HW_data_viz

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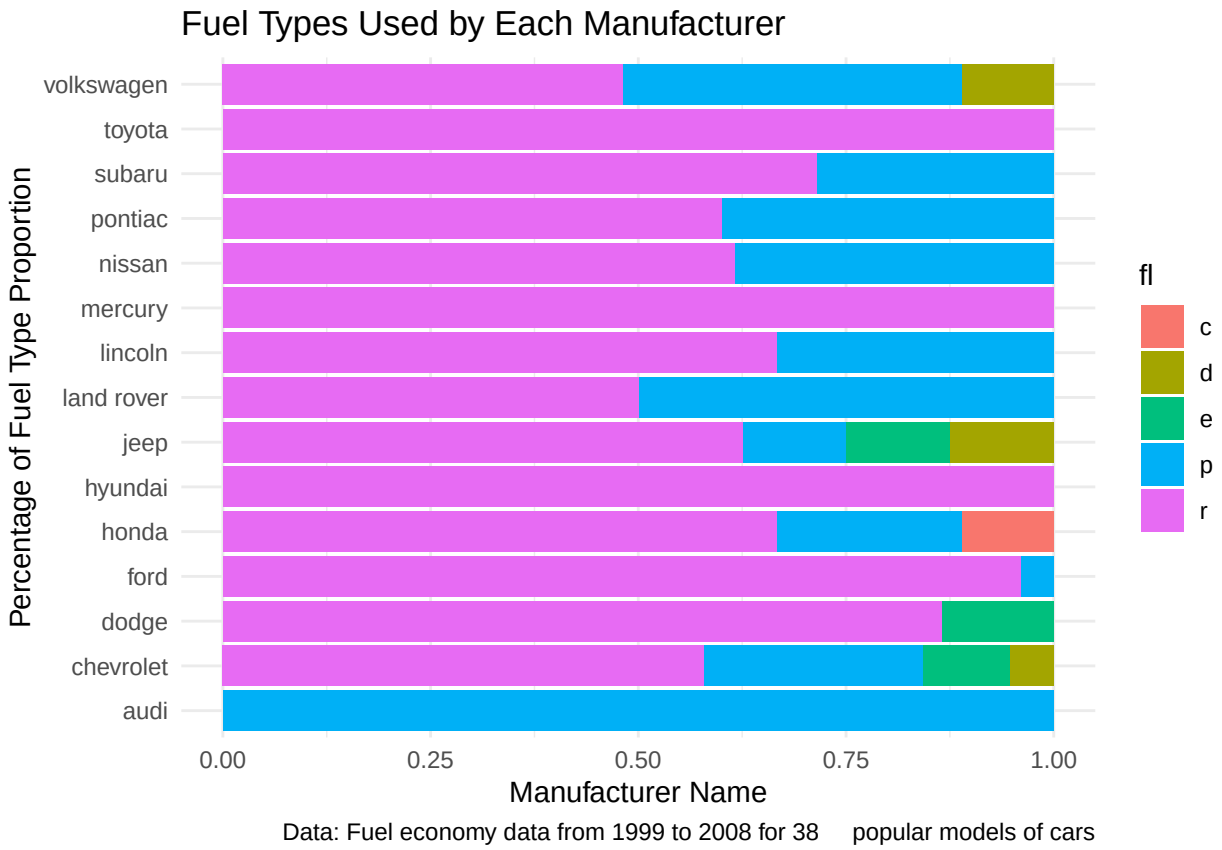
##Explore Data

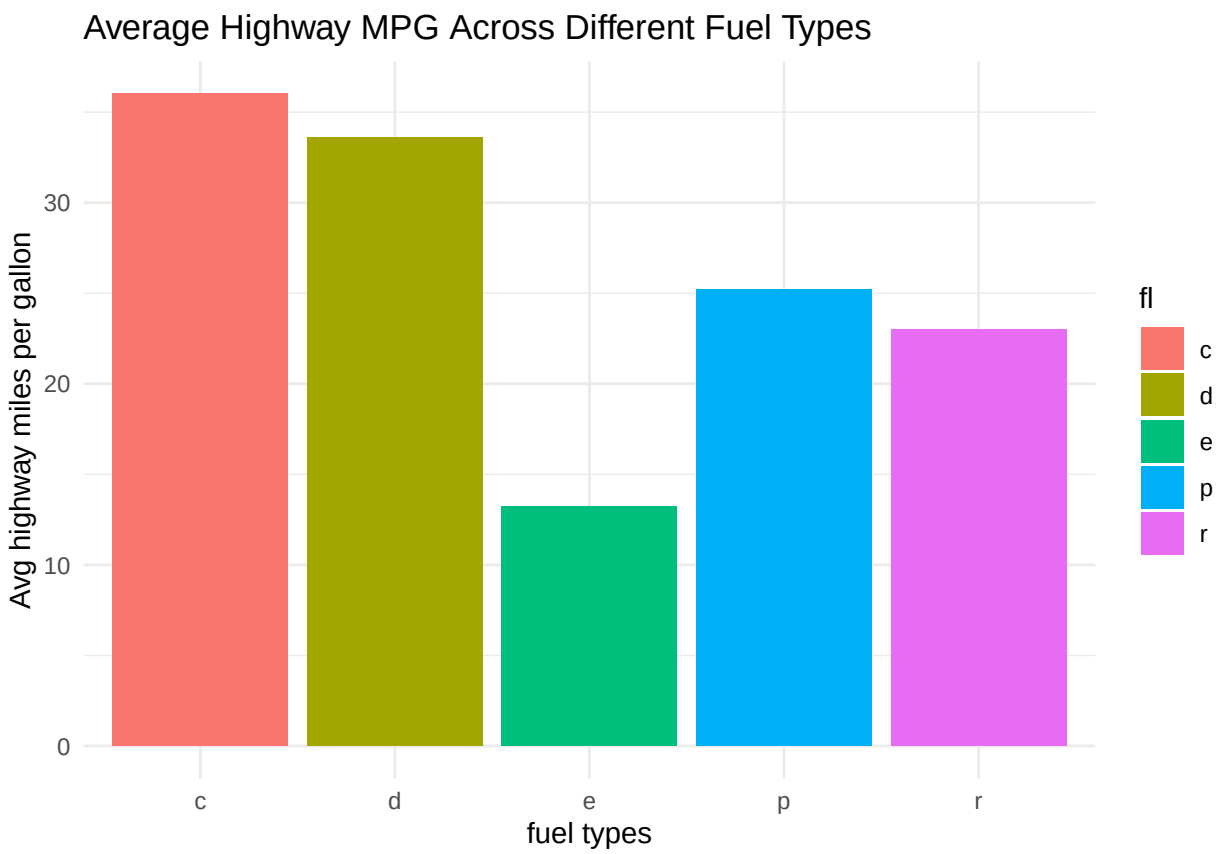
```
## # A tibble: 6 x 11
##   manufacturer model displ  year   cyl trans      drv     cty   hwy fl    class
##   <chr>        <chr> <dbl> <int> <int> <chr>      <chr> <int> <int> <chr> <chr>
## 1 audi         a4      1.8  1999     4 auto(l5)   f        18    29 p     compa~
## 2 audi         a4      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~
```

```
##1 chart : The chart displays the percentage of fuel types used by each manufacturer.
ggplot(data = mpg,
       mapping = aes(y = manufacturer,fill = fl))+
      geom_bar(position= "fill") +
      theme_minimal() +
      labs(
          title = "Fuel Types Used by Each Manufacturer",
          caption = "Data: Fuel economy data from 1999 to 2008 for 38     popular models of cars",
          x = "Manufacturer Name",
          y = "Percentage of Fuel Type Proportion") +
      theme_minimal()
```



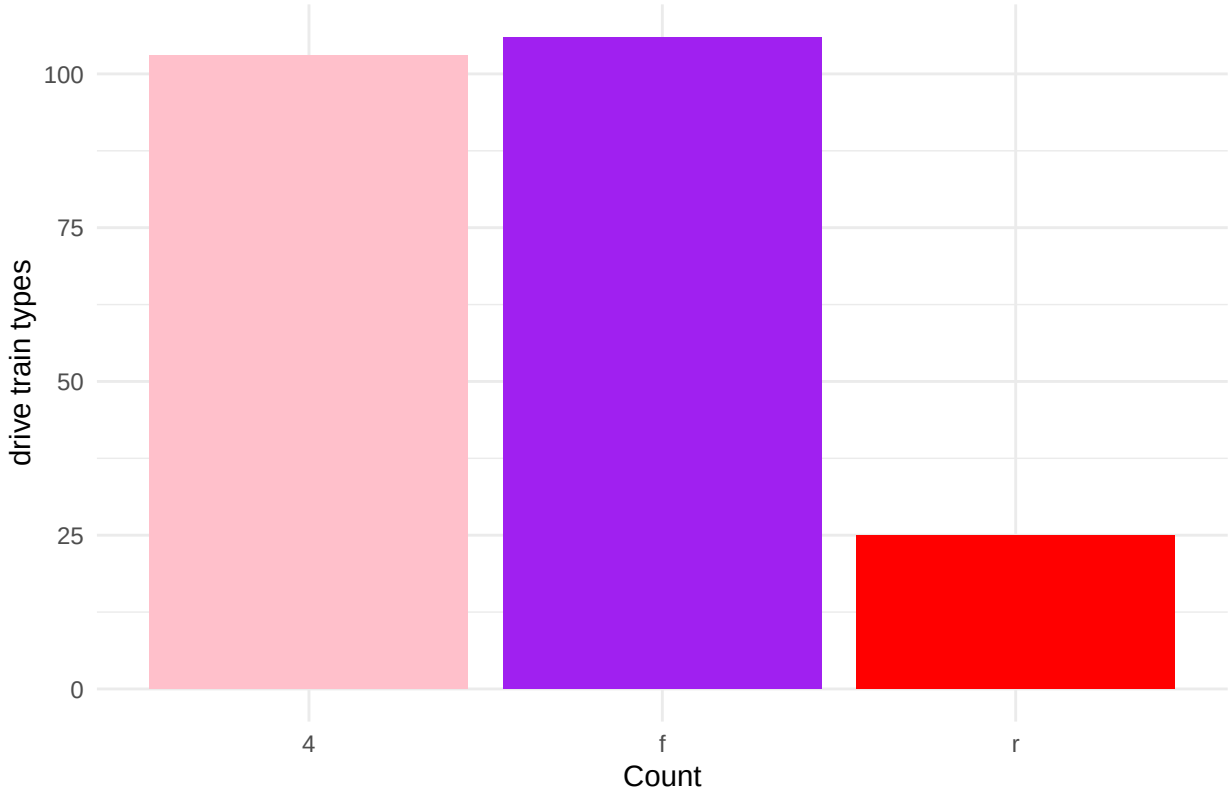

```
## 2 chart : Average Highway MPG Across Different Fuel Types
m1 <- mpg %>%
        group_by(fl) %>%
        summarise( avg_hwy = mean(hwy))

  ggplot(m1,aes(x = fl, y = avg_hwy,fill = fl ))+
  geom_col() +
  labs(
    title = "Average Highway MPG Across Different Fuel Types",
    x = "fuel types",
    y = "Avg highway miles per gallon") +
  theme_minimal()
```



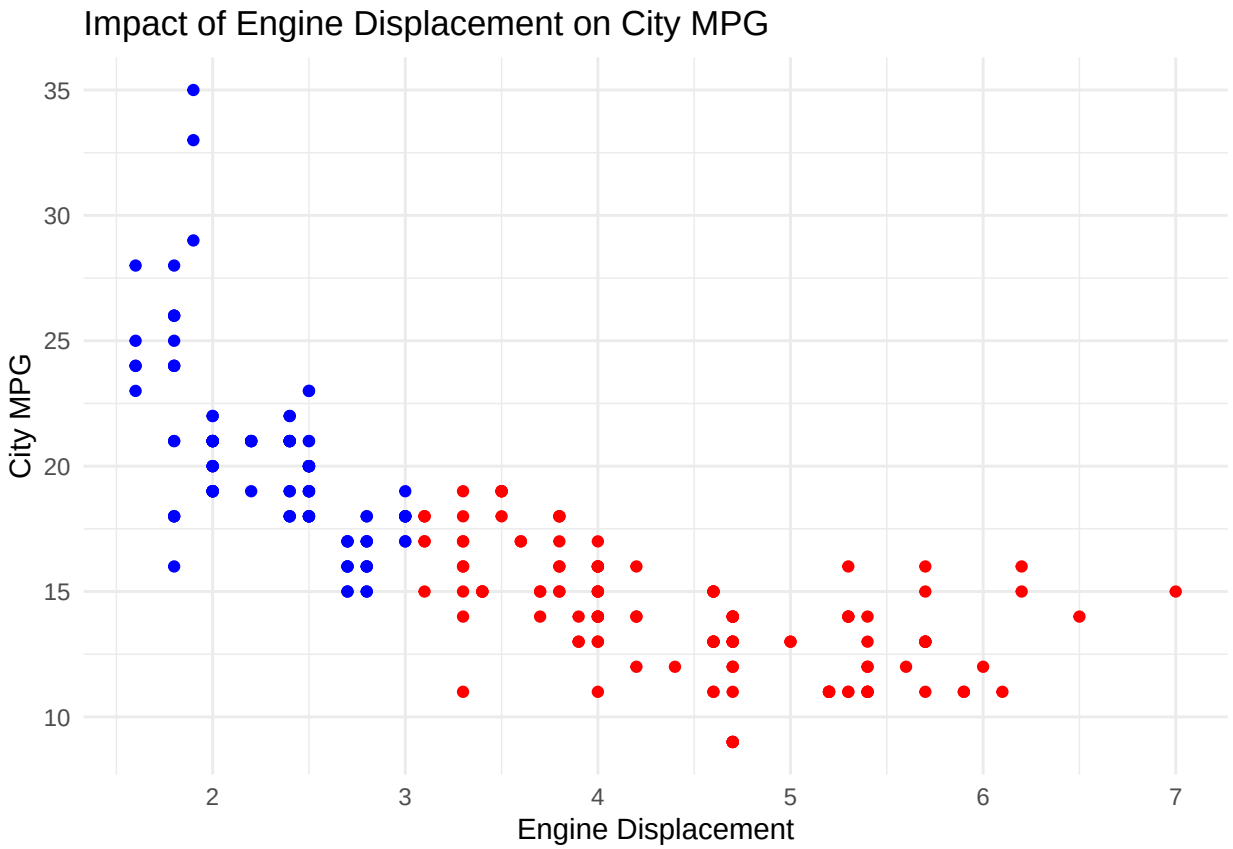

```
## 3 chart : Calculate the distribution of drive train types.
mpg %>%
  count(drv) %>%
  ggplot( . , aes(x = drv , y = n)) +
  geom_col(fill = c("pink","purple","red")) +
  theme_minimal() +
  labs(title = "Calculate the distribution of drive train types.",
        x = "Count",
        y = "drive train types")
```

Calculate the distribution of drive train types.



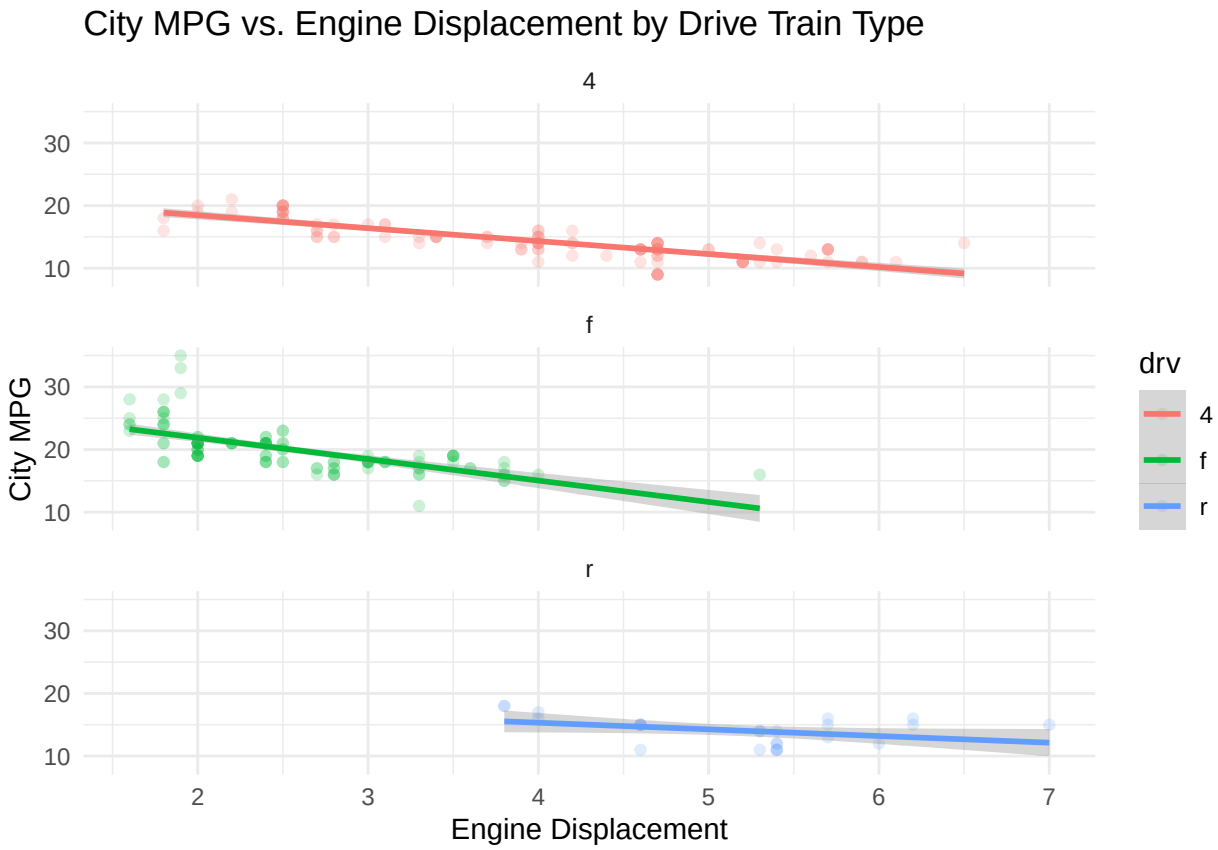

```
## chart 4 : Impact of Engine Displacement on City MPG
p1 <- mpg %>% filter(displ > 3)
p2 <- mpg %>% filter(displ <=3)

ggplot()+
  theme_minimal() +
  geom_point(data = p1, aes(displ,cty), color = "red") +
  geom_point(data = p2, aes(displ,cty), color = "blue")+
  labs(
    title = "Impact of Engine Displacement on City MPG",
    x = "Engine Displacement",
    y = "City MPG"
  )
```




```
##5 chart : City MPG vs. Engine Displacement by Drive Train Type
ggplot(mpg ,aes(x= displ, y = cty, col = drv))+
  geom_point(alpha = 0.2)+
  geom_smooth(method = "lm")+
  theme_minimal() +
  facet_wrap(~drv,ncol = 1) +
  labs(
    title = "City MPG vs. Engine Displacement by Drive Train Type",
    x = "Engine Displacement",
    y = "City MPG"
  )
```

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


City MPG vs. Engine Displacement by Drive Train Type
4
f
r
30
20
10
City MPG
2
3
4
5
6
7
Engine Displacement
drv
4
f
r