Motivation R and graphics

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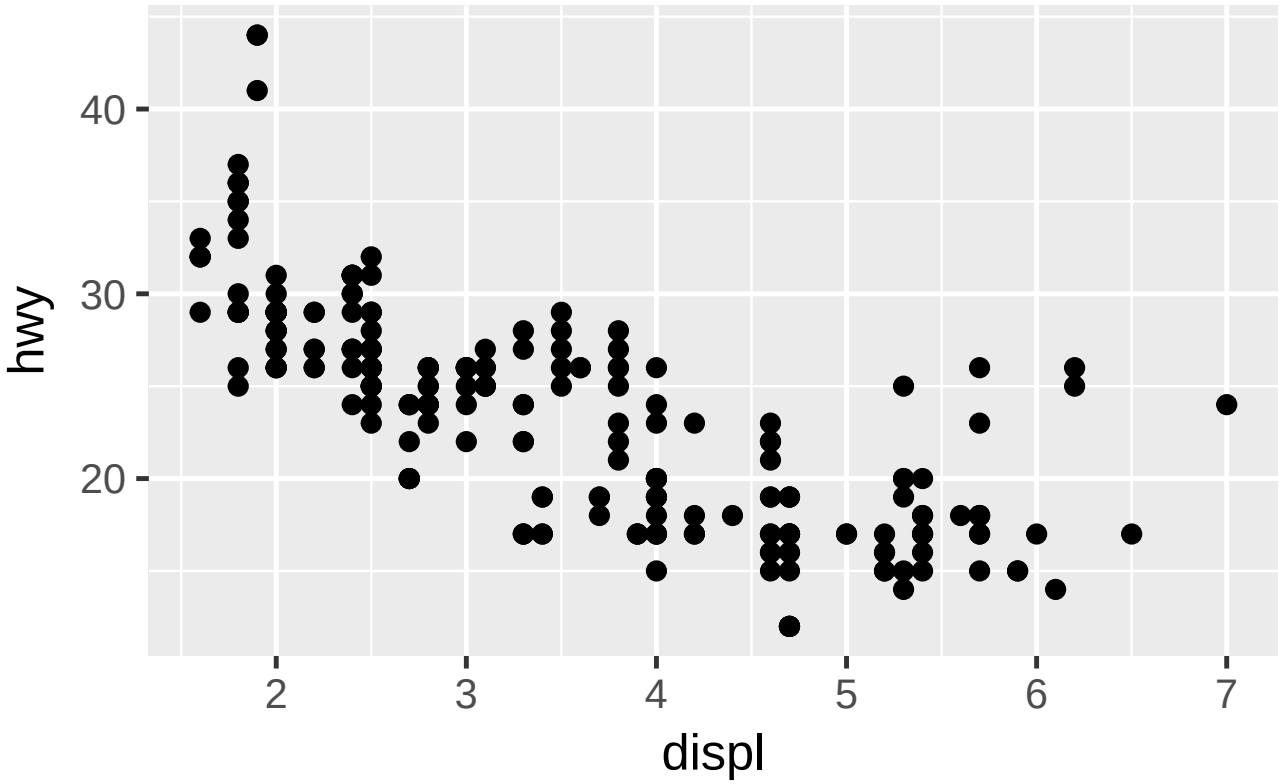
The **g**rammar of **g**raphics is a language for describing graphs. Here are some common examples from the package ggplot2 to inspire you on how to use R to show your data.

```
install.packages("ggplot2")
library(ggplot2)
```

Scatterplot

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



Colour full scatterplots

```
p <- ggplot(data = mpg,
            mapping = aes(x = displ, y = hwy,
```

```
                    colour = manufacturer)) +
      geom_point()
p
p + geom_smooth(method = "lm")
```

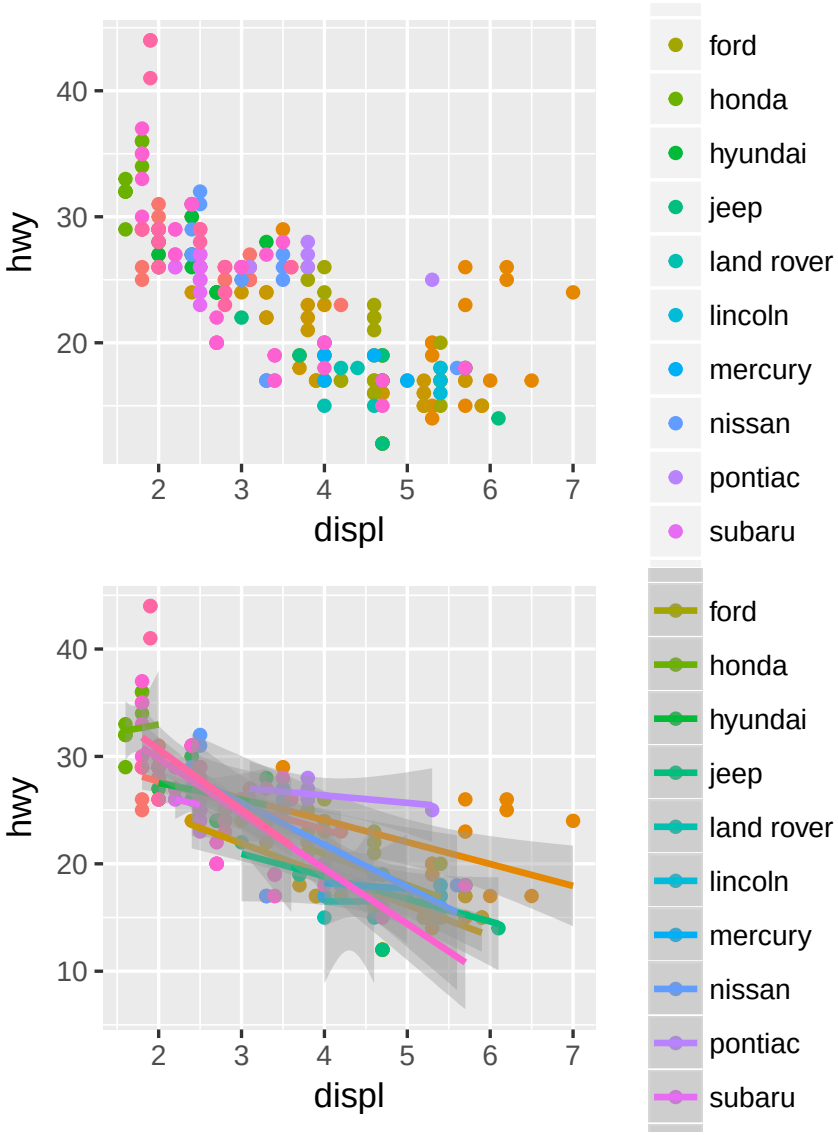
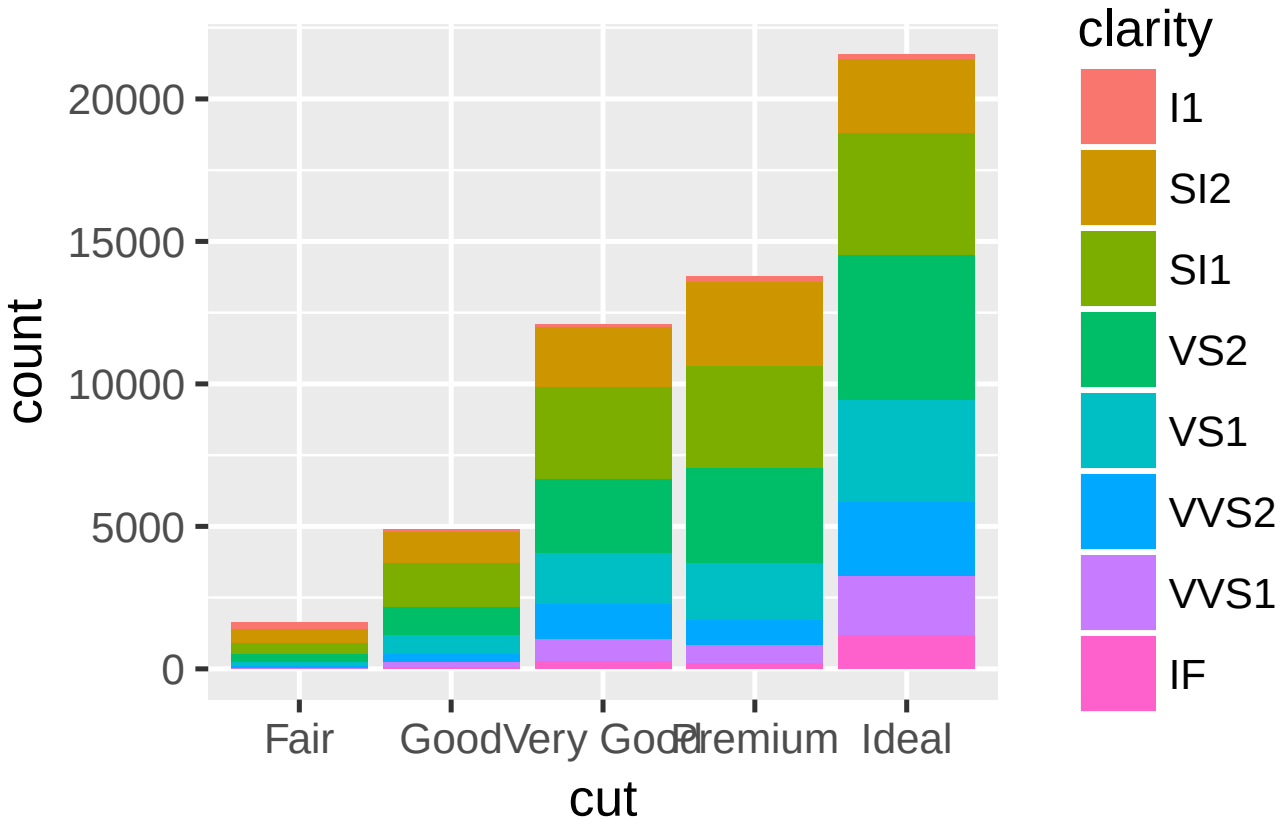


Figure 1: Two plots in one figure environment

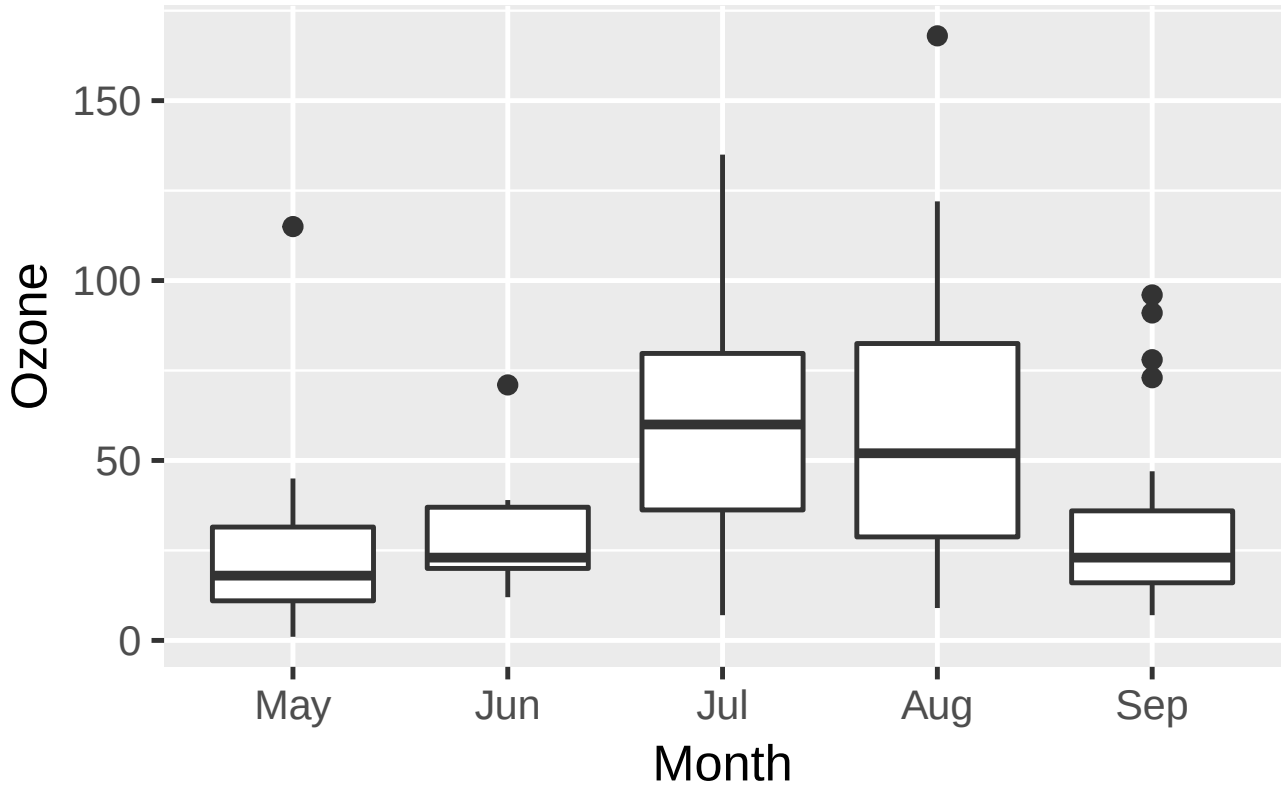
Stacked barplot

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


count
20000
15000
10000
5000
0
Fair
Good
Very Good
Premium
Ideal
cut
clarity
I1
SI2
SI1
VS2
VS1
VVS2
VVS1
IF

Boxplots

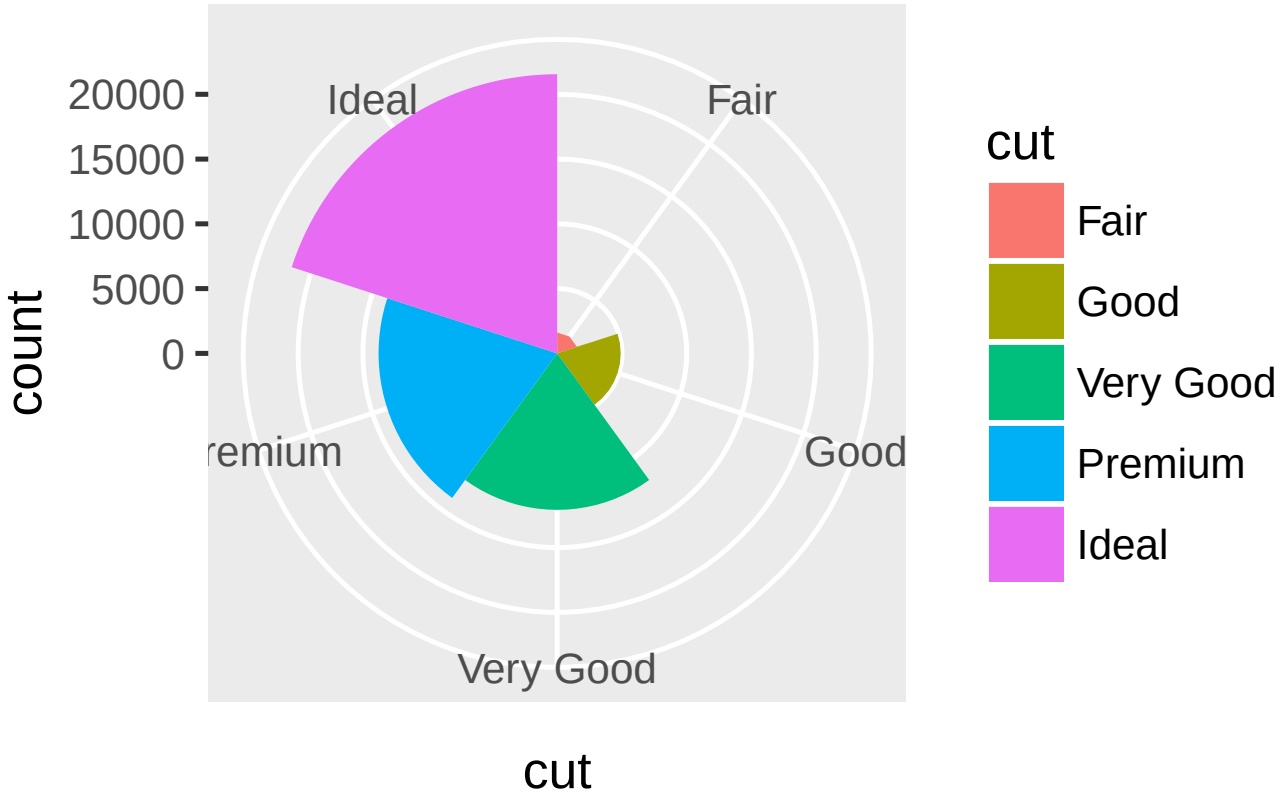
```
library(datasets)

data(airquality)
airquality$Month <- factor(
             airquality$Month,
             labels = c("May",
                        "Jun",
                        "Jul",
                        "Aug",
                        "Sep"))

ggplot(data = airquality) +
  geom_boxplot(mapping =
                 aes(x = Month, y = Ozone))
```



Polar plot

```
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x = cut, fill = cut),
```

```
          width = 1) +
coord_polar()
```



Open source

This handout was written in Rmarkdown, and uses the open-source Tufte style. It has been published on Github pages and also as a PDF handout.

All of the information of my courses can be found on my Github repo R for Data Analysis `https://github.com/orchid00/R4da`. These resources are freely available under the Creative Commons - Attribution Licence. You may re-use and adapt the material in any way you wish, without asking permission, **provided you cite the original source**. That is a link back to the website R for Data Analysis and my ORCID 0000-0002-8990-1985.

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