

Lesson 2: Base R vs Tidy R - Homework

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Questions:

1. Let's explore Tidyverse!

- a. 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/>
- b. Which package is `pivot_wider` from?
- c. Which package is `rename` from?
- d. 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  
CO2<-data.frame(datasets::CO2)  
kable(head(CO2))
```

Plant
Type
Treatment
conc
uptake
Qn1
Quebec
nonchilled
95

16.0
Qn1
Quebec
nonchilled
175
30.4
Qn1
Quebec
nonchilled
250
34.8
Qn1
Quebec
nonchilled
350
37.2
Qn1
Quebec
nonchilled
500
35.3
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.