

# car\_viz-2.R

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```
library(tidyverse)

## -- Attaching packages ----- tidyverse 1.3.1 --

## v ggplot2 3.3.5      v purrr 0.3.4
## v tibble 3.1.4       v dplyr 1.0.7
## v tidyr 1.1.3        v stringr 1.4.0
## v readr 2.0.1        v forcats 0.5.1

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()

# call built-in data mtcars.
data(mtcars)

# Select only car models where mpg<20
mtcars_mpg2 <- mtcars[mtcars$mpg < 20,]

# Reduce the variables to mpg, cyl, disp, hp, gears
mtcars_mpg2 <- mtcars_mpg2[, c(1,2,3,4,10)]

# read the R file hand_functions.R so that it can be used
# notice that with echo = TRUE
source(file = "hand_functions(2).R", echo = TRUE)

##
## > sum_special <- function(df_x) {
## +   try(if (!is.data.frame(df_x))
## +     stop("Input data must be a data frame."))
## +   sp_means <- apply(df_ .... [TRUNCATED]

# Now use the function from hand_functions.R

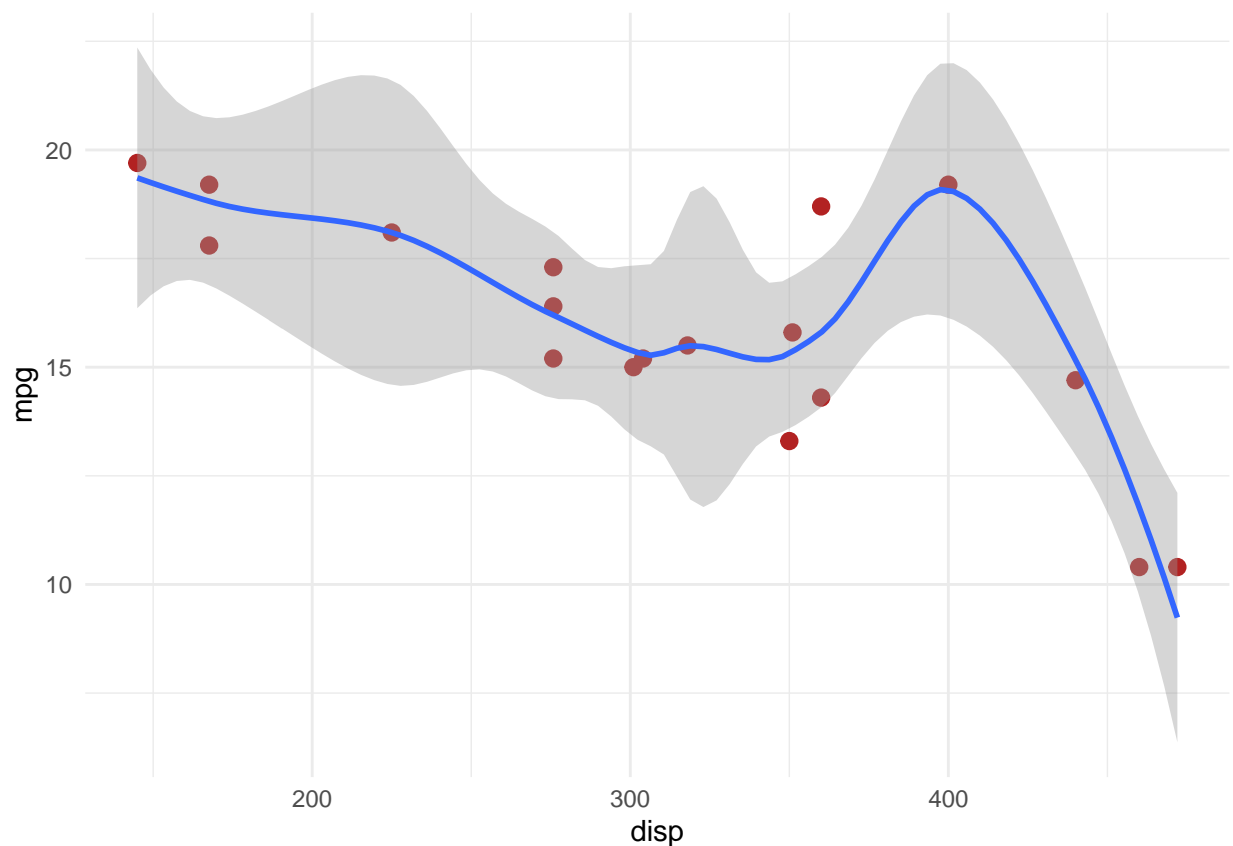
sp_out <- sum_special(mtcars_mpg2)

# library(esquisse)
# use ggplot() to declare the mtcars_mpg2 data for a graphic
```

```
# use geom_point to create a scatterplot with the bullet shape, 4L size and a specific color
# use geom_smooth to help to see the pattern in the presence of overplotting
# esquisser(data = mtcars_mpg2, viewer = "browser")
```

```
ggplot(mtcars_mpg2) +
  aes(x = disp, y = mpg) +
  geom_point(shape = "bullet", size = 4L, colour = "#B22222") +
  geom_smooth(span = 0.5) +
  theme_minimal()
```

```
## 'geom_smooth()' using method = 'loess' and formula 'y ~ x'
```



```
# note that this boxplot cannot be made with esquisse() unless
# use geom_boxplot to display the distribution of the continuous variable, -
# - which visualizes the median, two hinges, and two whiskers, and an outlier
# the data is adjusted. What adjustment is needed?
# the adjustment is changing one of data inputs in the ggplot and making it as a factor
```

```
ggplot(mtcars_mpg2, aes(x=as.factor(cyl), y=mpg)) +
  geom_boxplot(fill="slateblue", alpha=0.2) +
  xlab("cyl")
```

