Untitled

2024-11-21

```r
setwd("~/Desktop/Personal_save/Stat_405_Module_13/Lab_13.2")
```

1.) (Use R) billboard is a data set in tidyr. This is an typical example of a longitudinal data in a wide form. Reshape the data set from wide to long.

```r
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(tidyr)
data(billboard)
glimpse(billboard)
```

```
## Rows: 317
## Columns: 79
## $ artist       <chr> "2 Pac", "2Ge+her", "3 Doors Down", "3 Doors Down", "504 ~
## $ track        <chr> "Baby Don't Cry (Keep...", "The Hardest Part Of ...", "Kr~
## $ date.entered <date> 2000-02-26, 2000-09-02, 2000-04-08, 2000-10-21, 2000-04-~
## $ wk1          <dbl> 87, 91, 81, 76, 57, 51, 97, 84, 59, 76, 84, 57, 50, 71, 7~
## $ wk2          <dbl> 82, 87, 70, 76, 34, 39, 97, 62, 53, 76, 84, 47, 39, 51, 6~
## $ wk3          <dbl> 72, 92, 68, 72, 25, 34, 96, 51, 38, 74, 75, 45, 30, 28, 5~
## $ wk4          <dbl> 77, NA, 67, 69, 17, 26, 95, 41, 28, 69, 73, 29, 28, 18, 4~
## $ wk5          <dbl> 87, NA, 66, 67, 17, 26, 100, 38, 21, 68, 73, 23, 21, 13, ~
## $ wk6          <dbl> 94, NA, 57, 65, 31, 19, NA, 35, 18, 67, 69, 18, 19, 13, 3~
## $ wk7          <dbl> 99, NA, 54, 55, 36, 2, NA, 35, 16, 61, 68, 11, 20, 11, 34~
## $ wk8          <dbl> NA, NA, 53, 59, 49, 2, NA, 38, 14, 58, 65, 9, 17, 1, 29, ~
## $ wk9          <dbl> NA, NA, 51, 62, 53, 3, NA, 38, 12, 57, 73, 9, 17, 1, 27, ~
## $ wk10         <dbl> NA, NA, 51, 61, 57, 6, NA, 36, 10, 59, 83, 11, 17, 2, 30,~
## $ wk11         <dbl> NA, NA, 51, 61, 64, 7, NA, 37, 9, 66, 92, 1, 17, 2, 36, N~
## $ wk12         <dbl> NA, NA, 51, 59, 70, 22, NA, 37, 8, 68, NA, 1, 3, 3, 37, N~
## $ wk13         <dbl> NA, NA, 47, 61, 75, 29, NA, 38, 6, 61, NA, 1, 3, 3, 39, N~
## $ wk14         <dbl> NA, NA, 44, 66, 76, 36, NA, 49, 1, 67, NA, 1, 7, 4, 49, N~
## $ wk15         <dbl> NA, NA, 38, 72, 78, 47, NA, 61, 2, 59, NA, 4, 10, 12, 57,~
## $ wk16         <dbl> NA, NA, 28, 76, 85, 67, NA, 63, 2, 63, NA, 8, 17, 11, 63,~
## $ wk17         <dbl> NA, NA, 22, 75, 92, 66, NA, 62, 2, 67, NA, 12, 25, 13, 65~
## $ wk18         <dbl> NA, NA, 18, 67, 96, 84, NA, 67, 2, 71, NA, 22, 29, 15, 68~
## $ wk19         <dbl> NA, NA, 18, 73, NA, 93, NA, 83, 3, 79, NA, 23, 29, 18, 79~
## $ wk20         <dbl> NA, NA, 14, 70, NA, 94, NA, 86, 4, 89, NA, 43, 40, 20, 86~
## $ wk21         <dbl> NA, NA, 12, NA, NA, NA, NA, NA, 5, NA, NA, 44, 43, 30, NA~
```

```
## $ wk22         <dbl> NA, NA, 7, NA, NA, NA, NA, NA, 5, NA, NA, NA, 50, 40, NA,~
## $ wk23         <dbl> NA, NA, 6, NA, NA, NA, NA, NA, 6, NA, NA, NA, NA, 39, NA,~
## $ wk24         <dbl> NA, NA, 6, NA, NA, NA, NA, NA, 9, NA, NA, NA, NA, 44, NA,~
## $ wk25         <dbl> NA, NA, 6, NA, NA, NA, NA, NA, 13, NA, NA, NA, NA, NA, NA~
## $ wk26         <dbl> NA, NA, 5, NA, NA, NA, NA, NA, 14, NA, NA, NA, NA, NA, NA~
## $ wk27         <dbl> NA, NA, 5, NA, NA, NA, NA, NA, 16, NA, NA, NA, NA, NA, NA~
## $ wk28         <dbl> NA, NA, 4, NA, NA, NA, NA, NA, 23, NA, NA, NA, NA, NA, NA~
## $ wk29         <dbl> NA, NA, 4, NA, NA, NA, NA, NA, 22, NA, NA, NA, NA, NA, NA~
## $ wk30         <dbl> NA, NA, 4, NA, NA, NA, NA, NA, 33, NA, NA, NA, NA, NA, NA~
## $ wk31         <dbl> NA, NA, 4, NA, NA, NA, NA, NA, 36, NA, NA, NA, NA, NA, NA~
## $ wk32         <dbl> NA, NA, 3, NA, NA, NA, NA, NA, 43, NA, NA, NA, NA, NA, NA~
## $ wk33         <dbl> NA, NA, 3, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk34         <dbl> NA, NA, 3, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk35         <dbl> NA, NA, 4, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk36         <dbl> NA, NA, 5, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk37         <dbl> NA, NA, 5, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk38         <dbl> NA, NA, 9, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk39         <dbl> NA, NA, 9, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA~
## $ wk40         <dbl> NA, NA, 15, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk41         <dbl> NA, NA, 14, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk42         <dbl> NA, NA, 13, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk43         <dbl> NA, NA, 14, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk44         <dbl> NA, NA, 16, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk45         <dbl> NA, NA, 17, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk46         <dbl> NA, NA, 21, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk47         <dbl> NA, NA, 22, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk48         <dbl> NA, NA, 24, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk49         <dbl> NA, NA, 28, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk50         <dbl> NA, NA, 33, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk51         <dbl> NA, NA, 42, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk52         <dbl> NA, NA, 42, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk53         <dbl> NA, NA, 49, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk54         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk55         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk56         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk57         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk58         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk59         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk60         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk61         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk62         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk63         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk64         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk65         <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk66         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk67         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk68         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk69         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk70         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk71         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk72         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk73         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk74         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
## $ wk75         <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
```

```
## $ wk76              <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N~
```

```r
billboard %>%
pivot_longer(cols = -c(artist,track,date.entered), names_to = "Week", values_to = "ranking")
```

```
## # A tibble: 24,092 x 5
##     artist track                  date.entered Week   ranking
##     <chr>  <chr>                  <date>       <chr>    <dbl>
##  1 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk1        87
##  2 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk2        82
##  3 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk3        72
##  4 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk4        77
##  5 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk5        87
##  6 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk6        94
##  7 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk7        99
##  8 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk8        NA
##  9 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk9        NA
## 10 2 Pac  Baby Don't Cry (Keep... 2000-02-26   wk10       NA
## # i 24,082 more rows
```