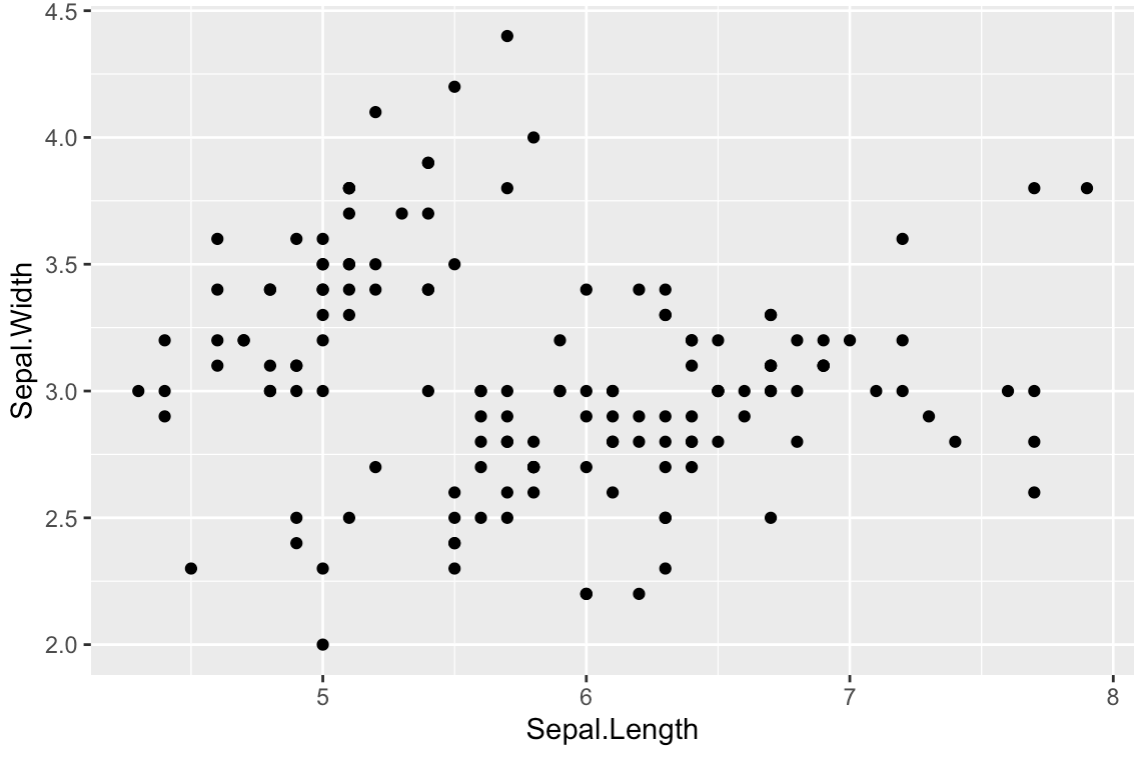
Faceting

Without faceting

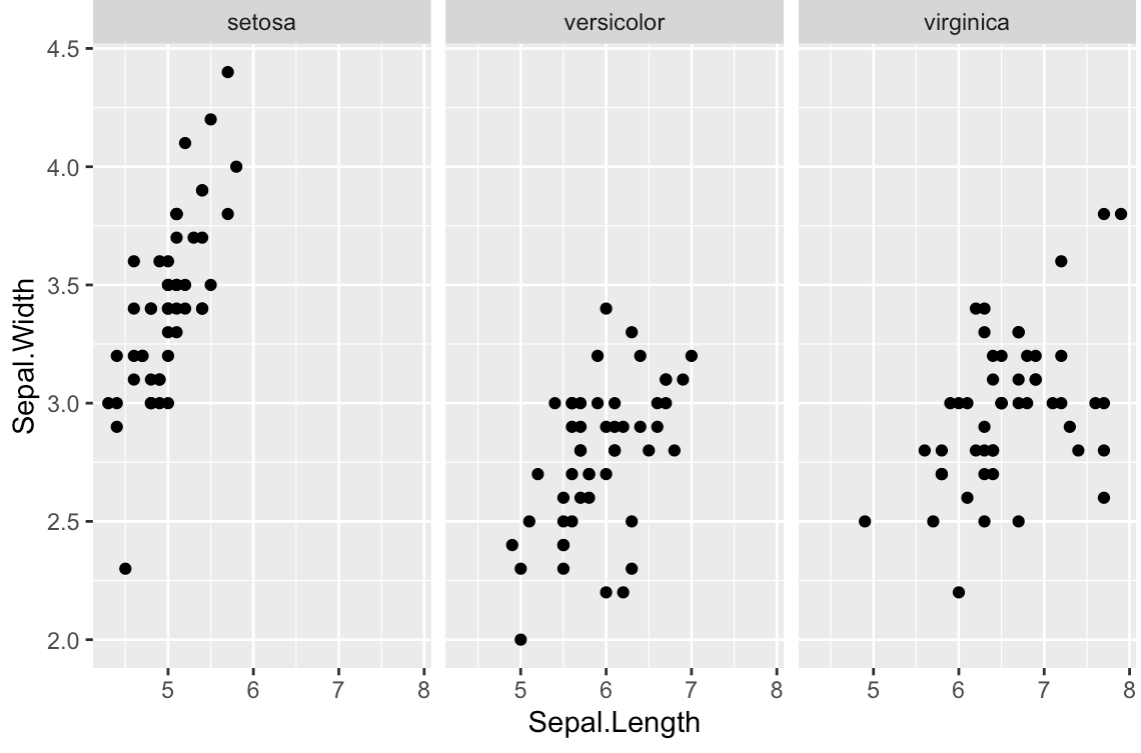
```
1  library(tidyverse)
2  g <- ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
3    geom_point()
4  g
```



Facet on one variable with `facet_wrap()`

facet “on” Species

```
1  g +
2    facet_wrap(~Species)
```



Faceting in ggplot2

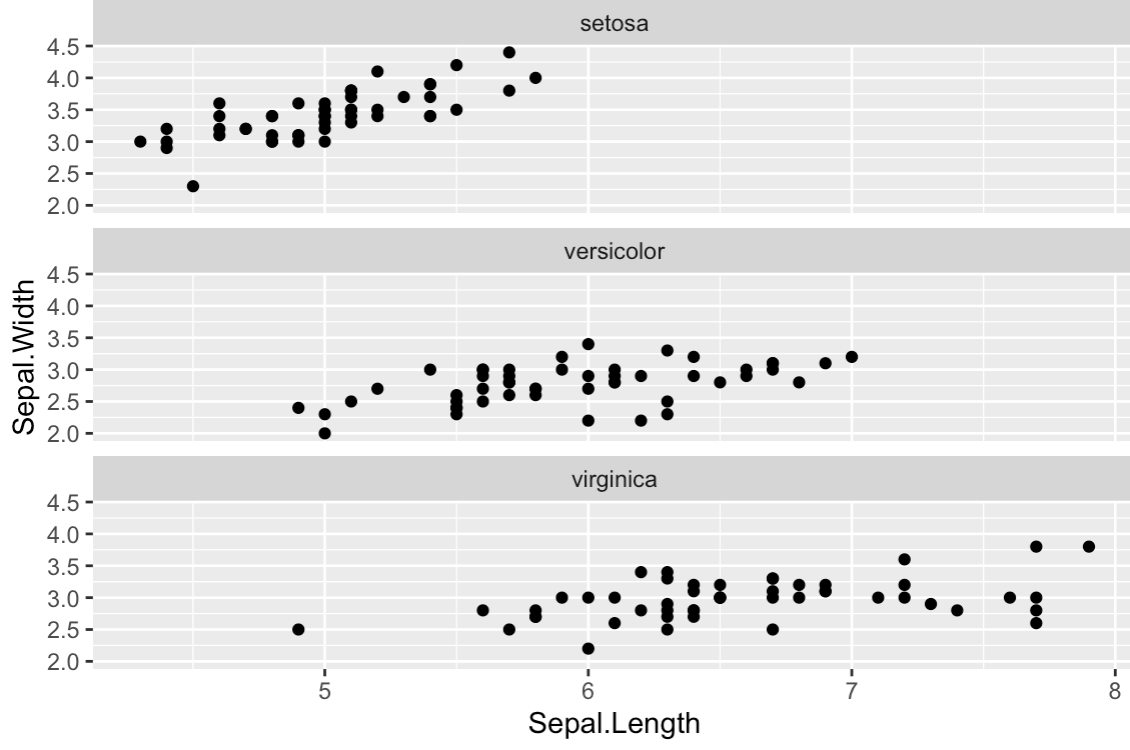
Each panel represents one categorical group / levels of a factor (type can be factor or character or integer)

```
1 glimpse(iris)
```

```
Rows: 150
Columns: 5
$ Sepal.Length <dbl> 5.1, 4.9, 4.7, 4.6, 5.0, 5.4, 4.6, 5.0, 4.4, 4.9, 5.4, 4.…
$ Sepal.Width  <dbl> 3.5, 3.0, 3.2, 3.1, 3.6, 3.9, 3.4, 3.4, 2.9, 3.1, 3.7, 3.…
$ Petal.Length <dbl> 1.4, 1.4, 1.3, 1.5, 1.4, 1.7, 1.4, 1.5, 1.4, 1.5, 1.5, 1.…
$ Petal.Width  <dbl> 0.2, 0.2, 0.2, 0.2, 0.2, 0.4, 0.3, 0.2, 0.2, 0.1, 0.2, 0.…
$ Species      <fct> setosa, setosa, setosa, setosa, setosa, setosa, setosa, s…
```

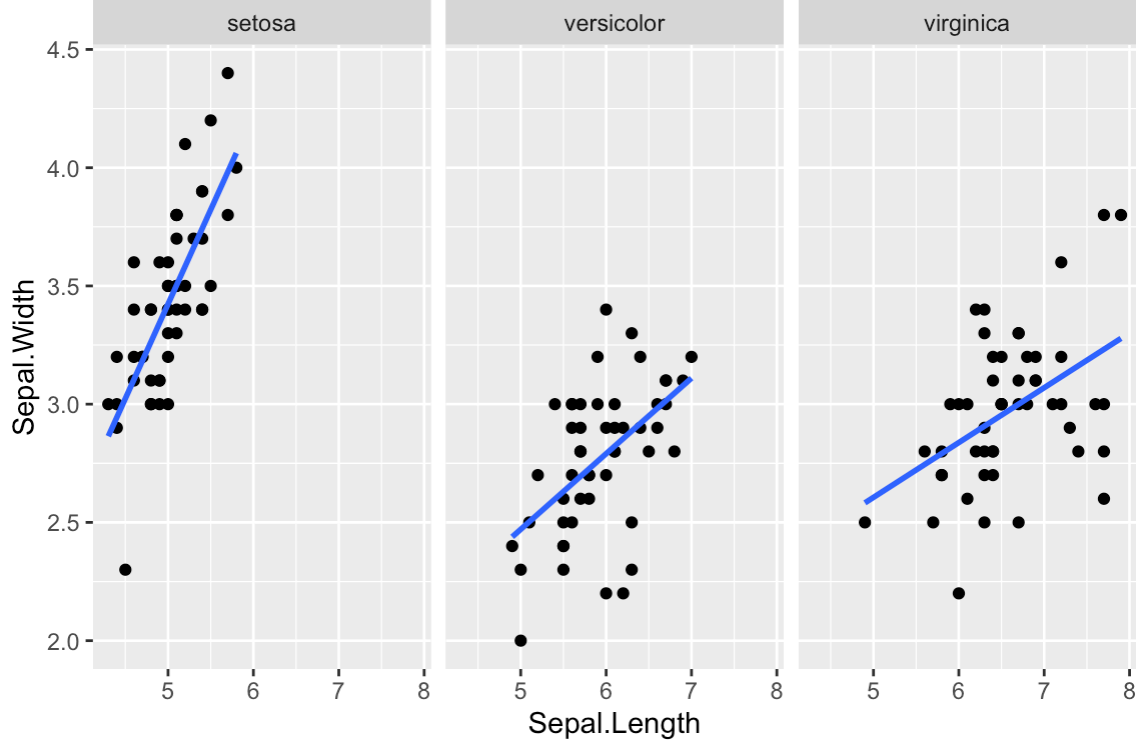
Change the layout with `nrow, ncol`

```
1  g +
2    facet_wrap(~Species, ncol = 1)
```



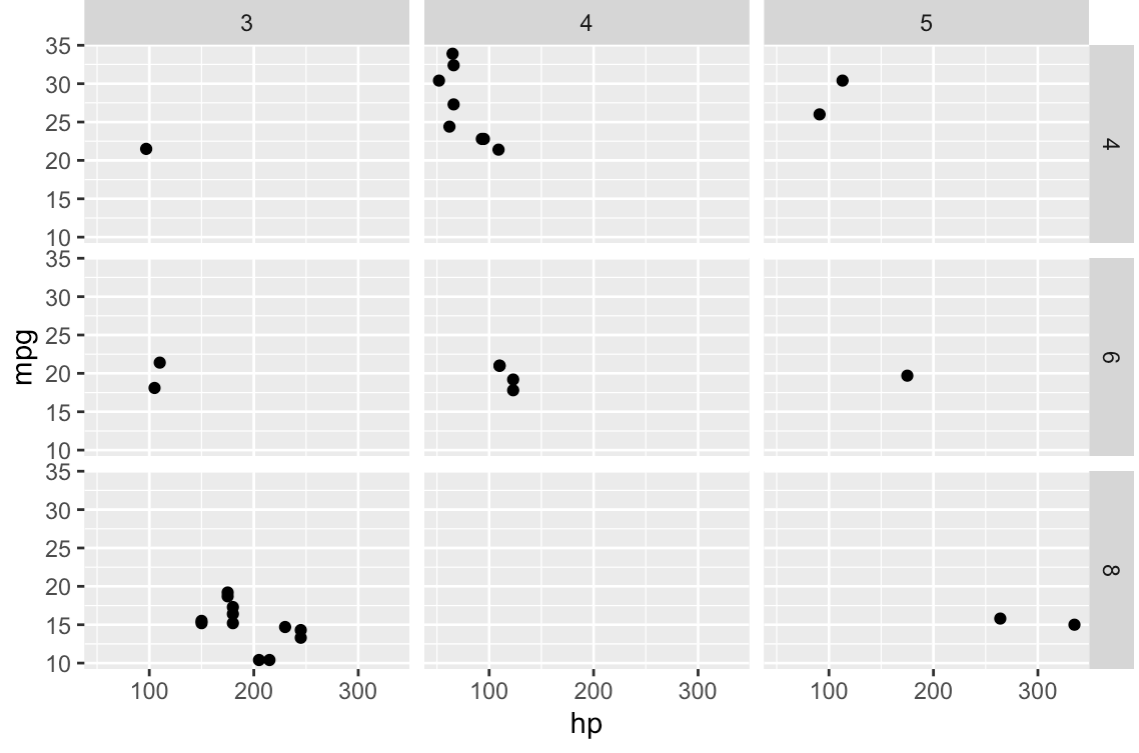
Add regression lines

```
1  g +
2    geom_smooth(method = "lm", se = FALSE) +
3    facet_wrap(~Species)
```



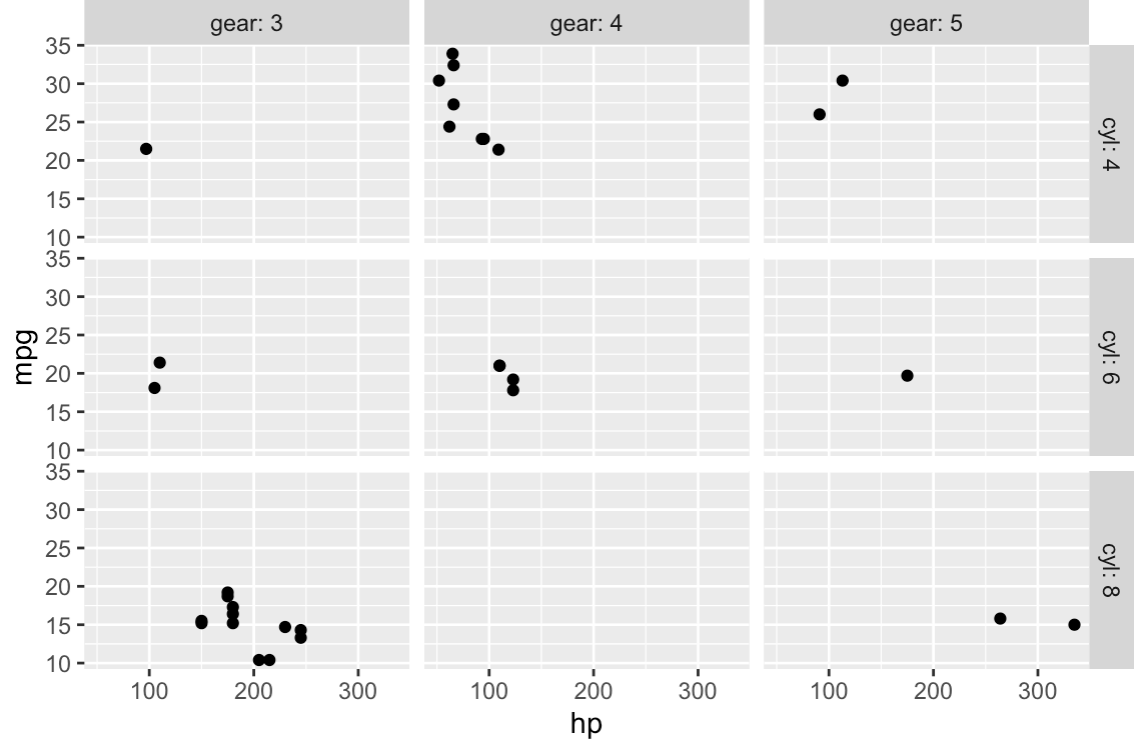
Facet on two (categorical) variables with `facet_grid()`

```
1  ggplot(mtcars, aes(hp,mpg)) +
2    geom_point() +
3    facet_grid(cyl~gear)
```



Label variables (in addition to factor levels)

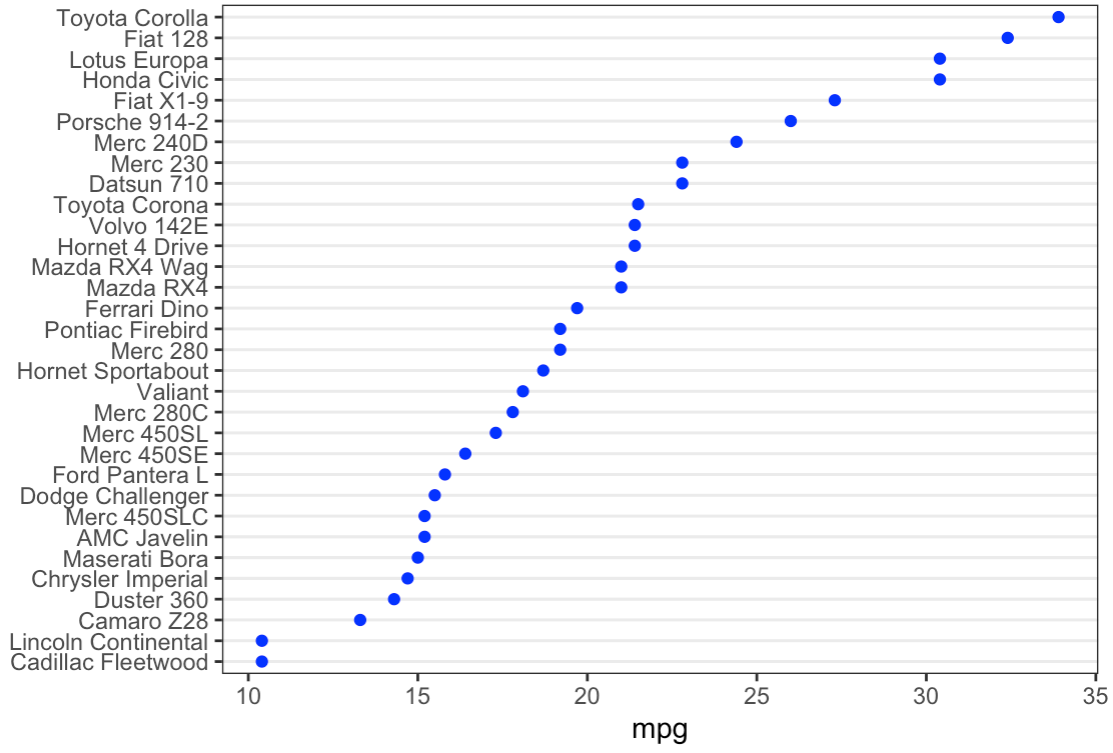
```
1  ggplot(mtcars, aes(hp, mpg)) +
2    geom_point() +
3    facet_grid(cyl~gear, labeller = label_both)
```



Cleveland dot plots

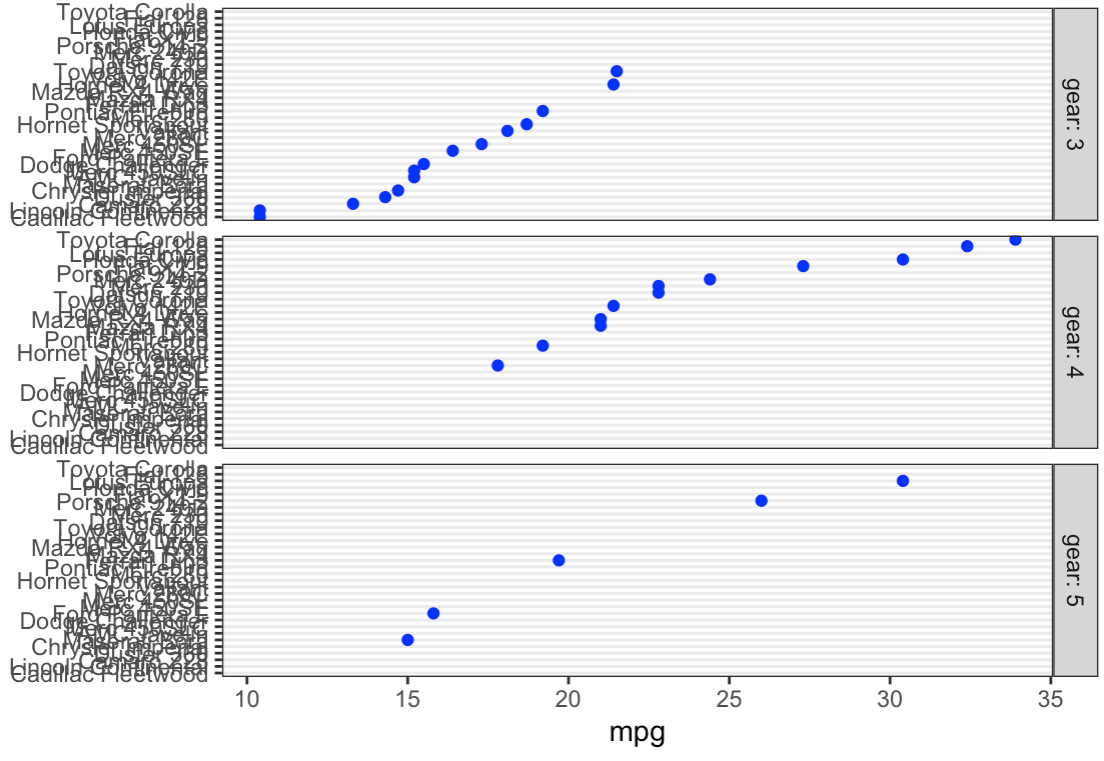
Note that y-axis is discrete

```
g <- mtcars |>
  rownames_to_column("car") |>
  ggplot(aes(mpg, reorder(car, mpg))) +
  geom_point(color = "blue") +
  ylab("") +
  theme_bw() +
  theme(panel.grid.major.x = element_blank(),
        panel.grid.minor.x = element_blank())
g
```


Toyota Corolla
Fiat 128
Lotus Europa
Honda Civic
Fiat X1-9
Porsche 914-2
Merc 240D
Merc 230
Datsun 710
Toyota Corona
Volvo 142E
Hornet 4 Drive
Mazda RX4 Wag
Mazda RX4
Ferrari Dino
Pontiac Firebird
Merc 280
Hornet Sportabout
Valiant
Merc 280C
Merc 450SL
Merc 450SE
Ford Pantera L
Dodge Challenger
Merc 450SLC
AMC Javelin
Maserati Bora
Chrysler Imperial
Duster 360
Camaro Z28
Lincoln Continental
Cadillac Fleetwood
10
15
20
25
30
35
mpg

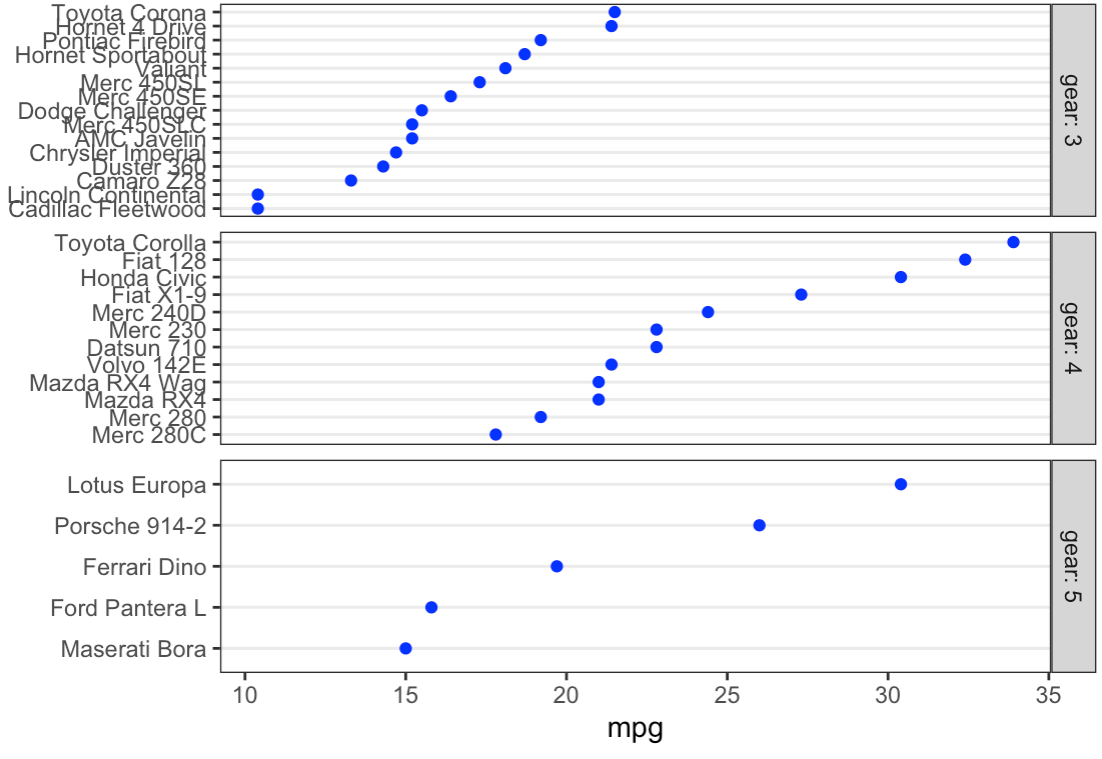
Facet by gear

```
1  g +
2    facet_grid(gear ~ ., labeller = label_both)
```



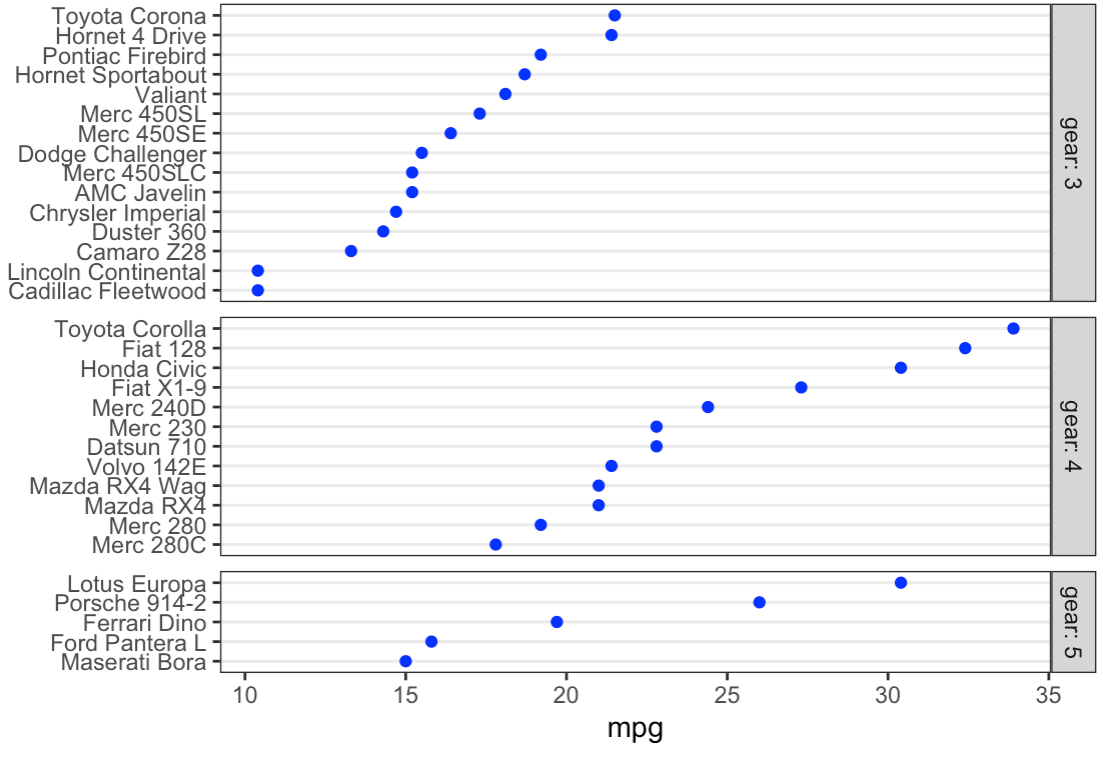
“Free” the y scale with `scales = "free_y"`

```
1  g +
2    facet_grid(gear ~ ., labeller = label_both,
3               scales = "free_y")
```



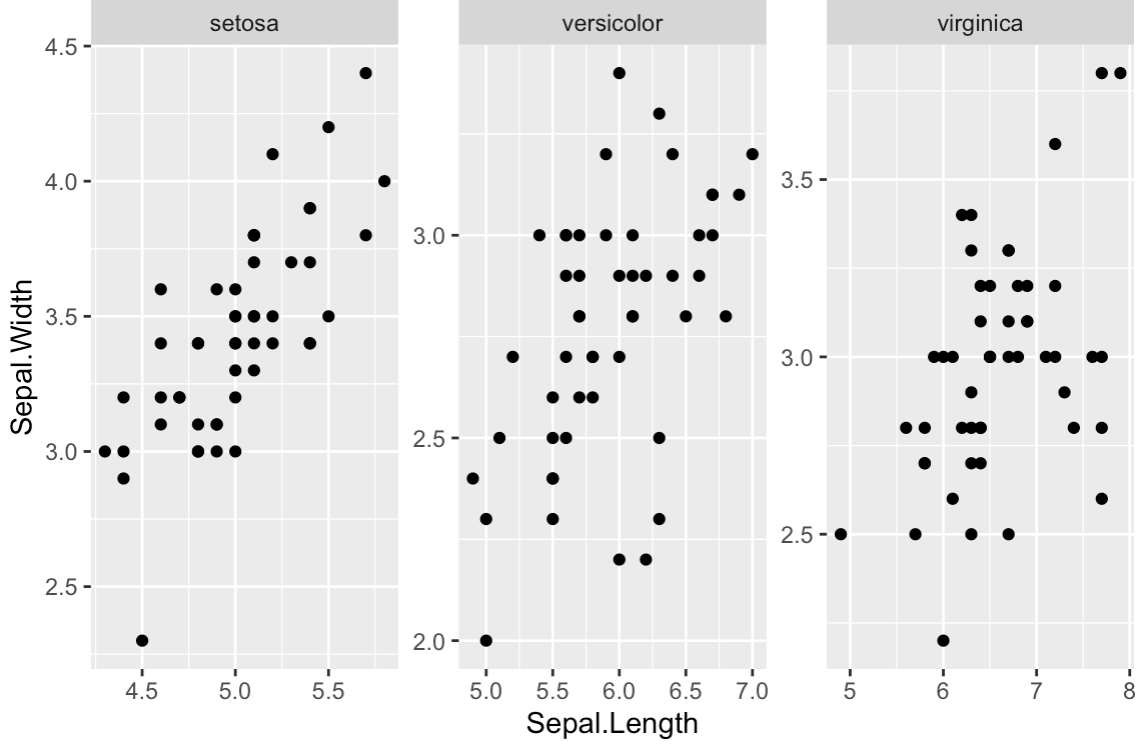
Change panel heights with `space = "free_y"`

```
1  g +
2    facet_grid(gear ~ ., labeller = label_both,
3               scales = "free_y", space = "free_y")
```



In general, do not “free” numerical scales

```
1  ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
2    geom_point() +
3    facet_wrap(~Species, scales = "free")
```



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