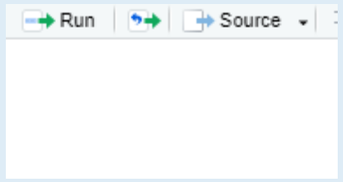
Debugging

In order to debug, you must first create a new script file and save it.

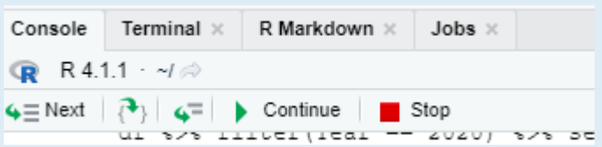
You can then add breakpoints to the code to start debugging. You can click to the left of the line number to add a breakpoint.



After adding breakpoints, click source to debug:



You will then see the debug options appear in the console:



Useful Tip

Add a ? before anything to access its help file:
?ggplot2