HomeworkRmarkdown

Fluke siranon

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.4.4     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.0
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become error
```

```
head(mpg)
```

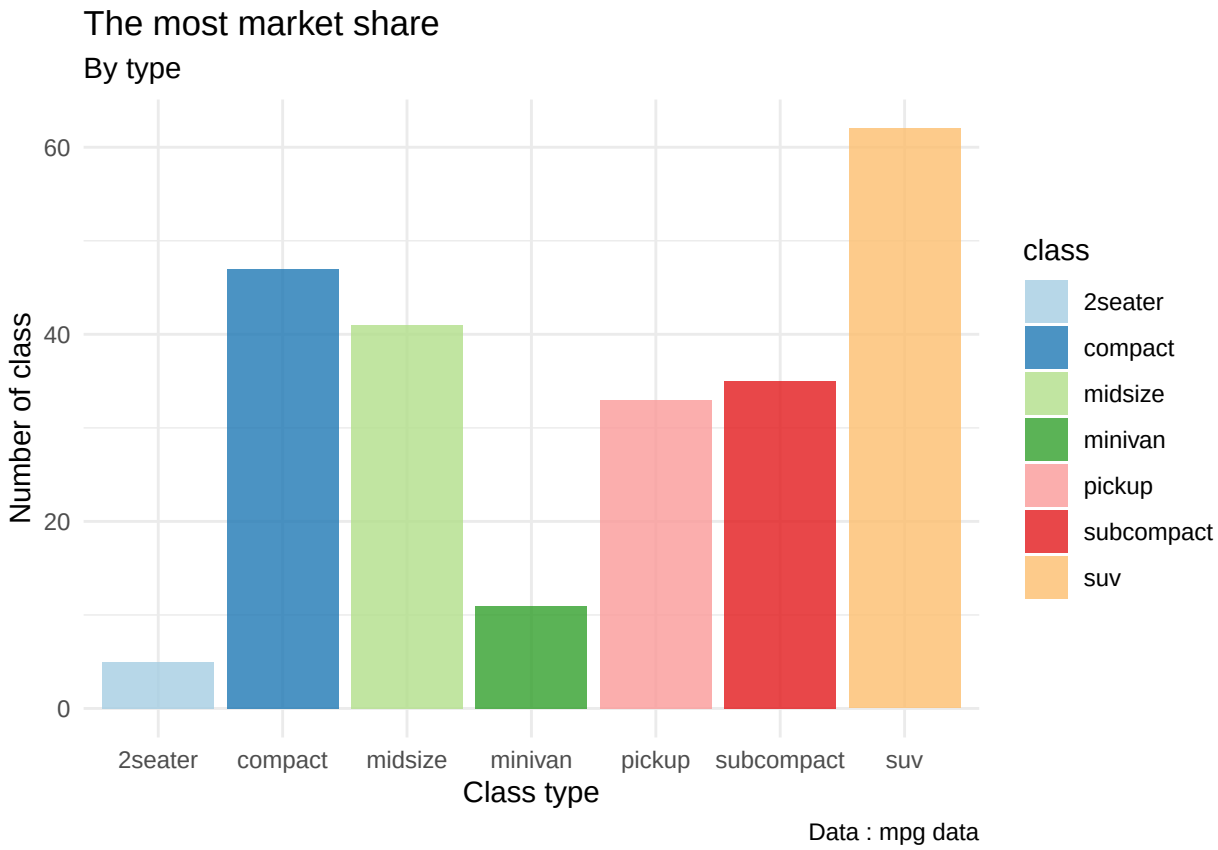
```
## # A tibble: 6 x 11
##   manufacturer model displ  year   cyl trans      drv     cty   hwy fl    class
##   <chr>        <chr> <dbl> <int> <int> <chr>      <chr> <int> <int> <chr> <chr>
## 1 audi         a4      1.8  1999     4 auto(l5)   f        18    29 p     compa~
## 2 audi         a4      1.8  1999     4 manual(m5) f        21    29 p     compa~
## 3 audi         a4      2    2008     4 manual(m6) f        20    31 p     compa~
## 4 audi         a4      2    2008     4 auto(av)   f        21    30 p     compa~
## 5 audi         a4      2.8  1999     6 auto(l5)   f        16    26 p     compa~
## 6 audi         a4      2.8  1999     6 manual(m5) f        18    26 p     compa~
```

Details : manufacturer : manufacturer mane model : model name displ : engine displacement, in litres year : year of munufacture cyl : number of cylinders trans : type of transmission drv : the type of drive train, where f = front-wheel drive, r = rear wheel drive, 4 = 4wd cty : city miles per gallon hwy : highway miles per gallon

Creat Charts

1.Market Share

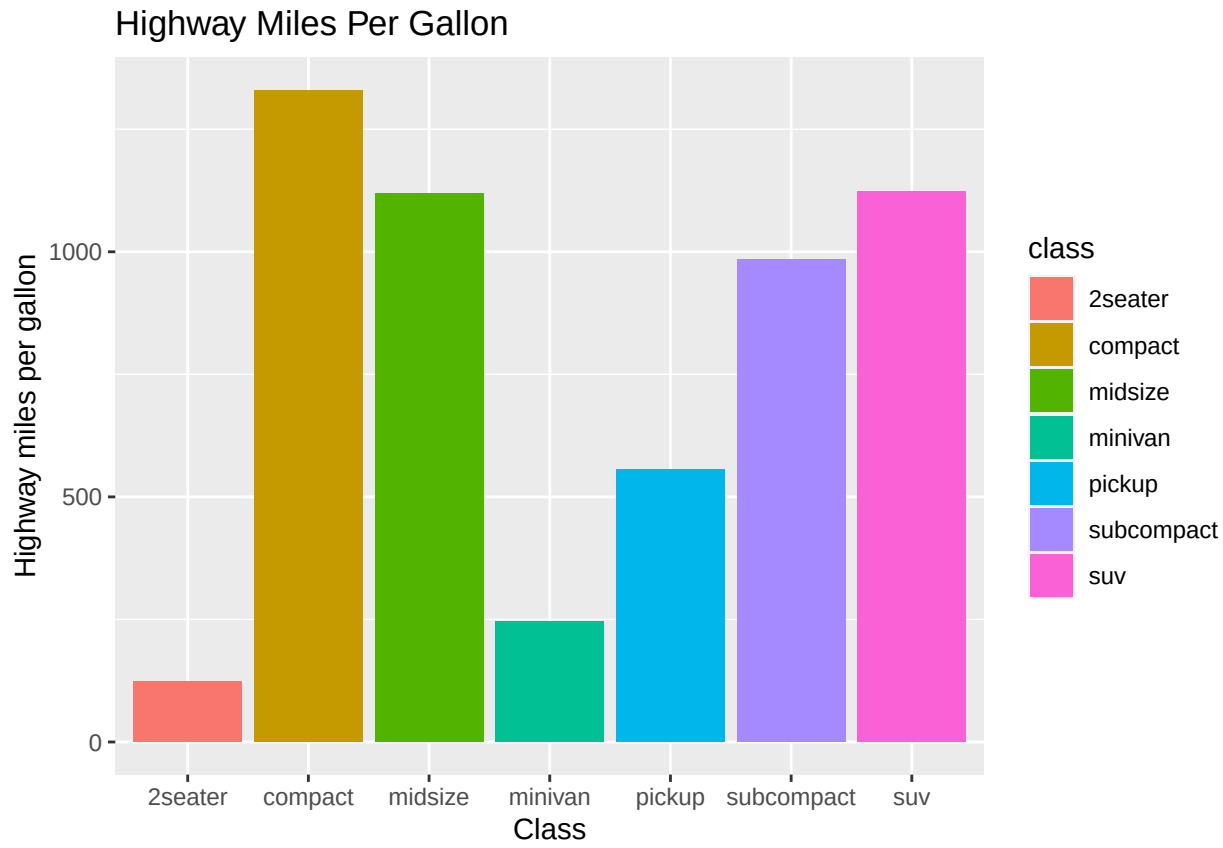
```
ggplot(mpg, aes(class, fill=class)) +
geom_bar(alpha=.8) +
labs(
title="The most market share",
subtitle = "By type",
caption = "Data : mpg data",
x="Class type",
y="Number of class"
) +
theme_minimal() +
scale_fill_brewer(palette="Paired")
```



"Fig.1 displays a graph indicating that the SUV has the highest market share among car types."

2. Model/Mile per gallon

```
library(ggplot2)
ggplot(mpg, aes(x = class, y = hwy, fill = class)) +
  geom_bar(stat = "identity") +
  labs(x = "Class", y = "Highway miles per gallon", title = "Highway Miles Per Gallon")
```



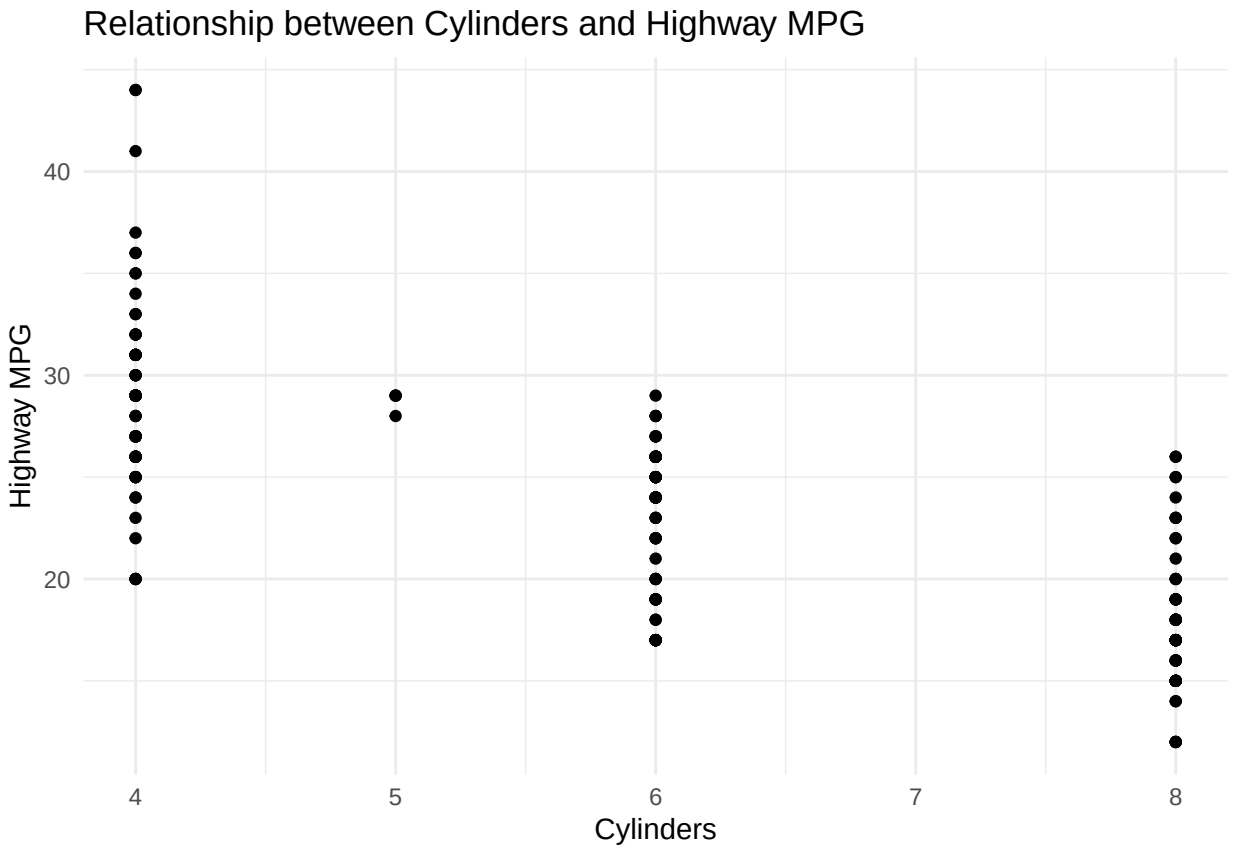
"Fig.2 shown that most car type that use hwy is compact car"

3. Scatter plot between cylinder and mpg

```
library(ggplot2)

d_cyl <- ggplot(mpg, aes(cyl, hwy)) +
  geom_point() +
  labs(x = "Cylinders",
       y = "Highway MPG",
       title = "Relationship between Cylinders and Highway MPG") +
  theme_minimal()

d_cyl
```



"Fig.3 illustrates the relationship between highway MPG and the number of cylinders in the vehicle."

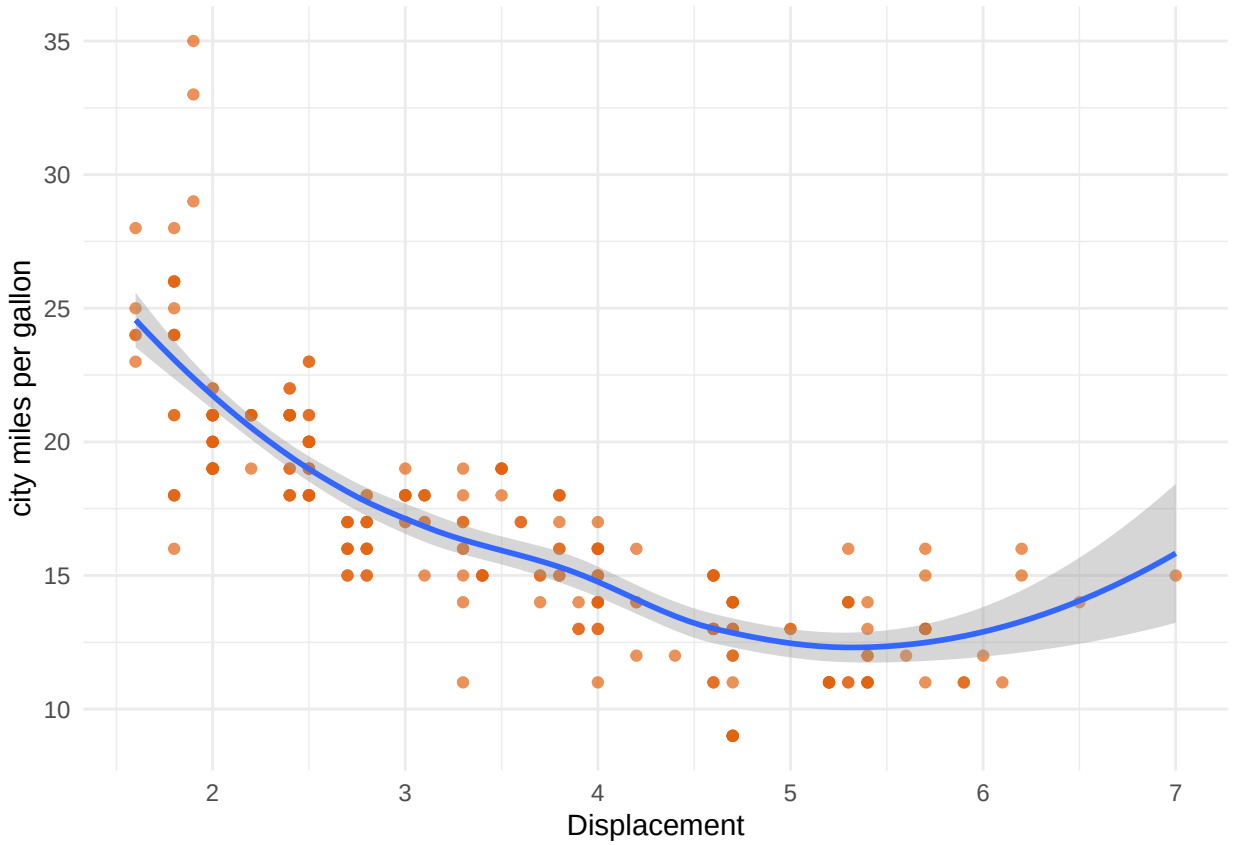
4.Scatter plot between engine displacement in litres and city miles per gallon

```
library(ggplot2)

d_displ <- ggplot(mpg %>%
                    sample_n(234) %>%
                    filter(displ <= 10),
                  aes(x = displ, y = cty
                   )) +   # Changed y variable to 'hwy' as an example
  geom_point(alpha = 0.7, color = "#E26310") +
  geom_smooth(method = "loess", se = TRUE) +
  labs(x = "Displacement", y = "city miles per gallon") +  # Updated y-axis label
  theme_minimal()

print(d_displ)
```

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



"Fig.4 displays engine displacement in liters against city miles per gallon."