

## Applications:

- 1 Machine learning
- 2 Data mining
- 3 Statistical analysis
- 4 Data visualisation
- 5 Modeling (all types)

## R VS Python

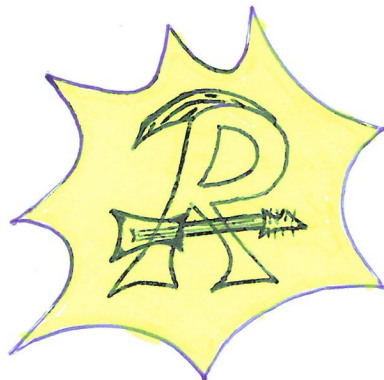
- 1 Best practice is to learn both!
- 2 P. is more universal & efficient, but R. has better visualization



- 1 Has preloaded data sets: data()
- 2 Open-source: free & popular
- 3 Many packages: no reinvent the wheel
- 4 Super graphing capabilities
- 5 Easy statistics

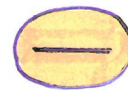
## Data Structures

- 1 Atomic vector
- 2 list
- 3 matrix
- 4 data frame
- 5 factors
- 6 xts
- 7 data table



## Useful Packages

- |                        |                                  |                        |
|------------------------|----------------------------------|------------------------|
| 1 ggplot2              | 9 DT                             | 19 Rcpp                |
| 2 performanceAnalytics | 10 RCrawler (use with R-64)      | 20 data.table          |
| 3 Dplyr                | 11 Caret                         | 21 XML, httr, jsonlite |
| 4 Esquisse             | 12 RMarkdown, xtable             | 22 Devtools            |
| 5 Shiny                | 13 Leaflet (maps)                | 23 stringr             |
| 6 Lubridate            | 14 Janitor                       |                        |
| 7 knitr                | 15 Quantmod                      |                        |
| 8 MLr                  | 16 RMySQL, RPostgresSQL, RSQLite |                        |
|                        | 17 car                           |                        |
|                        | 18 xts, zoo                      |                        |
|                        |                                  | ROracle                |



- 1 Memory & Performance: not super efficient
- 2 Open source: packages could be average quality & inconsistent
- 3 Not secure: external resources should be used for that