Basics

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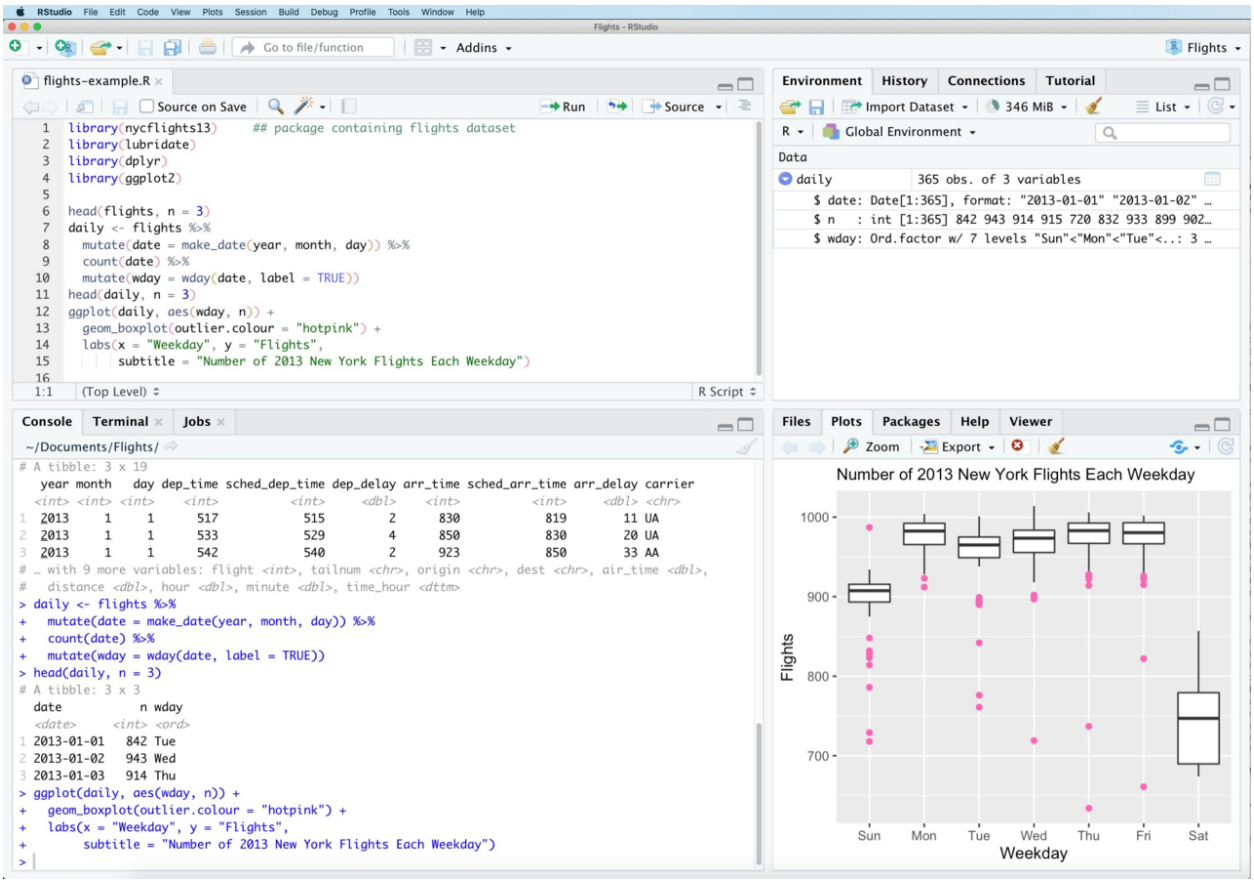
Introduction

Rstudio is a statistical programming language used to create models and plots.

rstudio interface

```
knitr::include_graphics("images/Rstudio_IDE_screenshot.png")
```



Rstudio interface can be broken down into 4 area.

- **Top Left**: The file, you're currently working on.
  - file examples: r script, r markdown, python, and many more.
- **Top Right**: Includes Environment, History, Connection, Git, Tutorial.
  - Environment: This is where all your variables, data, and values are displayed.
  - History: History of code ran.

  - Git: Github connection.
    * Diff: Display the difference between your current file and the file on github.
    * Commit, pull, push: pull up to date file from github. Commit changes on current file to github. Push your committed changes to github.
- **Bottom Left**: Includes Console, Terminal, Render, Background Jobs.
  - Console: The location of where code chucks are ran. Runs rstudio scripts.
  - Terminal: Command terminal
  - Render: Knitting render location.
- **Bottom Right**: Includes Files, Plot, Packages, Help, Viewer, Presentation
  - Files: Display of your files.
  - Plots: Display of your plots.
  - Packages: List of Packages.
  - Help: When help(package_or_function_name) is ran. Display information about the package or function.

Packages

Packages are full of functions and data. Certain packages may help with visualization. To use a package, you'll have to install it and load it. You can install packages from the *Packages* tab on the bottom right. Alternatively, running **install.packages("package_name")** in the console will install your package for you. Note: Installation of package is only required once so it is ideal to comment (#) it out in your Rmarkdown code chunks or rscript. Load the package by running **library(package_name)**. To gain addition information about your package, run **help(package_name)**.

Example: The code below (in **r setup**), display the installation and loading of tidyverse package.

r setup

Ctrl+Alt+i = insert a new code chunk.

{r chunk-name, include=FALSE}
code goes here
include prevents code and results from appearing in the finished file.
However, code in the chunk still runs and results can be used by other chunks.
echo prevents code but results are still displayed.

First chunk of code will be used to setup rstudio packages and knitting settings.

```
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
#install.packages("tidyverse")
library(tidyverse)
```
```

Importing Data

Below is an example of importing csv file and setting it to the variable world_population. CSV can be found **here**.

```
world_population <- read.csv("Data/world_population.csv")
```

Analyzing Data

Standard Operations performed on world_population dataset.

- head(dataset)/tail(dataset): return the first or last parts of an object
- dim retrieve or set the dimension of an object

- dim(x) <- value sets the dimensions of x to “value”.

```
head(world_population)
tail(world_population)
dim(world_population)
summary(world_population)
```

Reference