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Cheat sheet for plotting in R

Cheat Sheet For Plotting With ggplot

Here you can find code snippets for making a plot with ggplot, just copy-paste. Below every graph there are two chunks of code: the first block is an example of the code lines for making a plot like one placed above. Then, there is a block with the same code with a placeholders between < > for replacing it and make the graph with your own data.

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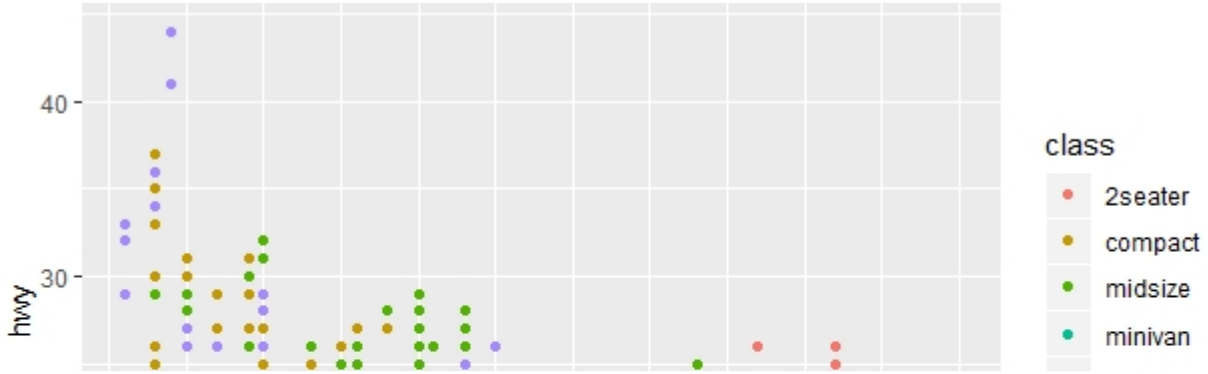
Have a fun plots!
By: http://medium.com/@obedm

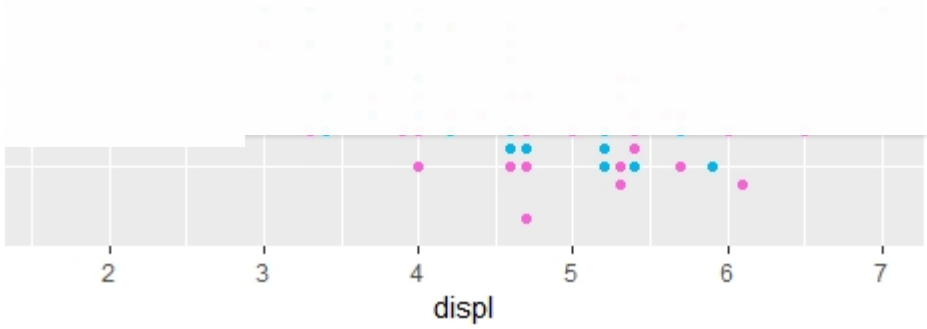
Basic Template

Here you have the basic template for creating almost any kind of plot. Below every chart you can see the plot and the code used, then a template with placeholders which you can copy-paste in R.

```
#Basic template
ggplot(data = <DATA>) +
  <GEOM_FUNCTION>(
     mapping = aes(<MAPPINGS>),
     stat = <STAT>,
     position = <POSITION>
  ) +
  <COORDINATE_FUNCTION> +
  <FACET_FUNCTION>
```

Creating simple plot

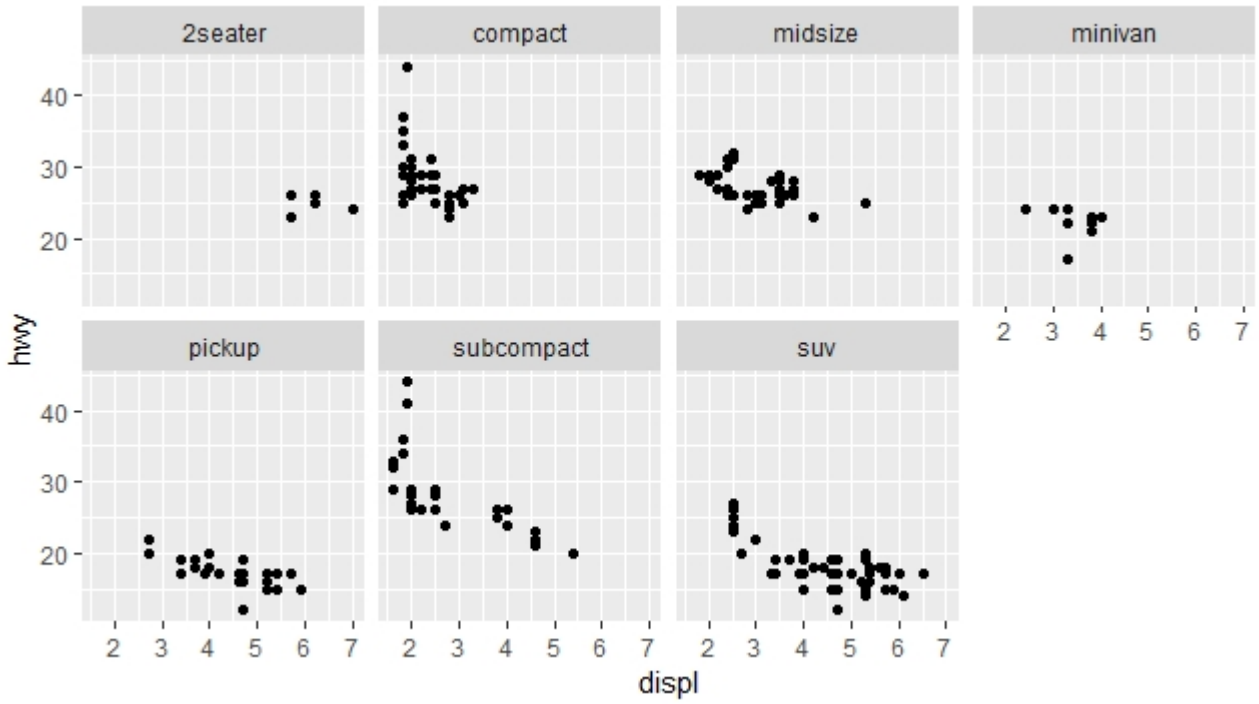





```
#Example
ggplot(data = mpg) +
    geom_point(mapping = aes(x = displ, y = hwy, color = class))
```

```
#Template
ggplot(data = <DATA>) +
    <GEOM_FUNCTION>(mapping = aes(<MAPPINGS>))
```

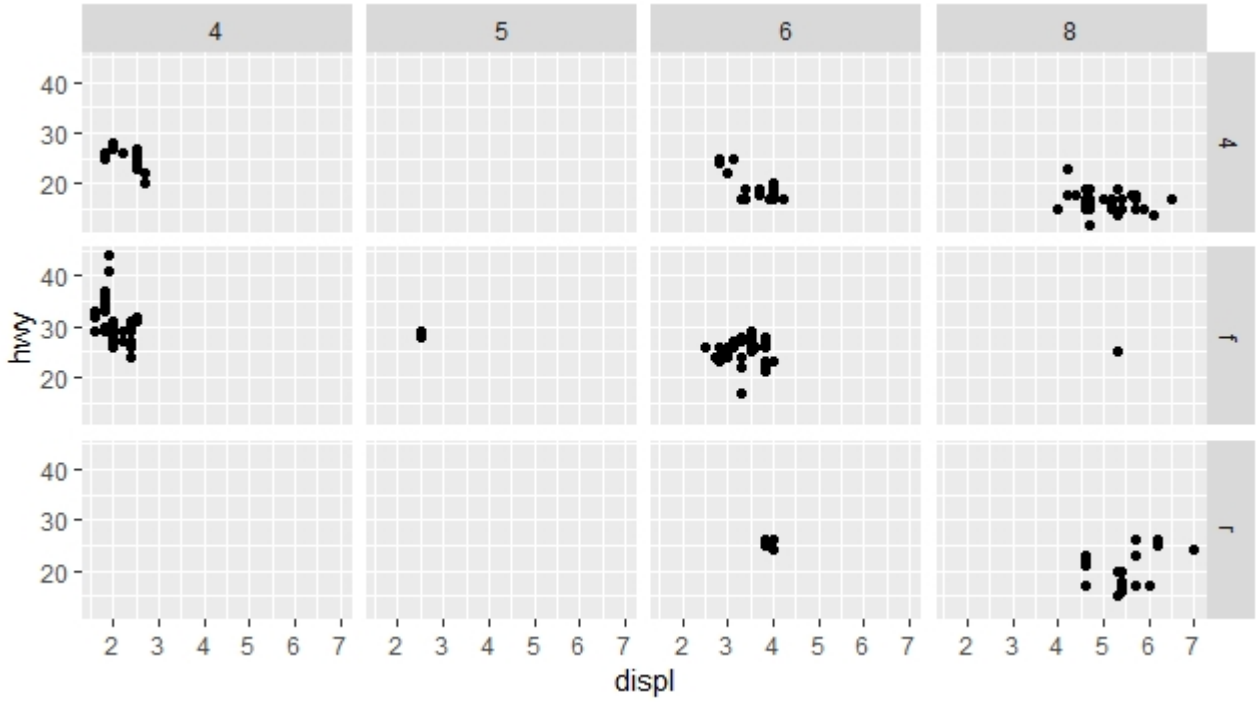
Facet




```
#Example
ggplot(data = mpg) +
    geom_point(mapping = aes(x = displ, y = hwy)) +
    facet_wrap(~ class, nrow = 2)
```

```
#Template
ggplot(data = <DATA>) +
  <GEOM_FUNCTION>(mapping = aes(<MAPPINGS>))+
    facet_wrap(~ <variable>, nrow = <NUMBER>)
```

Facet_grid



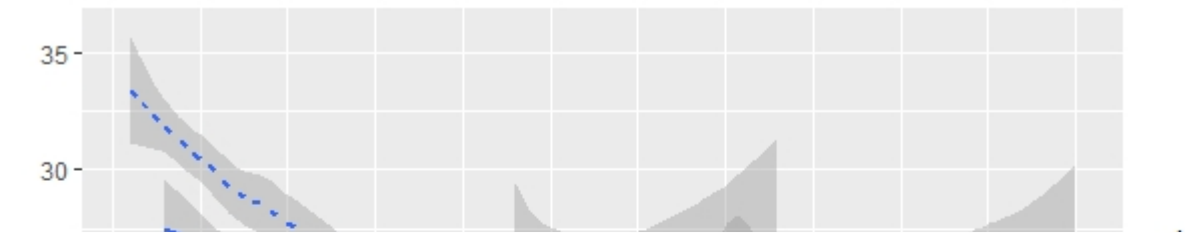

```
#Example
ggplot(data = mpg) +
    geom_point(mapping = aes(x = displ, y = hwy)) +
    facet_grid(drv ~ cyl)
```

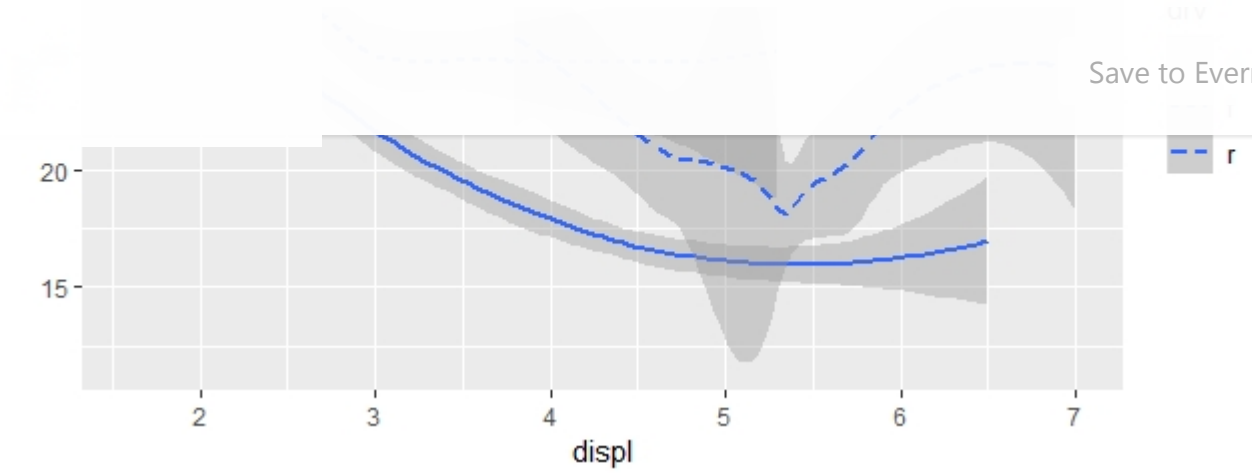
```
#Template
ggplot(data = <DATA>) +
  <GEOM_FUNCTION>(mapping = aes(<MAPPINGS>))+
    facet_grid(<VARIABLE 1> ~ <VARIABLE 2>)
```

If you prefer to not facet in the rows or columns dimension, use a . instead of a variable name, e.g. + facet_grid(. ~ cyl).

Geometric objects

geom_smooth() will draw a different line, with a different linetype, for each unique value of the variable that you map to linetype.



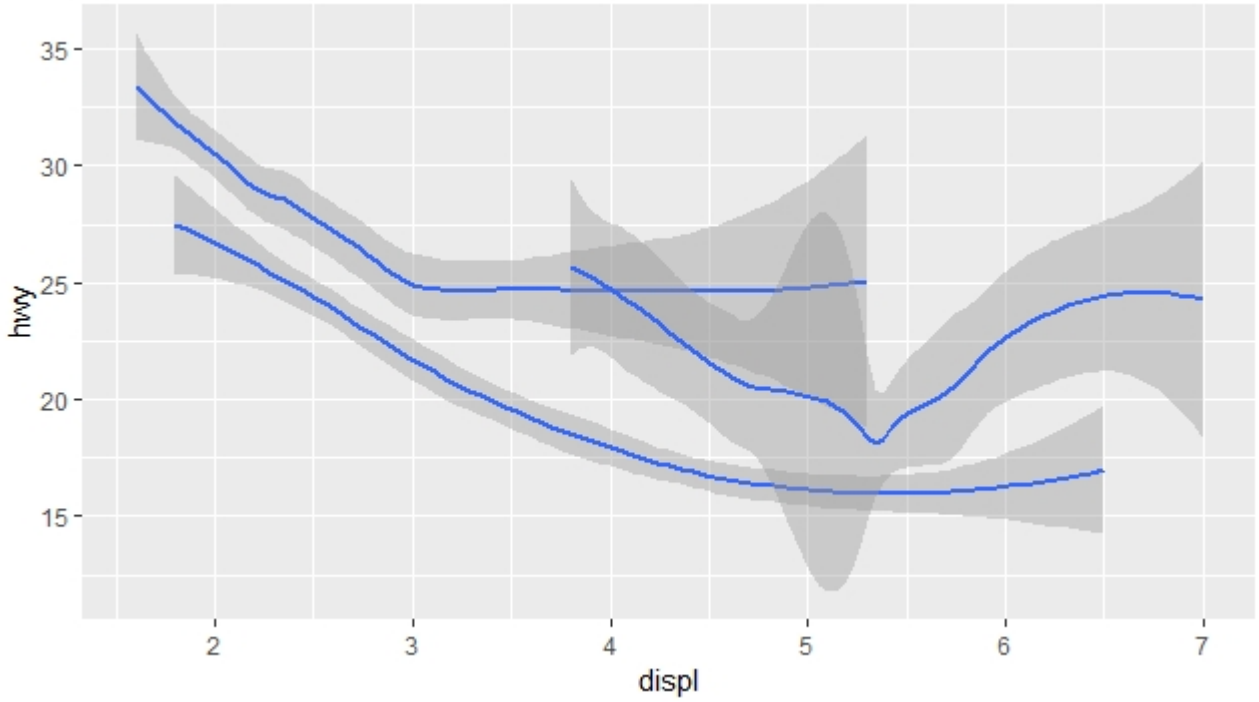



```
#Example
ggplot(data = mpg) +
    geom_smooth(mapping = aes(x = displ, y = hwy, linetype = drv))
```

```
#Template
ggplot(data = <DATA>) +
    geom_smooth(mapping = aes(x = <VARIABLE 1>,, y =<VARIABLE 2>, linetype = <VARIABLE
3>))
```

Group categorical variables

You can set the group aesthetic to a categorical variable to draw multiple objects.

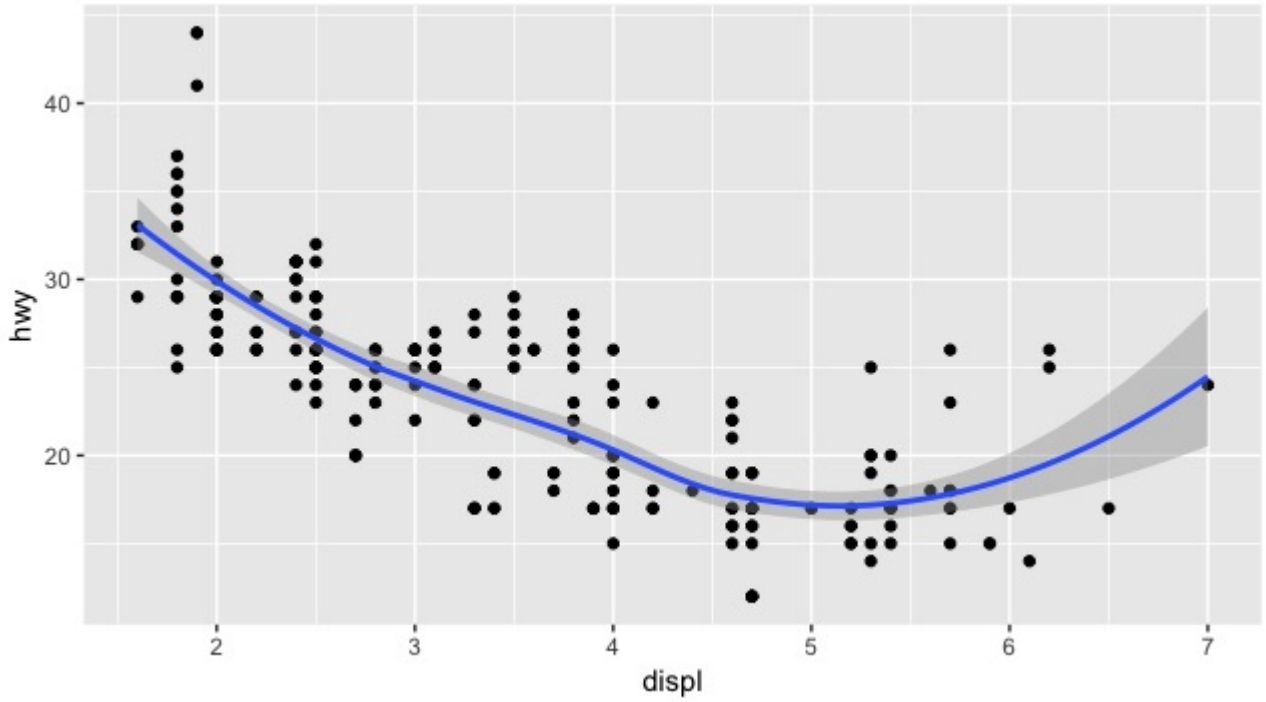



```
#Example
ggplot(data = mpg) +
    geom_smooth(mapping = aes(x = displ, y = hwy, group = drv))
```

```
#Template
ggplot(data = <DATA>) +
    geom_smooth(mapping = aes(x = <VARIABLE 1>, y = <VARIABLE 2>, group = <VARIABLE 3>))
```

Multiple geoms in the same plot

Add multiple geom functions to ggplot()




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

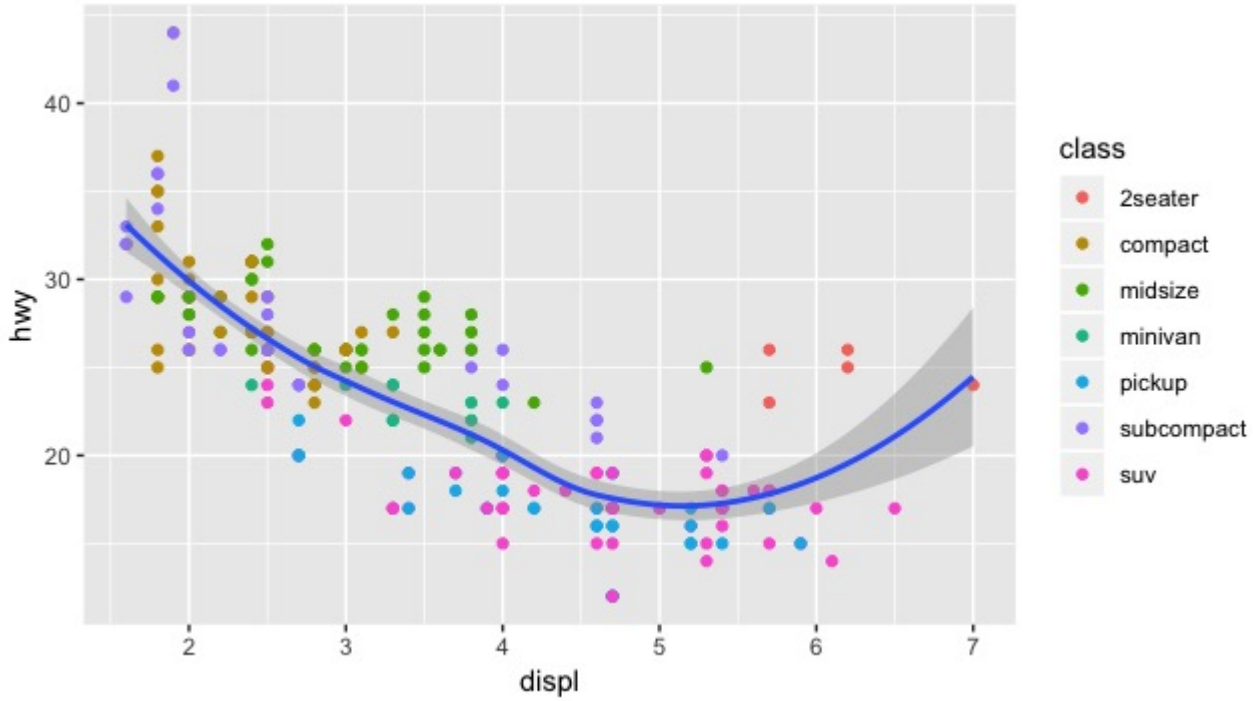
```
#Template
ggplot(data = <DATA>) +
    geom_point(mapping = aes(x = <VARIABLE 1>, y =<VARIABLE 2>)) +
    geom_smooth(mapping = aes(x = <VARIABLE 1>, y =<VARIABLE 2>))
```

The previous plot with reduced code

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

Multiple geoms and mappings in the same plot

If you place mappings in a geom function, ggplot2 will treat them as local mappings for the layer. It will use these mappings to extend or overwrite the global mappings for that layer only. This makes it possible to display different aesthetics in different layers.



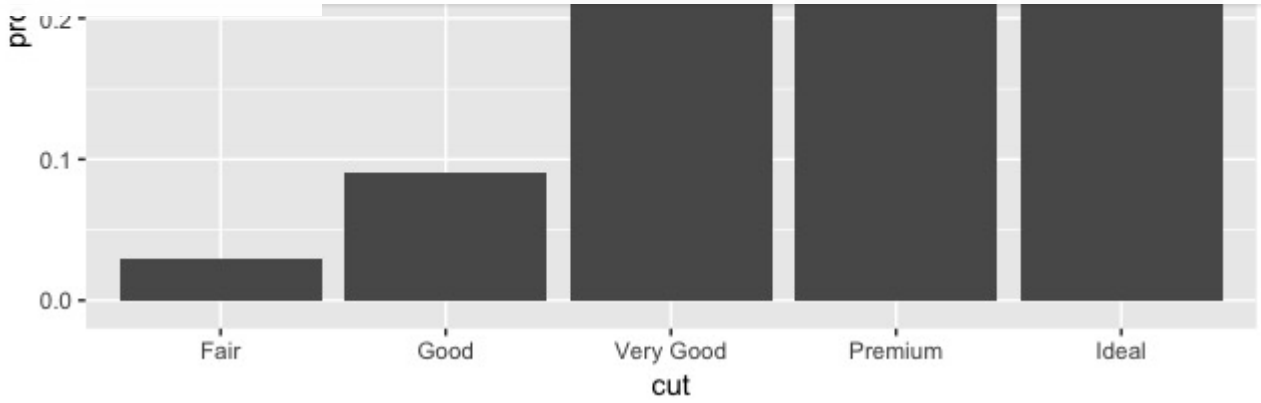

```
#Example 1
ggplot(data = mpg, mapping = aes(x = displ, y = hwy)) +
    geom_point(mapping = aes(color = class)) +
    geom_smooth()
```

You can use the same idea to specify different data for each layer. The local data argument in geom_smooth() overrides the global data argument in ggplot() for that layer only.

```
#Example 2
ggplot(data = mpg, mapping = aes(x = displ, y = hwy)) +
    geom_point(mapping = aes(color = class)) +
    geom_smooth(data = filter(mpg, class == "subcompact"), se = FALSE)
```

Display a bar chart of proportion

You might want to override the default mapping from transformed variables to aesthetics. For example, you might want to display a bar chart of proportion, rather than count.

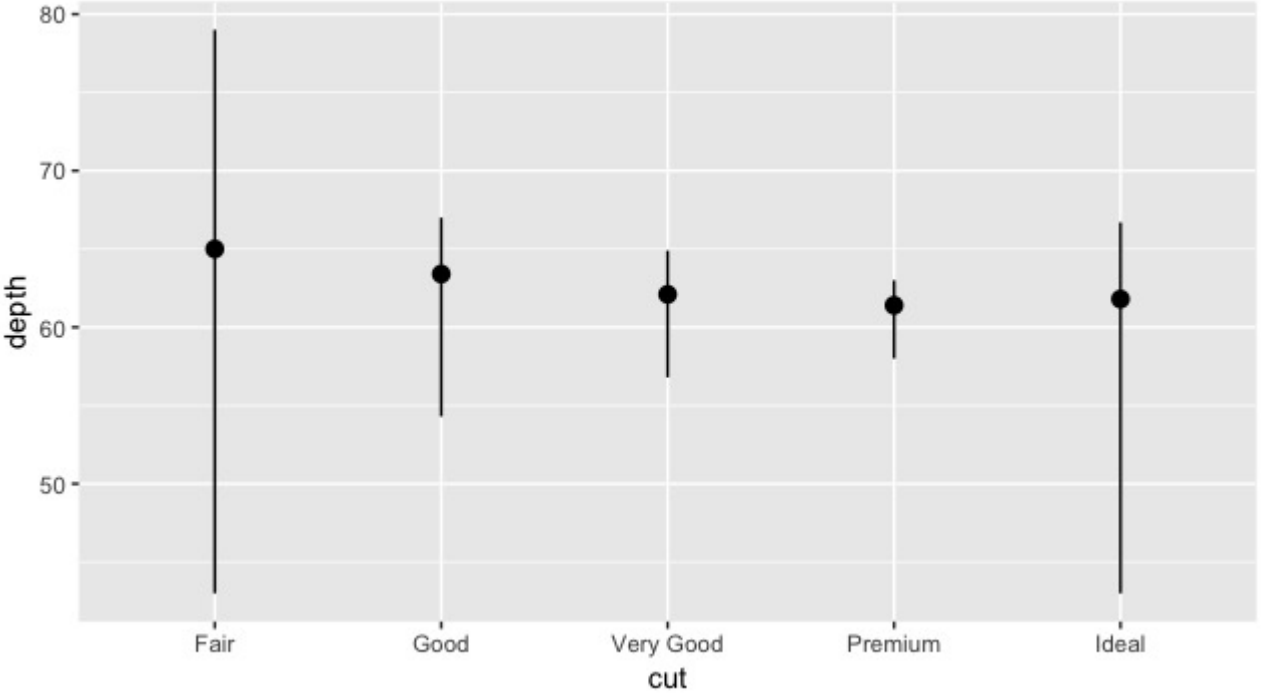



```
#Example
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x = cut, y = ..prop.., group = 1))
```

```
#Template
ggplot(data = <DATA>) +
  geom_bar(mapping = aes(x = <VARIABLE 1>, y = ..prop.., group = 1))
```

Plotting a summary

You might want to draw the min, max and median value in your plot.

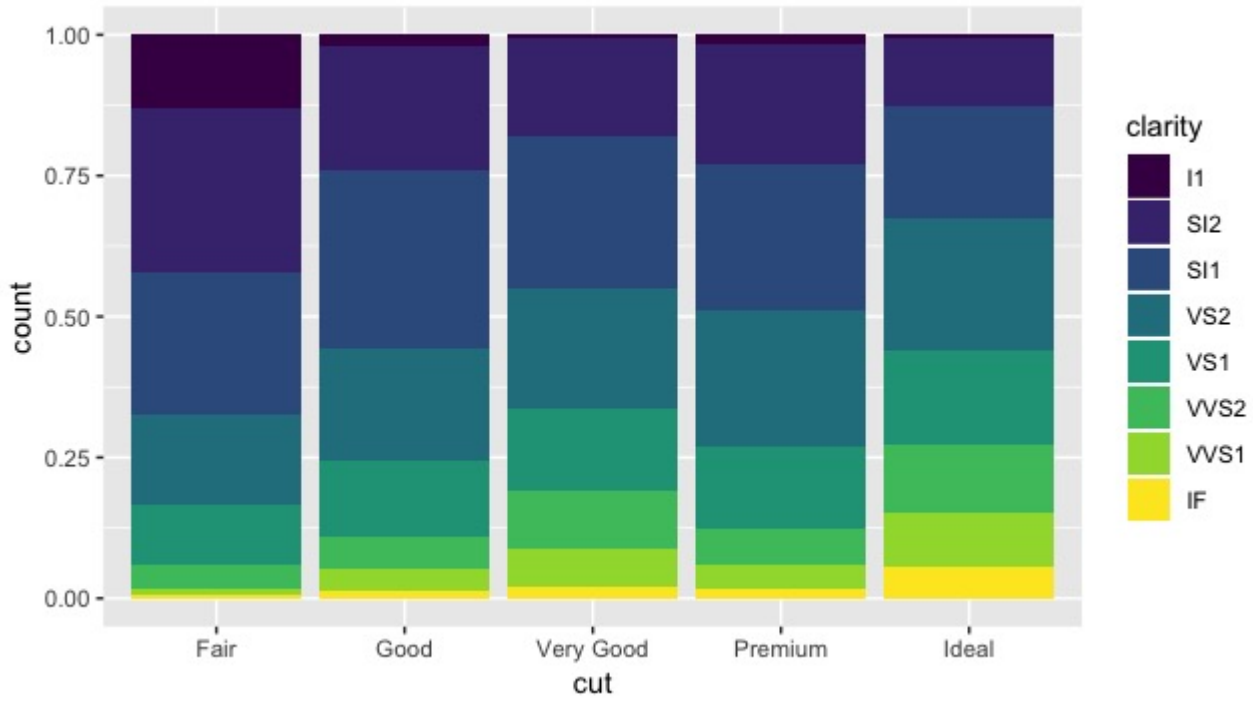



```
#Example
ggplot(data = diamonds) +
```

```
    fun.y = median
  )
```

```
#Template
ggplot(data = <DATA>) +
  stat_summary(
    mapping = aes(x = <VARIABLE>, y = <VARIABLE>),
    fun.ymin = min,
    fun.ymax = max,
    fun.y = median
  )
```

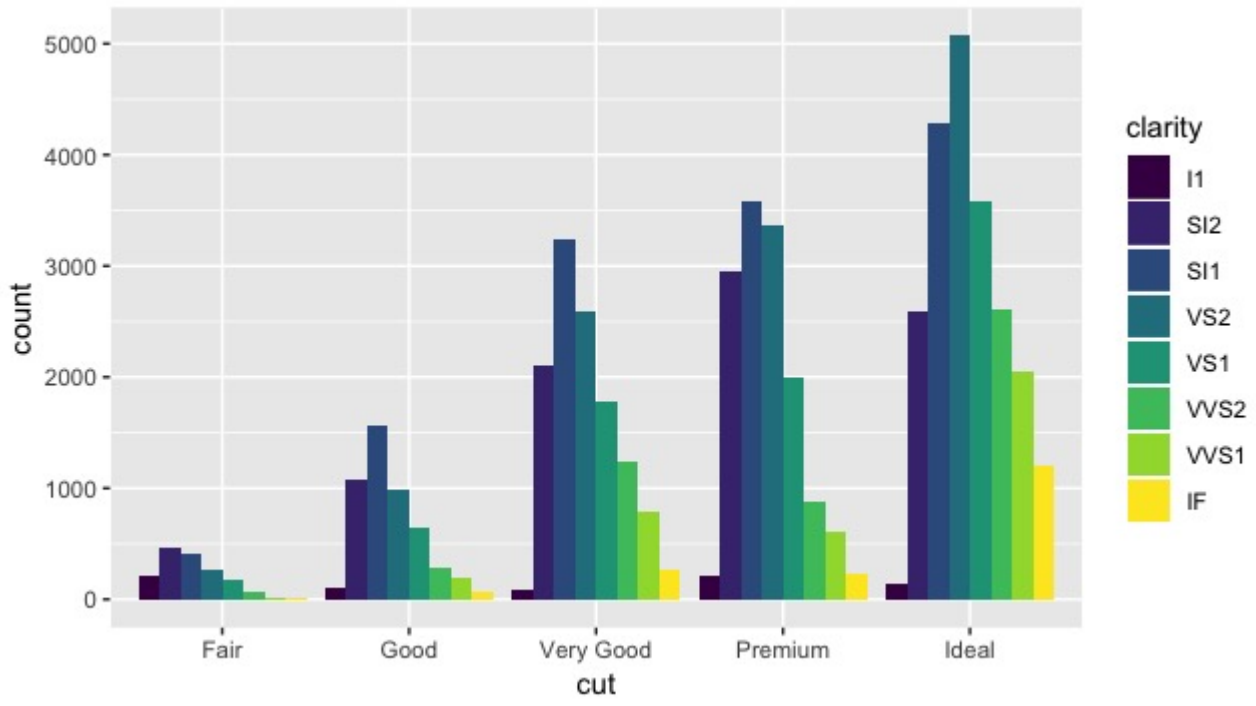
Plotting a full proportion bar




```
#Example
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x = cut, fill = clarity), position = "fill")
```

```
#Template
ggplot(data = <DATA>) +
  geom_bar(mapping = aes(x = <VARIABLE 1>, fill = <VARIABLE 2>), position = "fill")
```

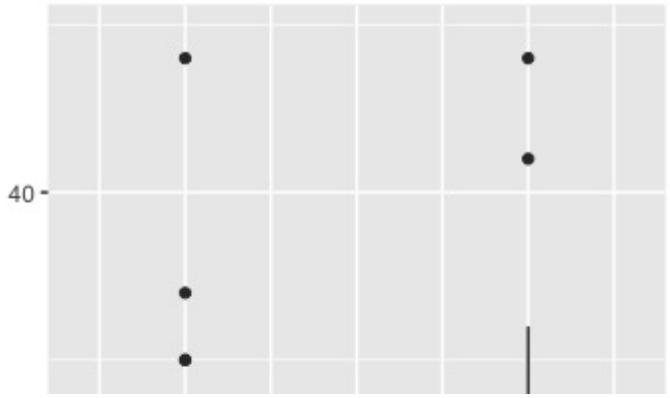
Comparation plot bar

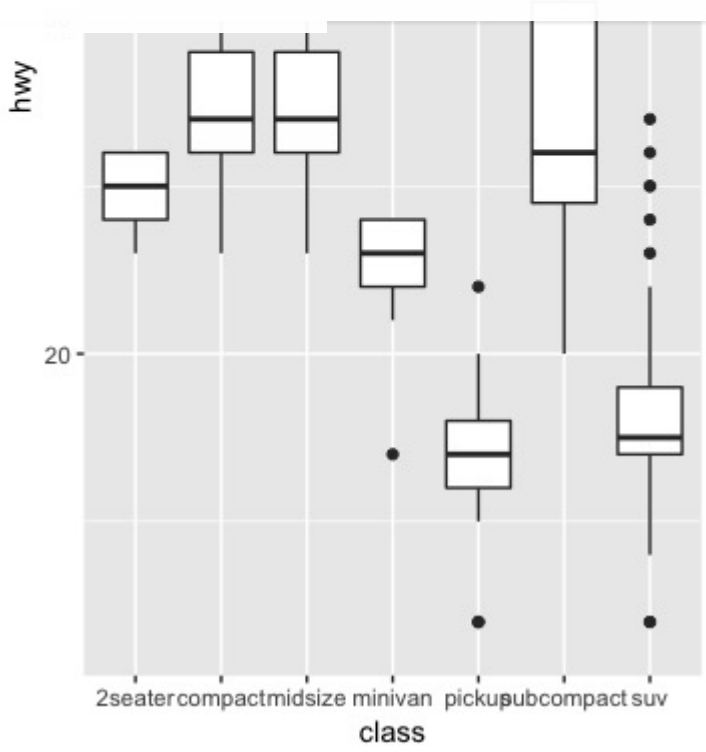


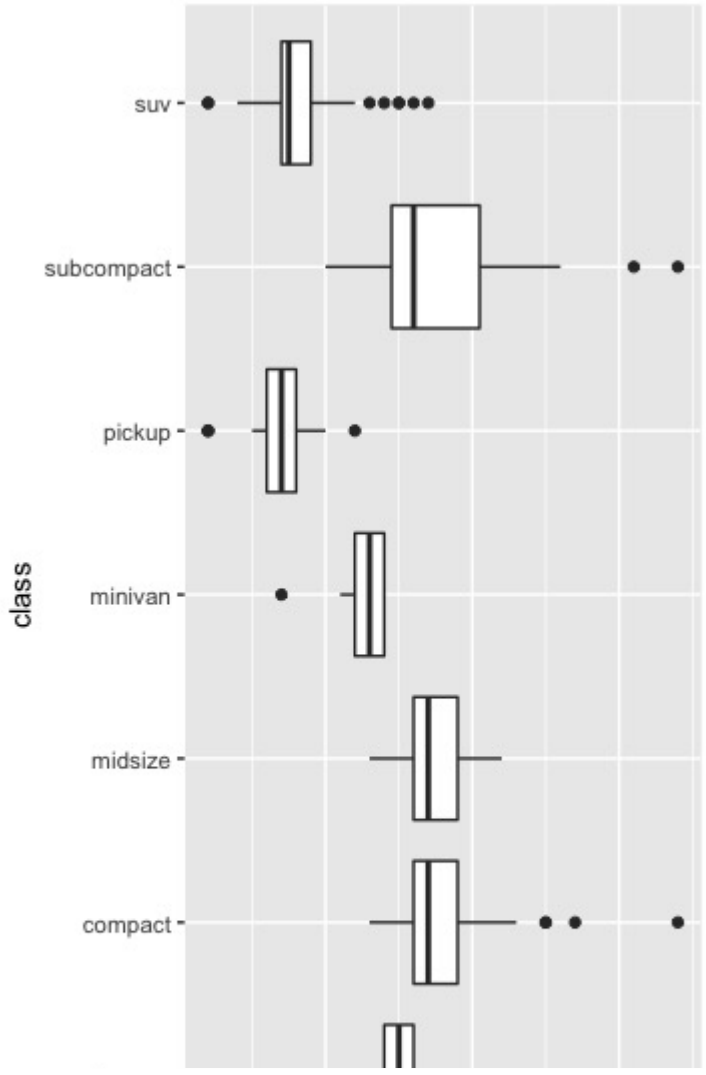

```
#Example
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x = cut, fill = clarity), position = "dodge")
```

```
#Template
ggplot(data = <DATA>) +
  geom_bar(mapping = aes(x = <VARIABLE 1>, fill = <VARIABLE 2>), position = "dodge")
```

Switches the x and y axes





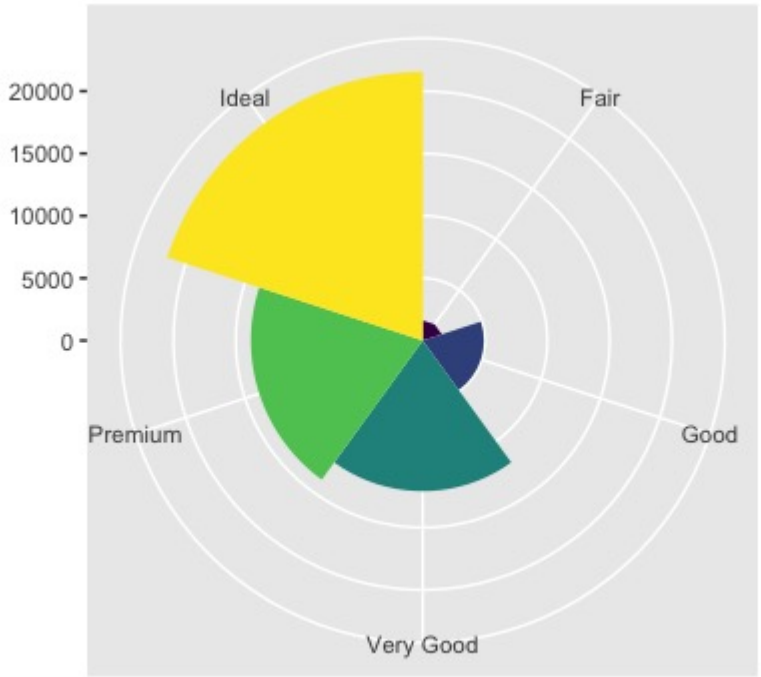



```
#Example
ggplot(data = mpg, mapping = aes(x = class, y = hwy)) +
  geom_boxplot() +
  coord_flip()
```

```
#Template
ggplot(data = <data>, mapping = aes(x = <VARIABLE 1>, y = <VARIABLE 2>)) +
  geom_boxplot() +
  coord_flip()
```

Polar plot

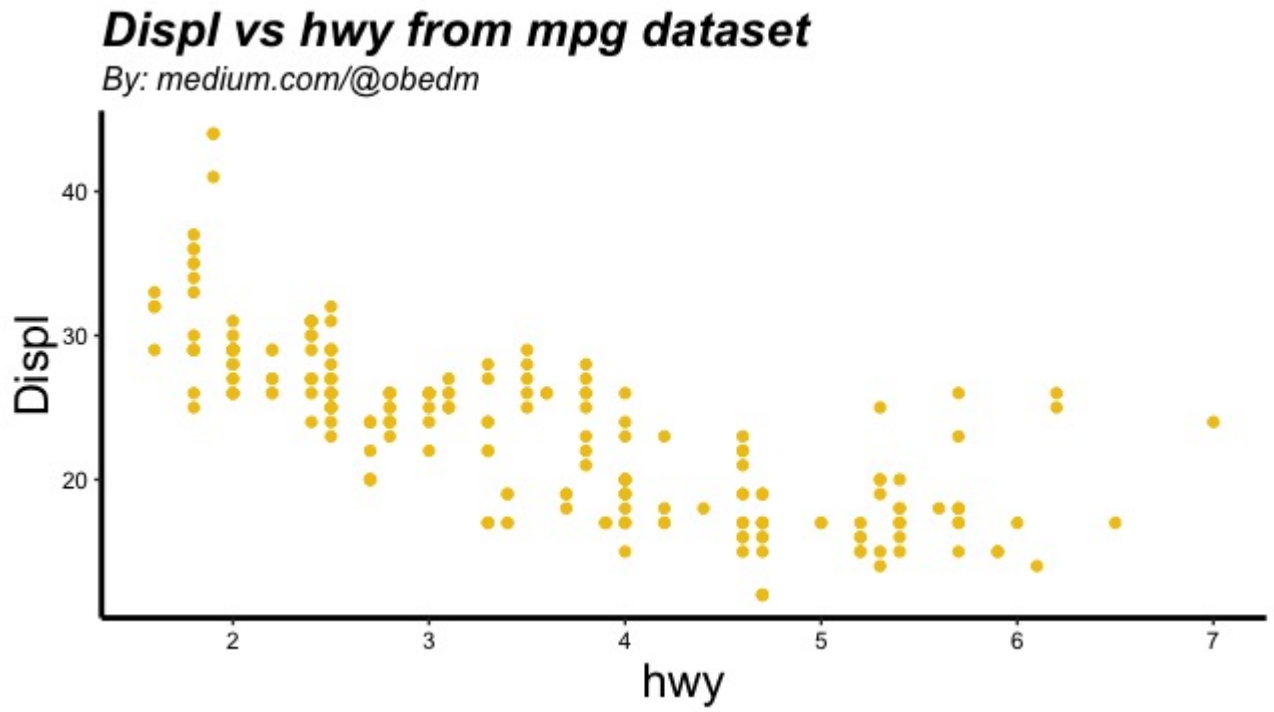
Polar coordinates reveal an interesting connection between a bar chart and a Coxcomb chart.




```
#Example
bar <- ggplot(data = diamonds) +
  geom_bar(
    mapping = aes(x = cut, fill = cut),
    show.legend = FALSE,
    width = 1
  ) +
```

```
bar + coord_polar()
```

Full styled plot




```
#Example
ggplot(mpg, aes(x= displ, y=hwy)) +
  geom_point(stat="identity", color= "#F1C40E") +
  #geom_text(aes(label=displ), position=position_dodge(width=0.9), vjust=-0.25)+
  #facet_wrap( ~ t.y,ncol = 3 )+
  #coord_flip()+
  #ggtitle("Title Plot")+
  labs(title = "Displ vs hwy from mpg dataset", subtitle="By: medium.com/@obedm")+
  theme(plot.background = element_rect(fill = "#FFFFFF"))+
```