

Assignment1PDFversion

Yuli Jin

2021/9/22

describe the data and discuss what you have learned in this very simple exploration.

In this document, I learned how to use tidyverse to handle the dataset and use ggplot to display the graph I need. Also, source is a very powerful function to use R script file in RMD. For the description of the data, please see the “#” in the chunk.

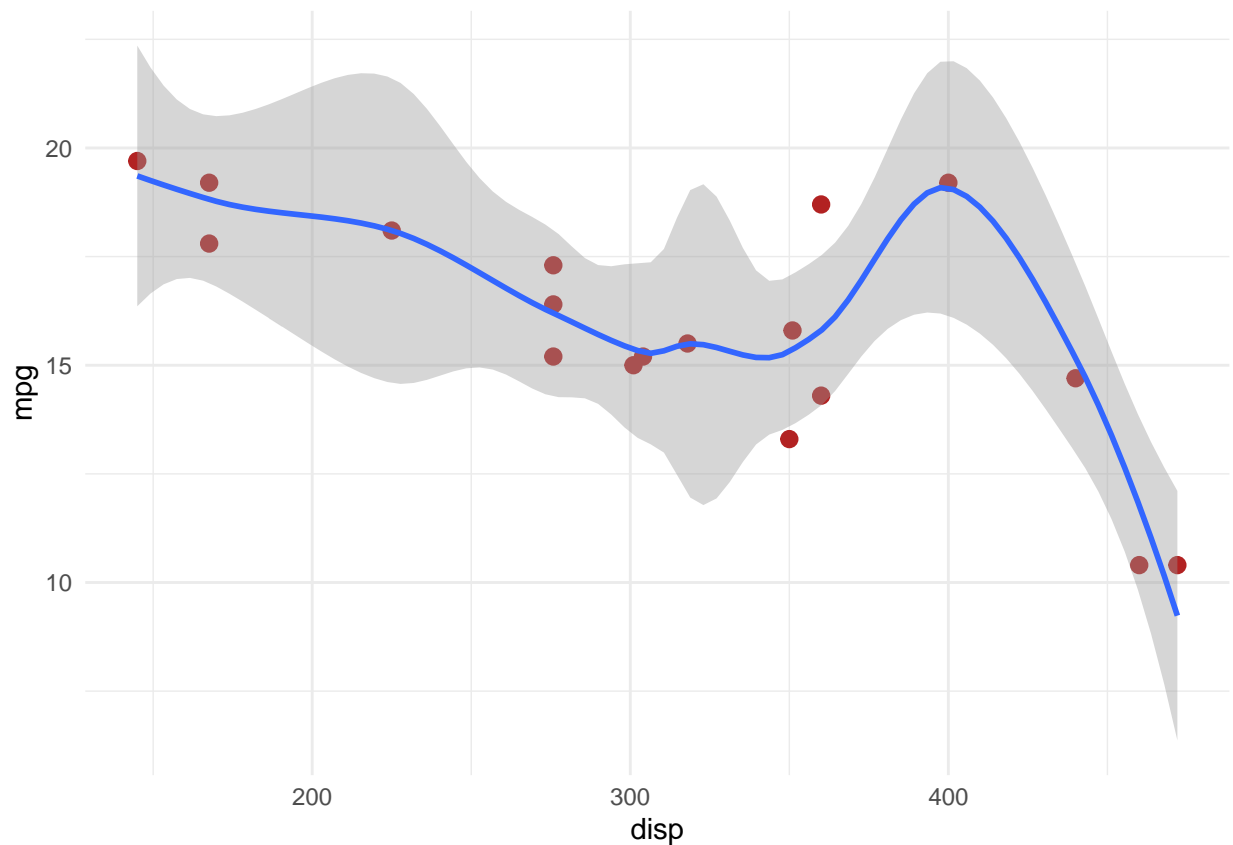
```
#The data was extracted from the 1974 Motor Trend US magazine,  
#and comprises fuel consumption and 10 aspects of automobile design  
#and performance for 32 automobiles (1973--74 models).  
library(tidyverse)  
  
## -- Attaching packages ----- tidyverse 1.3.1 --  
  
## v ggplot2 3.3.5      v purrr   0.3.4  
## v tibble  3.1.3      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.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)
#
# 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")
```

