First we need to load the packages we're going to use:

```
library(tidyverse) #load the tidyverse packages
library(psych) #load the psych packages for generating descriptives
library(yarrr) #load yarrr for pirate plots
library(afex) #load afex for running factorial ANOVA
library(DescTools) #load DescTools for calculating effect sizes
library(emmeans) #load emmeans for running pairwise comparisons
```

If you haven't installed a package previously, remember to type
>`install.packages("packagename")`
first.

Our data frame is called `cond` and has the following structure:

```
> str(cond)
'data.frame':   45 obs. of  3 variables:
 $ Participant: num  1 2 3 4 5 6 7 8 9 10 ...
 $ Condition  : Factor w/ 3 levels "Water","Double Espresso",..: 1 1 1 1 1 1
1 1 1 1 ...
 $ Ability    : num  4.82 5.41 5.73 4.36 5.47 …

> head(cond)
  Participant Condition  Ability
1           1     Water 4.817174
2           2     Water 5.410972
3           3     Water 5.733776
4           4     Water 4.361721
5           5     Water 5.471650
6           6     Water 5.502422
```

We have three columns - Participant number, Condition, and Ability. Condition is our IV, and Ability our DV. Note, our data are in tidy format with one observation per row.