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()
```

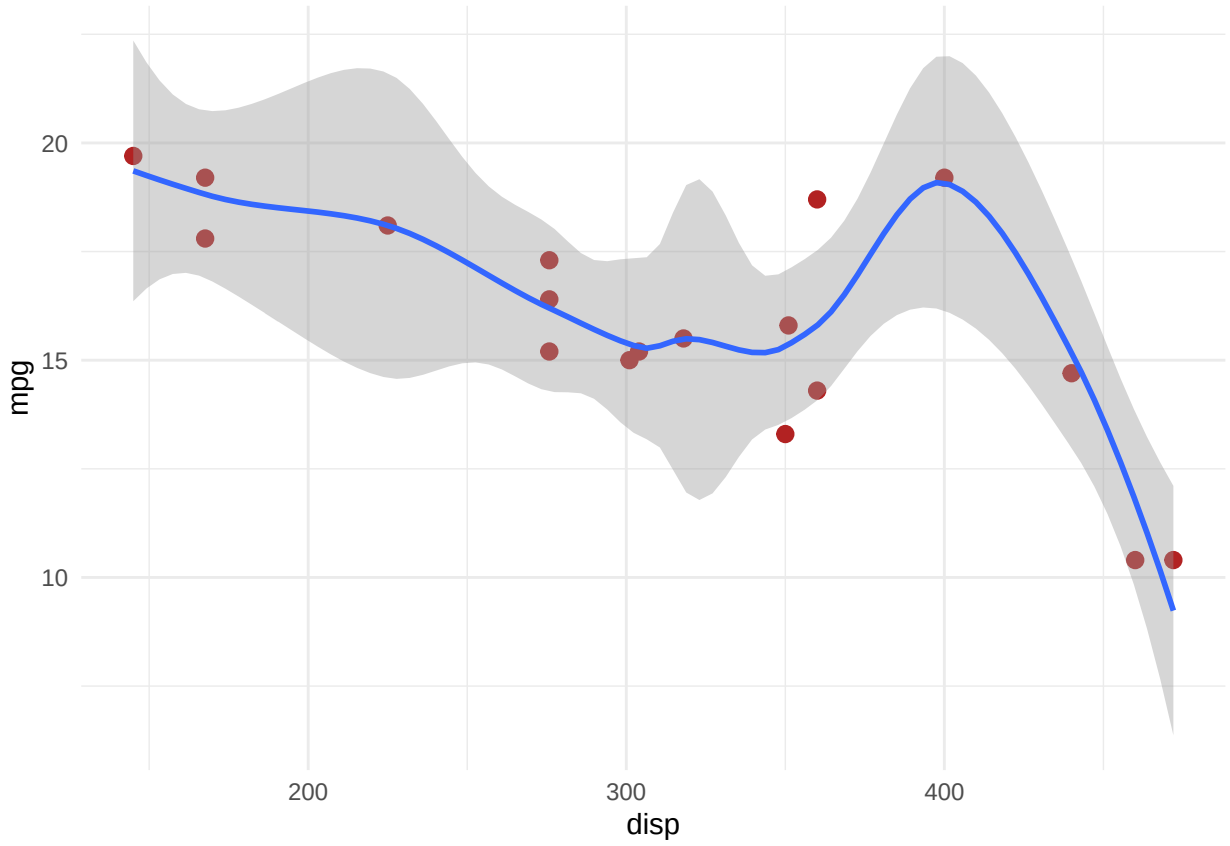
```
# call built-in data mtcars.
data(mtcars)

# 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]
```

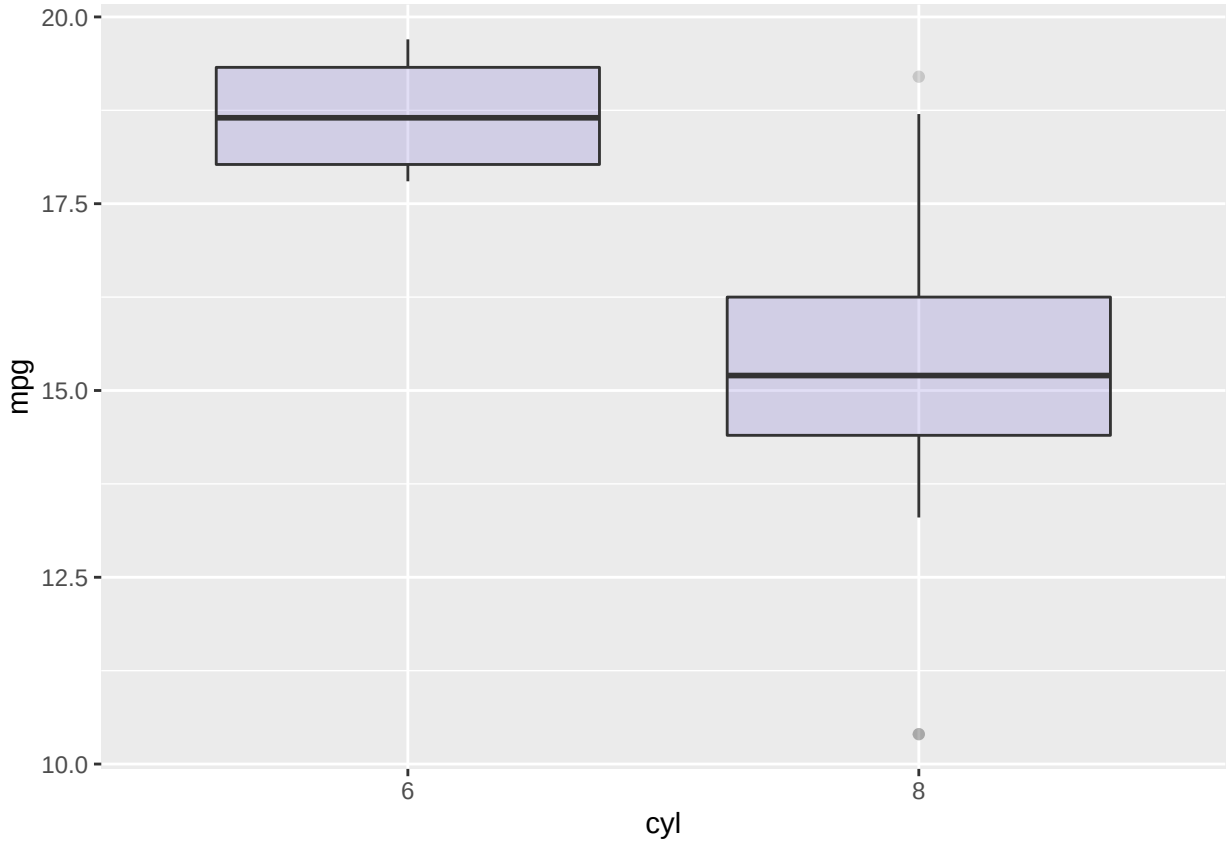
```
# Now use the function from hand_functions.R

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 helping to see the patternin 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
# the data is adjusted. What adjustment is needed?

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




```
# use geom_boxplot to display the distribution of the continuous variable, -
# - which visualizeses the median, two hinges, and two whiskers, and an outlier
# the adjustment is changing the variable "cyl" to a classification variable,
# so we can make the boxplot with esquisse()

# esquisser(data = mtcars_mpg2, viewer = "browser")
```