Examples - Using `pivot_taller()` and `pivot_wider()`

Example of `tibble()` and `tribble()` functions to create a data_frame.

```r
library(tidyverse)

BP_narrow <- tibble(
  x = c("a", "b"),
  y = c(1,2),
  z = c(3.6, 8.5)
)

BP_narrow <- tribble(
  ~x, ~y, ~z,
  "a", 2, 3.6,
  "b", 1, 8.5
)

BP_narrow <- tribble(
  ~subject, ~when, ~spb,
  "BHO", "before", 160,
  "GWB", "before", 120,
  "WJC", "before", 105,
  "BHO", "after", 115,
  "GWB", "after", 135,
  "WJC", "after", 145
)
```

Examples of `pivot_taller()` and `pivot_wider()`

```r
BP_wide <- BP_narrow %>% pivot_wider(names_from = "when", values_from = "spb")
BP_wide

## # A tibble: 3 x 3
## subject before after
## <chr> <dbl> <dbl>
## 1 BHO 160 115
## 2 GWB 120 135
## 3 WJC 105 145

BP_narrow_new <- BP_wide %>% pivot_longer(c("before", "after"), names_to = "when", values_to = "spb")
BP_narrow_new

## # A tibble: 6 x 3
## subject when spb
## <chr> <chr> <dbl>
## 1 BHO before 160
## 2 BHO after 115
## 3 GWB before 120
```
Or we can remove the subject column and use the remaining two columns before and after.

```r
BP_narrow_new <- BP_wide %>% pivot_longer(~subject, names_to = "when", values_to = "spb")
```

BP_narrow_new

Example `spread()`

Try the code in Section 5.2.4 on pages 101-103. Try to use the new `pivot_wider()` function.

```r
library(babynames)

babynames
```

Example `for`

Try the code on pages 104-105

Example `apply()`

Try the code on pages 106-107
Next week we will take a look at the *map* functions from the *purrr* R package, which are modern alternatives to *for* loops and the *apply()* functions.