566 Assignment 1

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```
# Load necessary library
library(ggplot2)



# Create the plot
ggplot(mpg, aes(x = displ, y = hwy)) +
  geom_point(aes(color = factor(cyl))) +  # Scatter plot colored by number of
cylinders
  geom_smooth(method = "loess", se = TRUE, color = "black", size = 1) +  #
Curvy line with confidence interval for all data
  geom_smooth(aes(color = factor(cyl)), method = "lm", se = FALSE, linetype =
"dashed") +  # Straight lines fit to each group
  geom_smooth(method = "loess", se = FALSE, color = "black", linetype =
"solid", size = 1) +  # Curvy line for all data (without CI)
  scale_color_manual(values = c("4" = "red", "6" = "green", "8" = "blue")) +
# Set colors for cylinders
  labs(title = "Exploration of MPG Dataset",
       x = "Displacement (liters)",
       y = "Highway mileage",
       color = "Number of cylinders") +
  theme_minimal() +
  theme(
    panel.background = element_rect(fill = "grey85", color = NA),
    plot.background = element_rect(fill = "grey85", color = NA),
    panel.grid.major = element_line(color = "white"),
    panel.grid.minor = element_line(color = "white"),
    axis.ticks = element_blank(),
    axis.text = element_text(color = "black", face = "bold")
  )
```

```
## Warning: Using `size` aesthetic for lines was deprecated in ggplot2 3.4.0.
## ℹ Please use `linewidth` instead.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```

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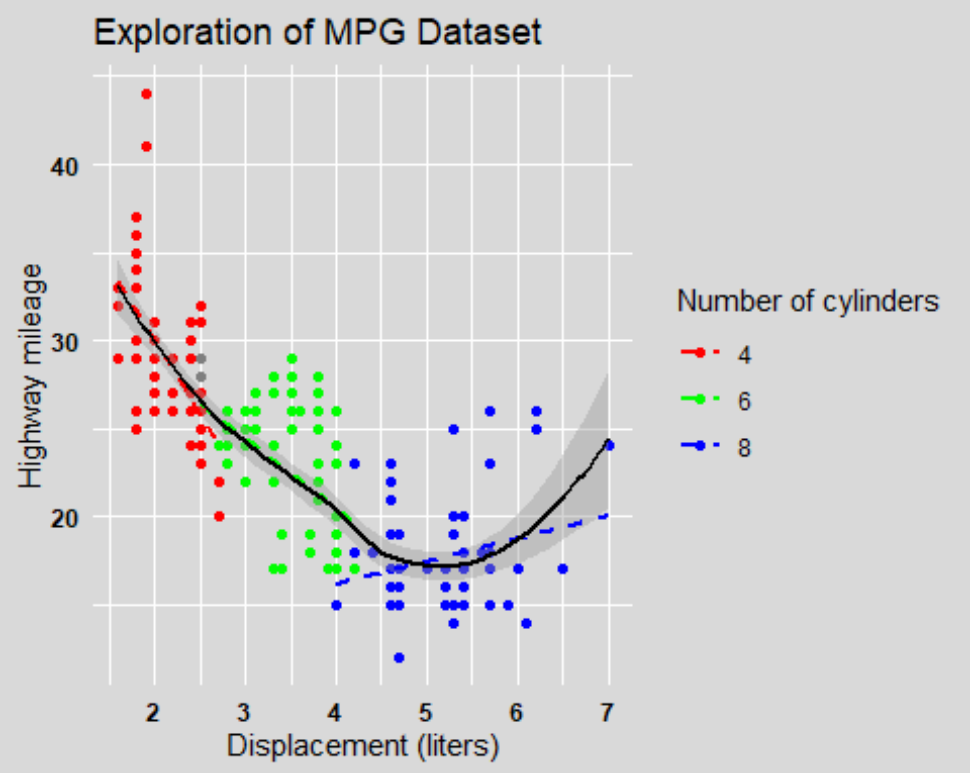
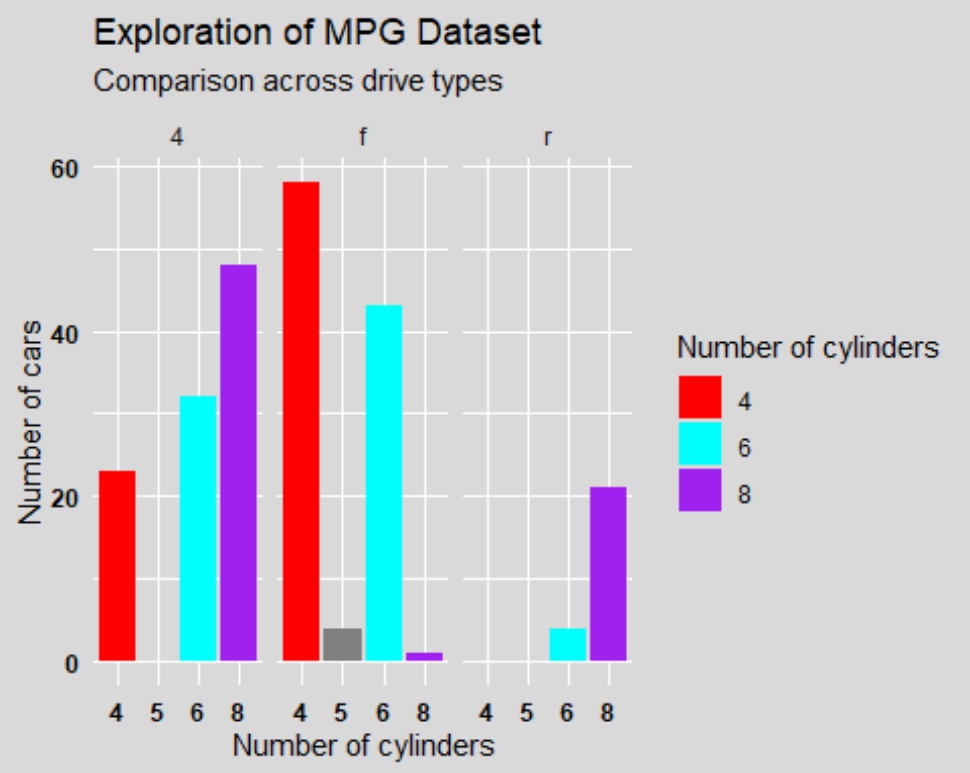




```r
# Create the plot
ggplot(mpg, aes(x = factor(cyl), fill = factor(cyl))) +
  geom_bar() +  # Bar plot
  facet_wrap(~ drv) +  # Facet by drive type
  labs(title = "Exploration of MPG Dataset",
       subtitle = "Comparison across drive types",
       x = "Number of cylinders",
       y = "Number of cars",
       fill = "Number of cylinders") +
  scale_fill_manual(values = c("4" = "red", "6" = "cyan", "8" = "purple")) +
# Set colors
  theme_minimal() +
  theme(
    panel.background = element_rect(fill = "grey85", color = NA),
    plot.background = element_rect(fill = "grey85", color = NA),
    strip.background = element_rect(fill = "grey85", color = NA),
    panel.grid.major = element_line(color = "white"),
    panel.grid.minor = element_line(color = "white"),
    axis.ticks = element_blank(),
    axis.text = element_text(color = "black", face = "bold")
  )
```


Exploration of MPG Dataset
Comparison across drive types
4
f
r
60
40
20
0
Number of cars
4 5 6 8 4 5 6 8 4 5 6 8
Number of cylinders
Number of cylinders
4
6
8