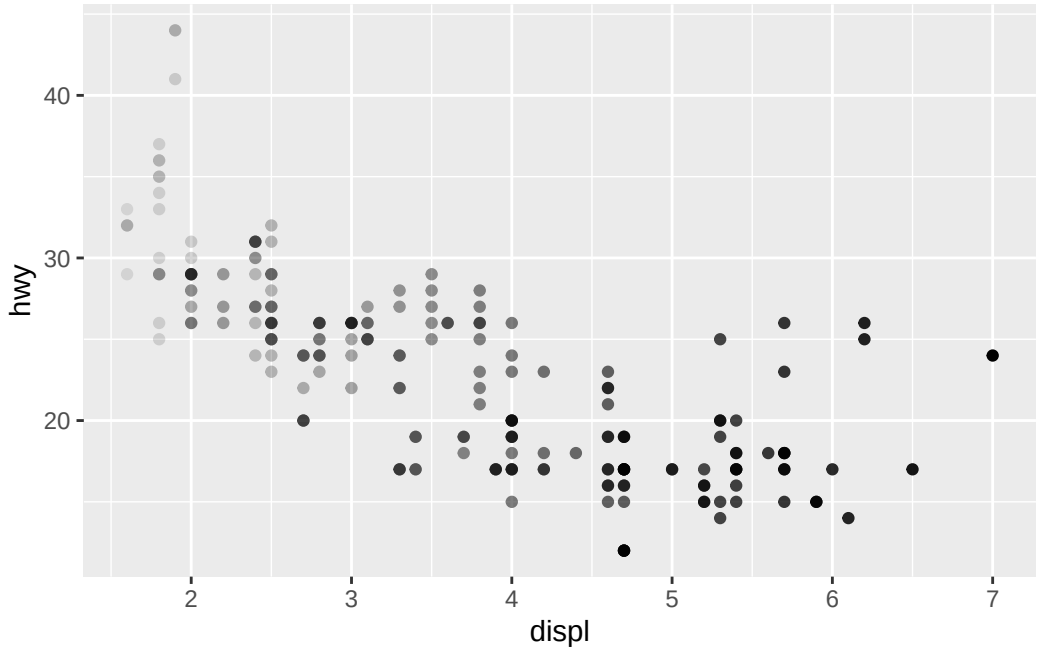
Geometric Object

Geometric Objects

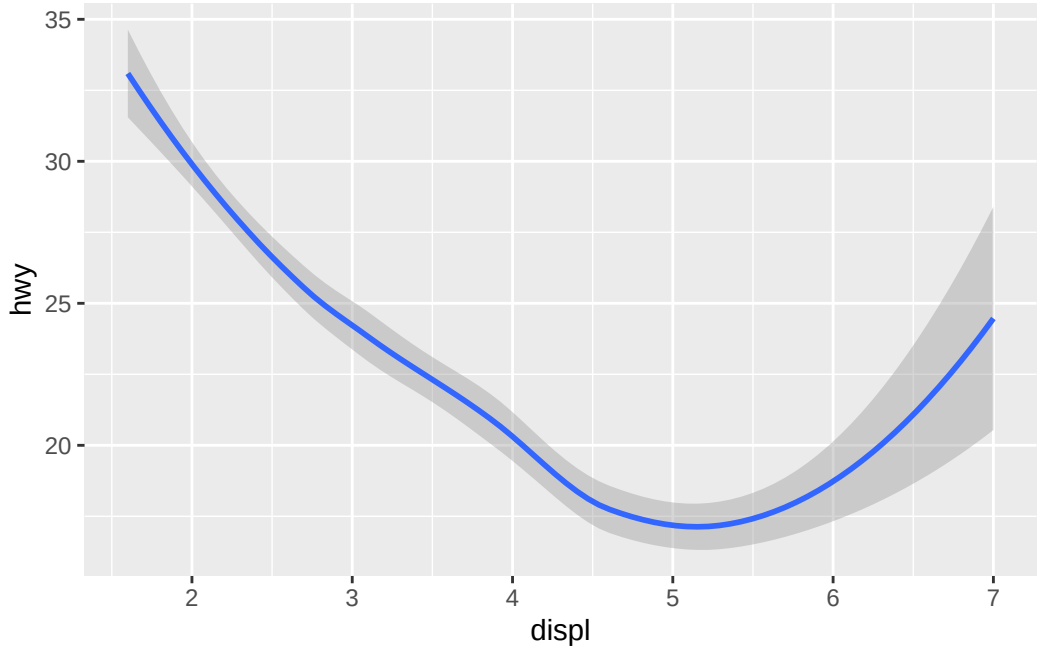
- Geometric objects or *geoms* are objects used to represent data.
- I can represent data with point geom:

```
library(tidyverse)
ggplot(data = mpg) +
  geom_point(
    mapping = aes(x = displ, y = hwy, alpha = displ), #putting some color grading just for ae
    show.legend = FALSE #removing the color grading legend since the x axis already do the jo
  )
```



- Or I can use a smooth line adjusted to the data:

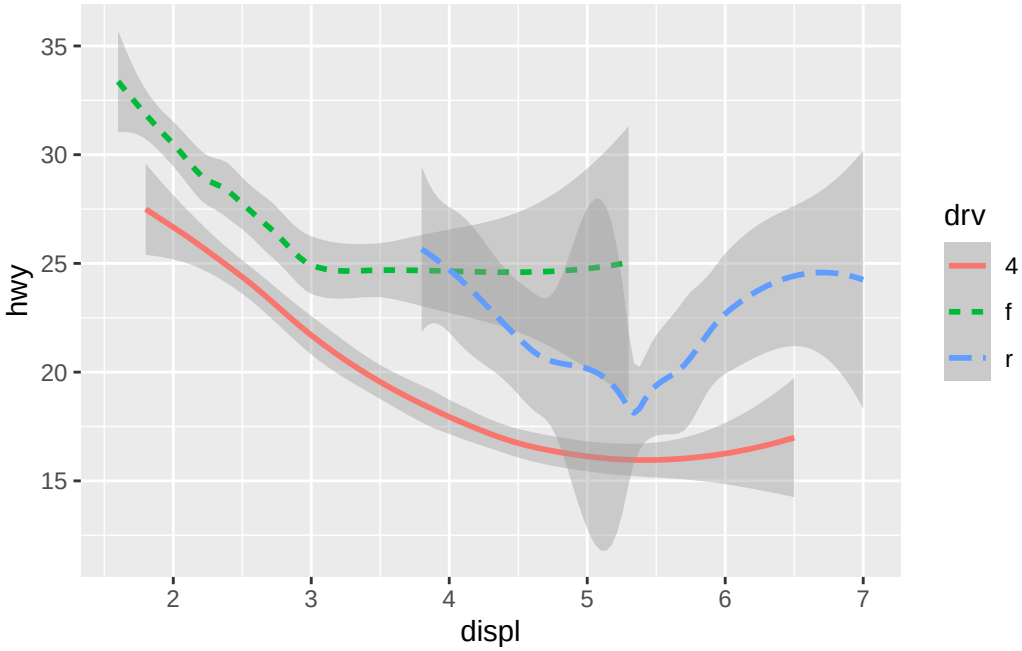
```
ggplot(data = mpg) +
  geom_smooth(
    mapping = aes(x = displ, y = hwy)
  )
```



- I can also do *scaling* with the type of *smooth line*:

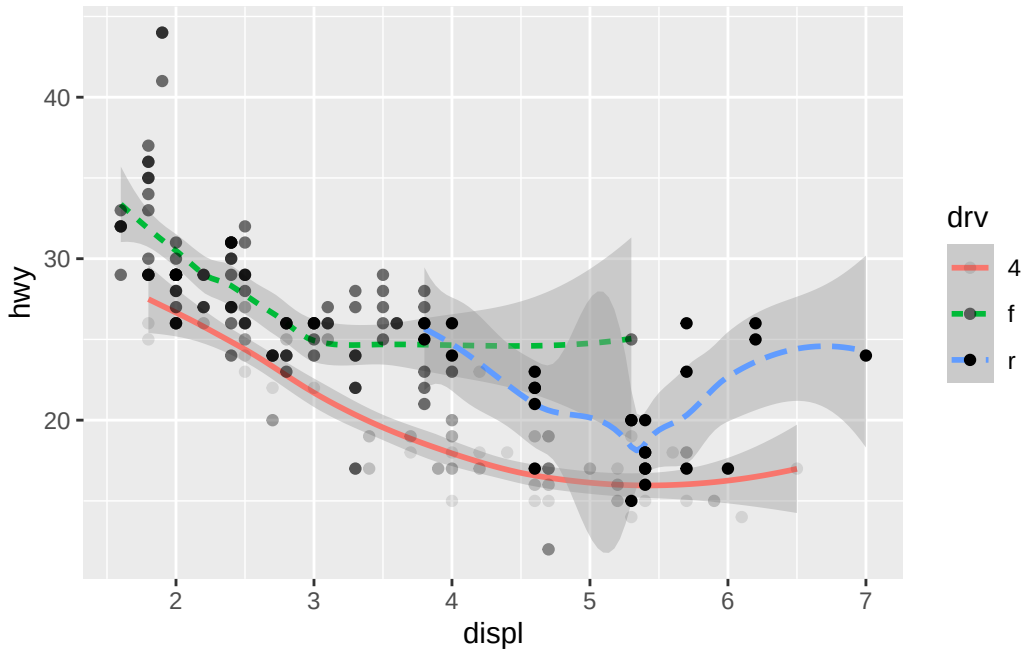
```
ggplot(data = mpg) +
  geom_smooth(
    mapping = aes(x = displ, y = hwy, linetype = drv, color = drv)
  )
```

```
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
```



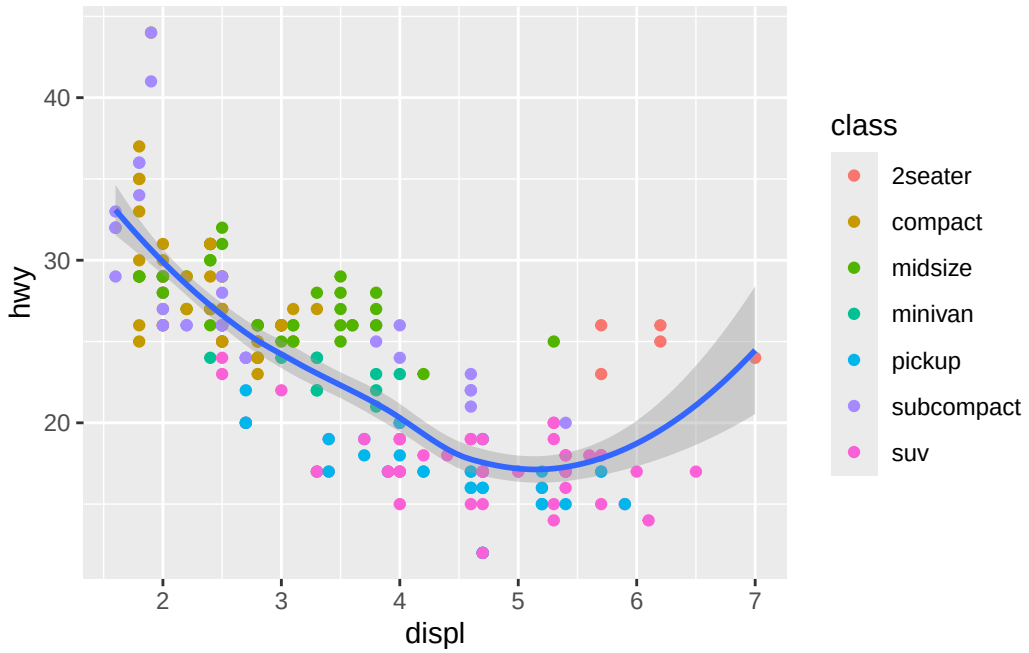
- It's also possible to combine different geoms:

```
ggplot(data = mpg) +
  geom_smooth(
    mapping = aes(x = displ, y = hwy, linetype = drv, color = drv)
  ) +
  geom_point(
    mapping = aes(x = displ, y = hwy, alpha = drv)
  )
```



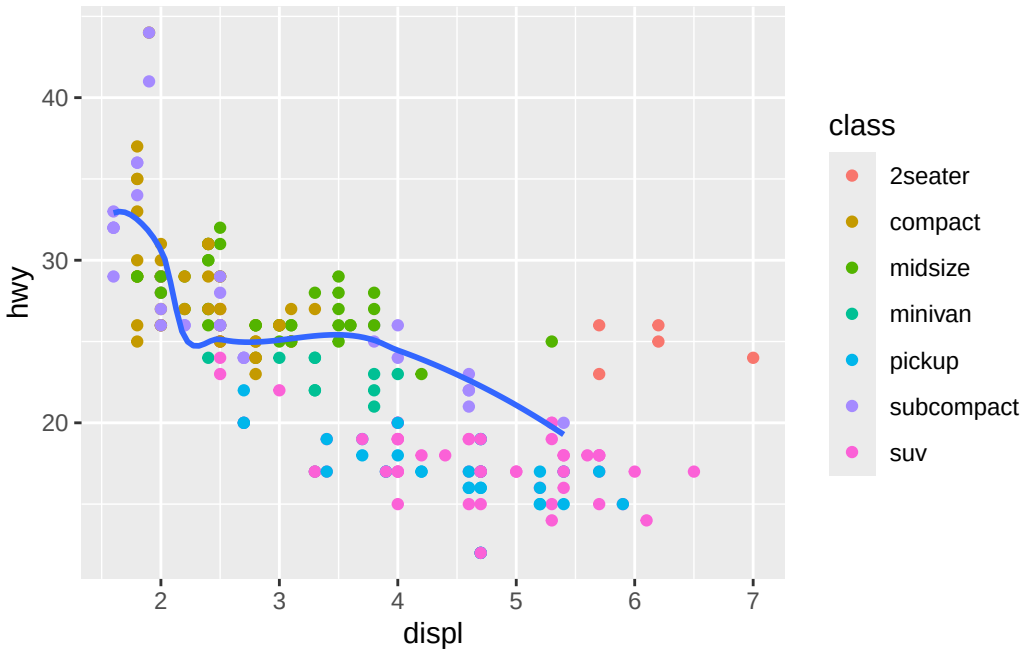
- Nevertheless, it's possible to declare the variables directly in the `ggplot` function to use it in every geom, needing only to declare the variables you want in specific geoms:

```
ggplot(data = mpg, mapping = aes( x = displ, y = hwy)) +
  geom_point(mapping = aes(color = class)) +
  geom_smooth() #it will use the variables I declared in ggplot
```



- Additionally, I can use the smooth line only to a subgroup of my data:

```
ggplot(data = mpg, mapping = aes( x = displ, y = hwy)) +
  geom_point(mapping = aes(color = class)) +
  geom_smooth(
    data = filter(mpg, class == "subcompact"), #filtering the smooth geom to the subgrou
    se = FALSE #removing the buffer around the line
  )
```


hwy
40
30
20
2
3
4
5
6
7
displ
class
2seater
compact
midsize
minivan
pickup
subcompact
suv