Introduction to R

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The essentials

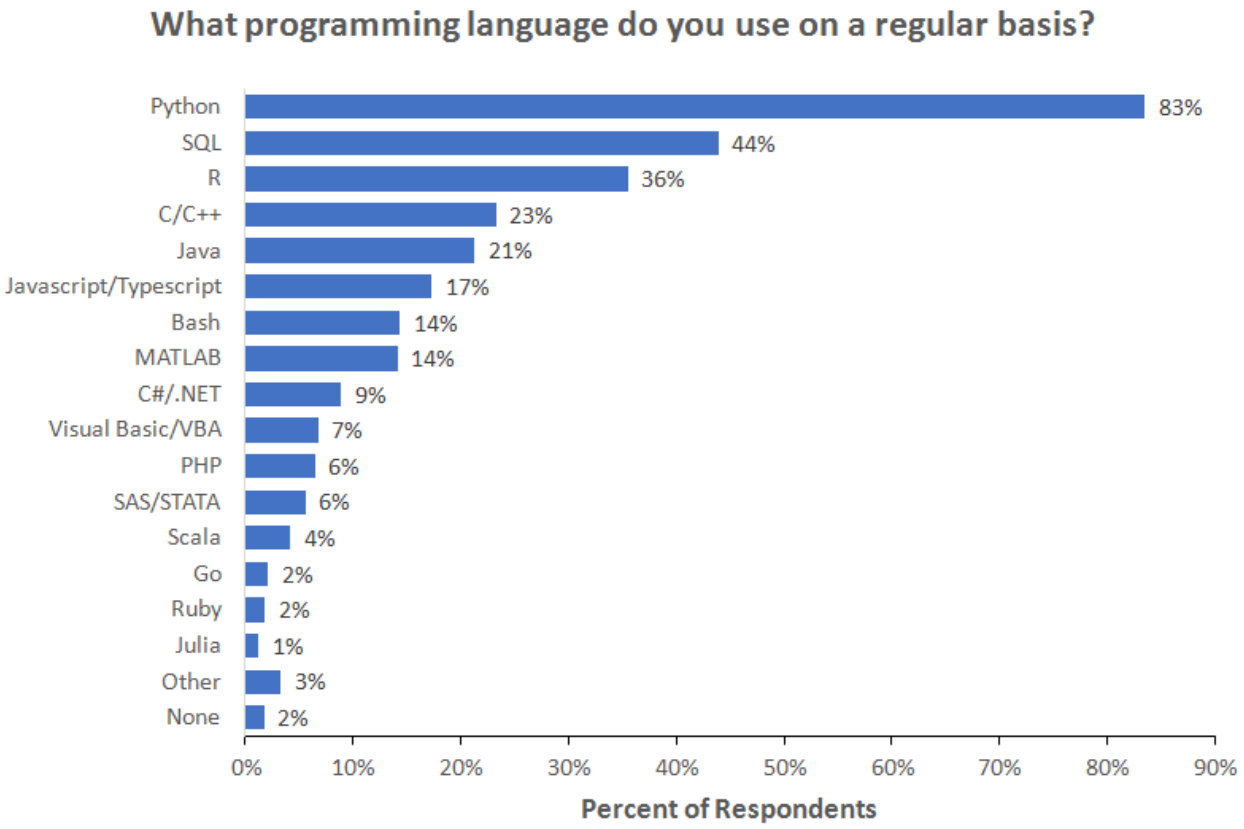
- Install R: https://cran.r-project.org
- Install Rstudio: https://rstudio.com
- Install `tydiverse`: Type this in the R console:

```
install.packages(c("tidyverse","doBy"))
```

A bit of history

- S is the precursor of R developed at Bell labs
- R was created by Ross Ihaka and Robert Gentleman at the University of Auckland, New Zealand
- R was made public in 1993

How popular is R?



Note: Data are from the 2018 Kaggle Machine Learning and Data Science Survey. You can learn more about the study here: http://www.kaggle.com/kaggle/kaggle-survey-2018. A total of 18827 respondents answered the question.

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Packages in R

- Two kinds of packages:
  1. Base packages (preinstalled with R)
  2. Contributed/Third party packages:
     - CRAN (The Comprehensive R Archive Network)
     - GitHub
     - Crantastic!

Let's install some packages

- `tidyverse`
  - ggplot2 → for graphics/plots
  - dplyr → for data manipulation
  - tidyr → for systematic data storage
  - readr → to read rectangular data (e.g. csv)
  - purrr → to manipulate functions, vectors, and loops
  - tibble → to make source code more readable
  - stringr → to work with strings
  - forcats → for handling categorical variables

How to install packages (tidyverse)

1. Form the console

```
install.packages(c("tidyverse","doBy"))
```

2. From the Rstudio packages GUI

   Bottom right quadrant: Packages → Install → type “tidyverse” or “doBy”

How to load packages

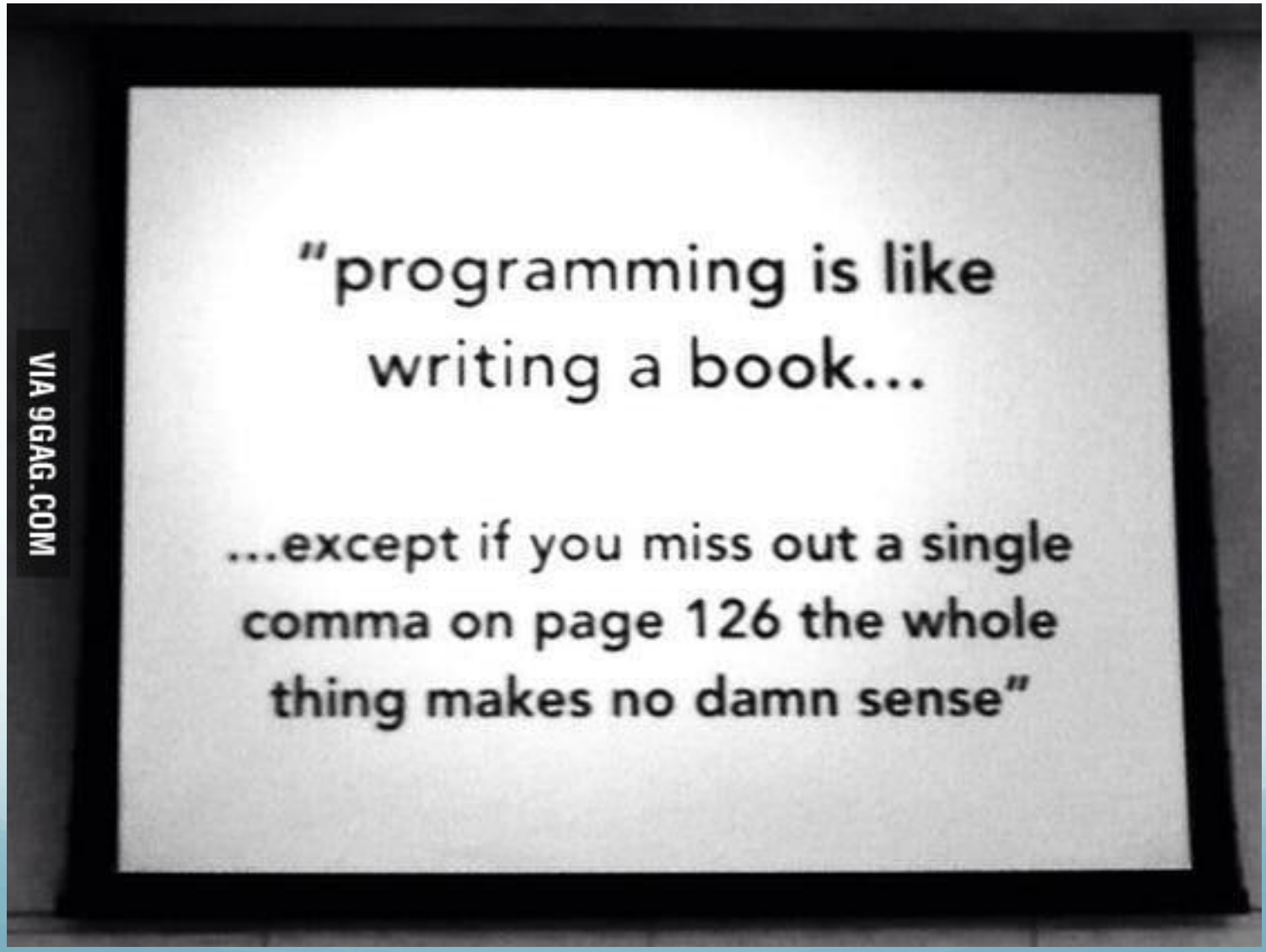
Do it every time you start a session. Two ways:

1. Form the console

```
library(ggplot2)
```

2. From the Bottom right quadrant: Packages → check boxes that you want to use
   - Lets use ggplot 2, **XXX** and **YYY**

Let's start coding!



Rstudio

Open R_1_Basics.R

Run lines of code with command + Enter

Rstudio

Open R_2_CleanData.R

Rstudio

Open R_3_BoxPlots.R

Rstudio

Open R_4_CurveFitting.R

Rstudio

Open R_5_Histograms.R