

# Lesson 2: Base R vs Tidy R - Homework

Instructor: Emily Markowitz (Emily.Markowitz@noaa.gov)

January 25, 2021

## Questions:

### 1. Let's explore Tidyverse!

- Think of Tidyverse as a family of packages. Which packages are loaded with `{tidyverse}`? What do each of these packages do? Check out: <https://tidyverse.tidyverse.org/>
- Which package is `pivot_wider` from?
- Which package is `rename` from?
- Can you use `{tidyverse}` without `{base}` R?

### 2. Let's play with some data!

You can view the dataset `CO2` in more detail using `View(CO2)` and learn about it using `?CO2`. `CO2` comes from the `{datasets}` package which should already be automatically loaded in your R.

Some info about the `CO2` dataset: "The `CO2` data frame has 84 rows and 5 columns of data from an experiment on the cold tolerance of the grass species *Echinochloa crus-galli*."

```
# Note: This function or data set name (in this case, data set)
# may occur in other packages so here I am using the "::" to say I
# specifically want the data 'CO2' from {datasets}.
CO2<-data.frame(datasets::CO2)
head(CO2)
```

```
##   Plant   Type Treatment conc uptake
## 1   Qn1 Quebec nonchilled   95   16.0
## 2   Qn1 Quebec nonchilled  175   30.4
## 3   Qn1 Quebec nonchilled  250   34.8
## 4   Qn1 Quebec nonchilled  350   37.2
## 5   Qn1 Quebec nonchilled  500   35.3
## 6   Qn1 Quebec nonchilled  675   39.2
```

a. `rename()` the “conc” column to “Concentration mL/L” and “Treatment” column to “Condition”. The new name for the conc column is not a great name (dare I say ‘tidy’ name?) so we’ll fix that in the next question. Assign your object here as a new object (name up to you!).

b. Use the `{janitor}` function `clean_names` on the new CO2 data you just created in 2a. What does it do? How did `{janitor}` change our “Concentration mL/L” column?

Again, assign your object here as a new object (name up to you!).

c. Use `pivot_wider` make columns of uptake (`values_from`) for each plant (`names_from`) in your new data set from question 2b.

This is not a ‘tidy’ way of looking at data, but is good practice! Assign your object here as a new object (name up to you!).

d. Use `pivot_longer` to undo what you did in 2c using the data that you created in 2c.

To see how to get the old names back, check out the `names_to` and `values_to` variable in `?pivot_longer`. This will likely incur some new rows with NAs, so you’ll need to remove that here with `values_drop_na`. You can check if you actually got it back to original form by seeing if the dimensions of the data.frame are the same as the original dataset. As stated earlier, `dim(datasets::CO2)` was 84 rows and 5 columns.