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summarizing data with dplyr



RAFAEL IRIZARRY: An important part of exploratory data analysis

is summarizing data.

We've already learned about the average and the standard deviation, two summary

statistics that provide all

Video

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Textbook link

This video corresponds to the [textbook section on summarizing data](#).

Key points

- `summarize()` from the **dplyr/tidverse** package computes summary statistics from the data frame. It returns a data frame whose column names are defined within the function call.
- `summarize()` can compute any summary function that operates on vectors and returns a single value, but it cannot operate on functions that return multiple values.
- Like most **dplyr** functions, `summarize()` is aware of variable names within data frames and can use them directly.

Code



```
library(tidyverse)
library(dslabs)
data(heights)

# compute average and standard deviation for males
s <- heights %>%
  filter(sex == "Male") %>%
  summarize(average = mean(height), standard_deviation = sd(height))

# access average and standard deviation from summary table
s$average
s$standard_deviation

# compute median, min and max
heights %>%
  filter(sex == "Male") %>%
  summarize(median = median(height),
            minimum = min(height),
            maximum = max(height))

# alternative way to get min, median, max in base R
quantile(heights$height, c(0, 0.5, 1))

# generates an error: summarize can only take functions that return a scalar
heights %>%
  filter(sex == "Male") %>%
  summarize(range = quantile(height, c(0, 0.5, 1)))
```

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