

R Practice - ggplot2 and mpg

Try to recreate these plots using the ggplot2 plotting library

Accessing the data

Make sure you load the data and ggplot2 by loading the tidyverse library

```
library(tidyverse)
```

If you get the error "Error in library(tidyverse) : there is no package called 'tidyverse'", then make sure to install the package with

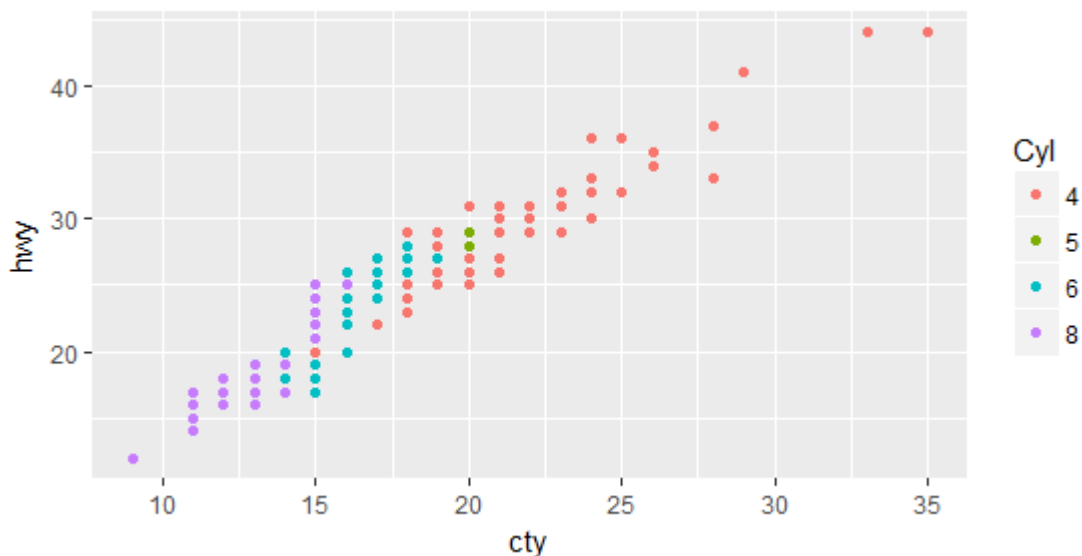
```
install.packages("tidyverse")
```

And then try to load the library again.

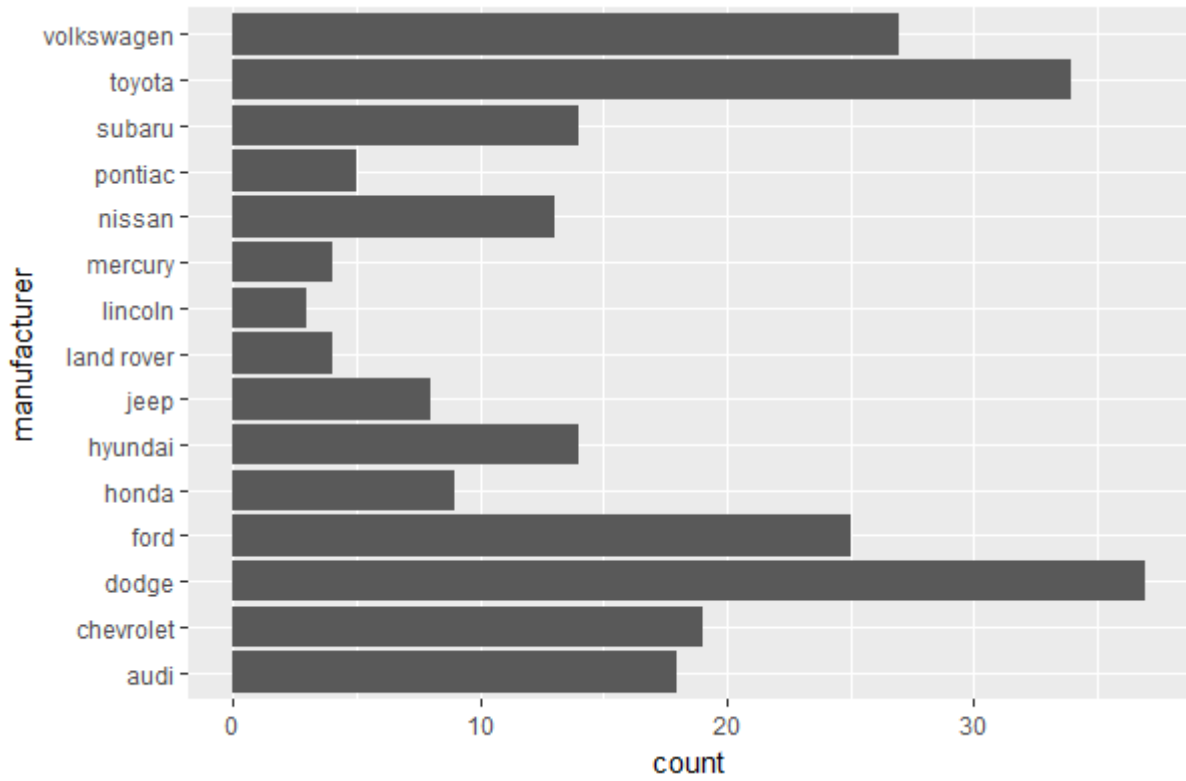
Recreate These Plots

Below are various plots drawn using ggplot using the "mpg" dataset that comes with ggplot. Try to find a set of commands to reproduce the same images. You may have to read help the help pages to find options we did not discuss in class.

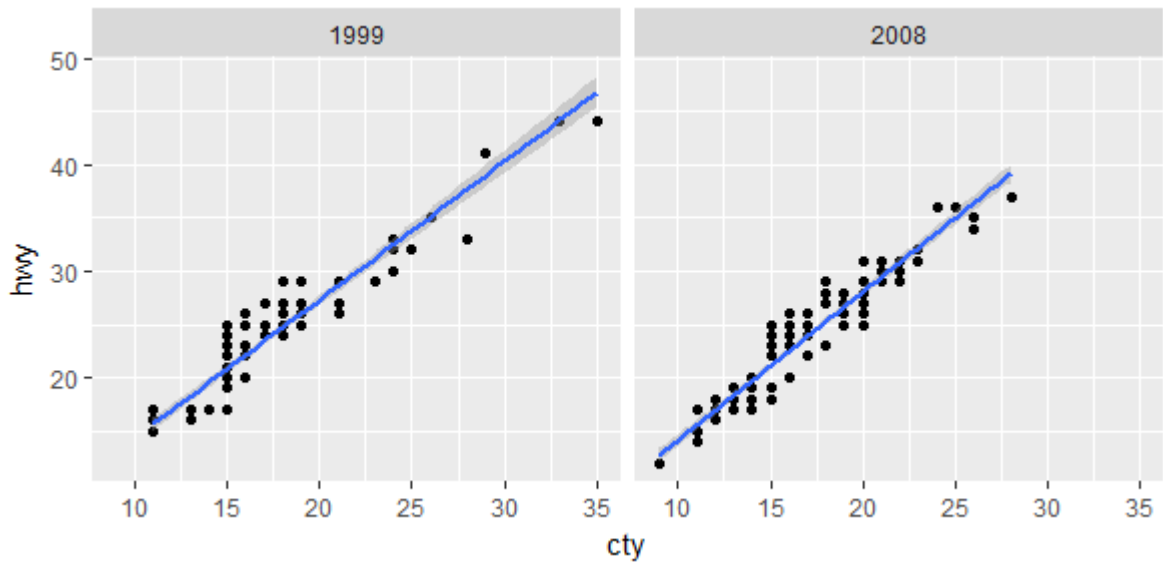
1) The city and highway MPG colored by the number of cylinders in the car



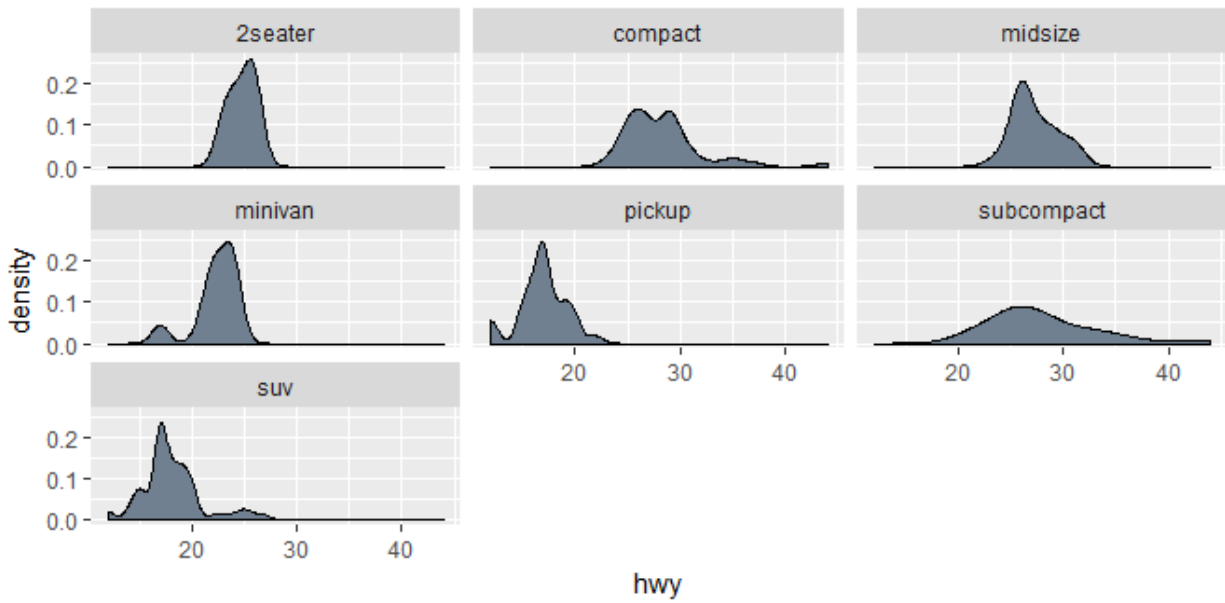
2) A plot showing the number of cars for each of the manufactures in the datasets



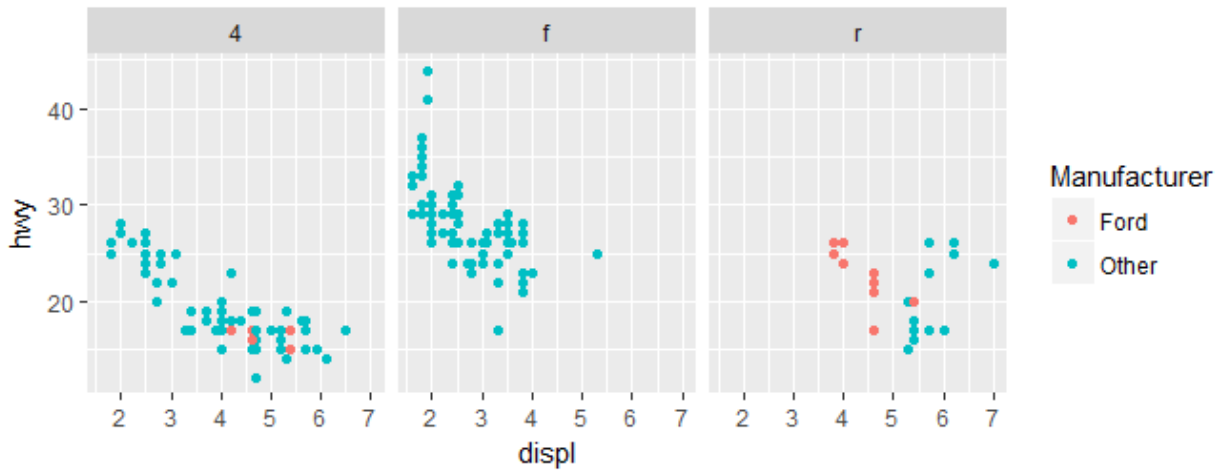
3) A best fit linear regression line for the city/highway mpg values for each year



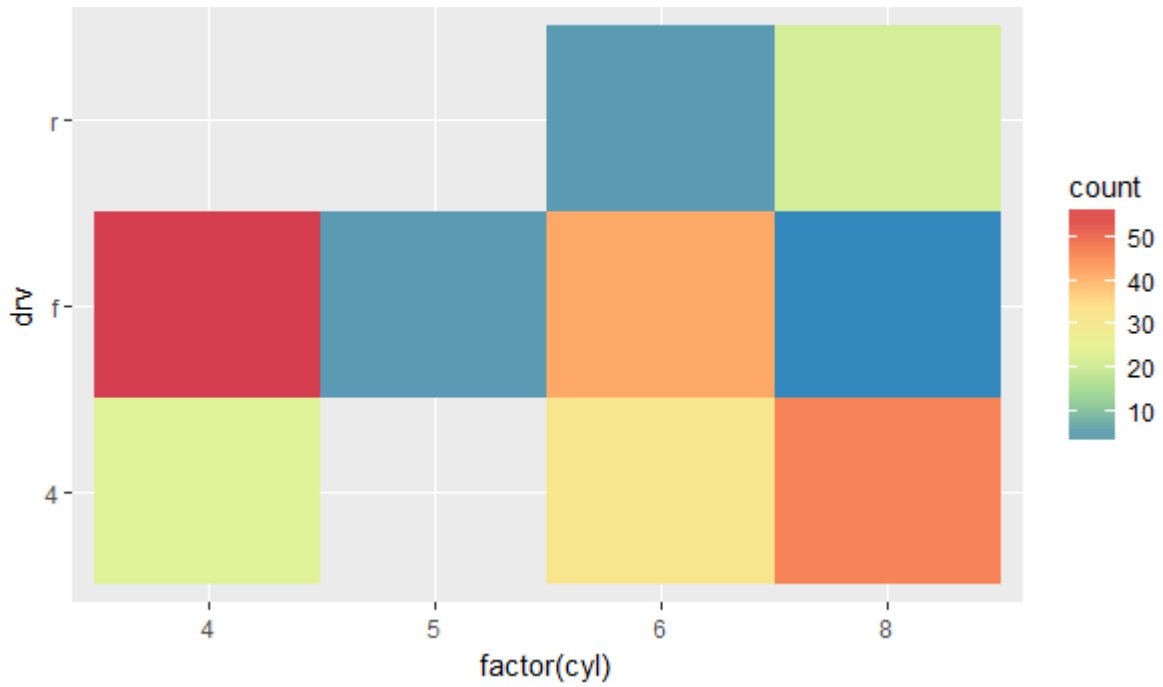
4) Plot the distribution of highway mpg values for the different classes of cars (I chose to use the color "slategray" but feel free to use a color you like)



5) Plot the relationship between engine displacement and highway miles per gallon, highlighting the cars made by Ford. (Note that you might want to use the dplyr recode() function to transform the data before plotting)



6) Plot a visualization showing the number of cars in the dataset by # of cylinders and the drive type (look into stat_bin2d to do the counting for you, and use a ColorBrewer color palette)



Possible Answers

1)

```
ggplot(mpg, aes(cty, hwy, color=factor(cyl))) +  
  geom_point() +  
  scale_color_discrete("Cyl")
```

2)

```
ggplot(mpg, aes(manufacturer)) +  
  geom_bar() +  
  coord_flip()
```

3)

```
ggplot(mpg, aes(cty, hwy)) +  
  geom_point() +  
  geom_smooth(method = "lm") +  
  facet_grid(~factor(year))
```

4)

```
ggplot(mpg, aes(hwy)) +  
  geom_density(fill="slategray") +  
  facet_wrap(~class)
```

5)

```
mpg2 %>% mutate(Manufacturer=recode(manufacturer,  
  ford="Ford", .default="Other")  
ggplot(mpg2), aes(displ, hwy, color=Manufacturer)) +  
  geom_point() +  
  facet_wrap(~drv)
```

6)

```
ggplot(mpg) +  
  stat_bin2d(aes(factor(cyl), drv), geom="tile") +  
  scale_fill_distiller(palette = "Spectral")
```