

Managing Data Frames with dplyr

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The data frame is a key data structure in statistics and in R.

- ▶ There is one observation per row
- ▶ Each column represents a variable or measure or characteristic
- ▶ Primary implementation that you will use is the default R implementation
- ▶ Other implementations, particularly relational databases systems

dplyr

- ▶ Developed by Hadley Wickham of RStudio
- ▶ An optimized and distilled version of `plyr` package (also by Hadley)
- ▶ Does not provide any “new” functionality per se, but **greatly** simplifies existing functionality in R
- ▶ Provides a “grammar” (in particular, verbs) for data manipulation
- ▶ Is **very** fast, as many key operations are coded in C++

dplyr Verbs

- ▶ `select`: return a subset of the columns of a data frame
- ▶ `filter`: extract a subset of rows from a data frame based on logical conditions
- ▶ `arrange`: reorder rows of a data frame
- ▶ `rename`: rename variables in a data frame
- ▶ `mutate`: add new variables/columns or transform existing variables
- ▶ `summarise` / `summarize`: generate summary statistics of different variables in the data frame, possibly within strata

There is also a handy `print` method that prevents you from printing a lot of data to the console.

dp1yr Properties

- ▶ The first argument is a data frame.
- ▶ The subsequent arguments describe what to do with it, and you can refer to columns in the data frame directly without using the \$ operator (just use the names).
- ▶ The result is a new data frame
- ▶ Data frames must be properly formatted and annotated for this to all be useful