# Week 9 Challenge

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#Codealong

```r
#Tidy Data
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----------------------- tidyverse 2.0.0 --
## v dplyr     1.1.3     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.4.3     v tibble    3.2.1
## v lubridate 1.9.2     v tidyr     1.3.0
## v purrr     1.0.2
## -- Conflicts ------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```r
tidydata <- tribble(
~country, ~year, ~cases, ~population,
"Afghanistan", 1999, 745, 19987071,
"Afghanistan", 2000, 2666, 20595360,
"Brazil", 1999, 37737, 172006362,
"Brazil", 2000, 80488, 174504898,
"China", 1999, 212258, 1272915272,
"China", 2000, 213766, 1280428583)
tidydata
```

```
## # A tibble: 6 x 4
##   country      year  cases population
##   <chr>       <dbl>  <dbl>      <dbl>
## 1 Afghanistan  1999    745   19987071
## 2 Afghanistan  2000   2666   20595360
## 3 Brazil       1999  37737  172006362
## 4 Brazil       2000  80488  174504898
## 5 China        1999 212258 1272915272
## 6 China        2000 213766 1280428583
```

```r
#Non-tidy Data
nontidydata <- tribble(
 ~country,~year,~rate,
"Afghanistan", 1999, "745/19987071",
```

```
"Afghanistan", 2000, "2666/20595360",
"Brazil", 1999, "37737/172006362",
"Brazil", 2000, "80488/174504898",
"China", 1999, "212258/1272915272",
"China", 2000, "213766/1280428583")
nontidydata
```

```
## # A tibble: 6 x 3
##   country      year rate
##   <chr>       <dbl> <chr>
## 1 Afghanistan  1999 745/19987071
## 2 Afghanistan  2000 2666/20595360
## 3 Brazil       1999 37737/172006362
## 4 Brazil       2000 80488/174504898
## 5 China        1999 212258/1272915272
## 6 China        2000 213766/1280428583
```

```
#Tidying nontidydata: Example 1
tidieddata <- nontidydata %>%
 separate(rate, into = c("cases",
 "population"),
 sep = "/")
tidieddata
```

```
## # A tibble: 6 x 4
##   country      year cases   population
##   <chr>       <dbl> <chr>   <chr>
## 1 Afghanistan  1999 745     19987071
## 2 Afghanistan  2000 2666    20595360
## 3 Brazil       1999 37737   172006362
## 4 Brazil       2000 80488   174504898
## 5 China        1999 212258  1272915272
## 6 China        2000 213766  1280428583
```

```
newtidieddata <- tidieddata %>%
 pivot_longer(
 cols = cases:population,
 names_to = "measurement"
,
 values_to = "value"
 )
newtidieddata
```

```
## # A tibble: 12 x 4
##   country      year measurement value
##   <chr>       <dbl> <chr>       <chr>
## 1 Afghanistan 1999 cases        745
## 2 Afghanistan 1999 population   19987071
## 3 Afghanistan 2000 cases        2666
## 4 Afghanistan 2000 population   20595360
## 5 Brazil      1999 cases        37737
## 6 Brazil      1999 population   172006362
```

```
##  7 Brazil       2000 cases        80488
##  8 Brazil       2000 population   174504898
##  9 China        1999 cases        212258
## 10 China        1999 population   1272915272
## 11 China        2000 cases        213766
## 12 China        2000 population   1280428583
```

```r
#Tidying Data: Example 2
df <- tribble(
 ~id, ~bp1, ~bp2,
 "A", 100, 120,
 "B", 140, 115,
 "C", 120, 125
)
df
```

```
## # A tibble: 3 x 3
##    id      bp1   bp2
##    <chr> <dbl> <dbl>
## 1 A       100   120
## 2 B       140   115
## 3 C       120   125
```

```r
df %>%
 pivot_longer(
 cols = bp1:bp2,
 names_to = "measurement",
 values_to = "value"
 )
```

```
## # A tibble: 6 x 3
##    id    measurement value
##    <chr> <chr>       <dbl>
## 1 A      bp1           100
## 2 A      bp2           120
## 3 B      bp1           140
## 4 B      bp2           115
## 5 C      bp1           120
## 6 C      bp2           125
```

```r
#Reshaping data: Example 3
newtidieddata
```

```
## # A tibble: 12 x 4
##    country       year measurement value
##    <chr>        <dbl> <chr>       <chr>
##  1 Afghanistan   1999 cases       745
##  2 Afghanistan   1999 population  19987071
##  3 Afghanistan   2000 cases       2666
##  4 Afghanistan   2000 population  20595360
##  5 Brazil        1999 cases       37737
##  6 Brazil        1999 population  172006362
```

```
##  7 Brazil        2000 cases       80488
##  8 Brazil        2000 population  174504898
##  9 China         1999 cases       212258
## 10 China         1999 population  1272915272
## 11 China         2000 cases       213766
## 12 China         2000 population  1280428583
```

```r
newtidieddata %>%
 pivot_wider(names_from="measurement",
 values_from="value")
```

```
## # A tibble: 6 x 4
##   country      year cases  population
##   <chr>       <dbl> <chr>  <chr>
## 1 Afghanistan  1999 745    19987071
## 2 Afghanistan  2000 2666   20595360
## 3 Brazil       1999 37737  172006362
## 4 Brazil       2000 80488  174504898
## 5 China        1999 212258 1272915272
## 6 China        2000 213766 1280428583
```

```r
#Reshaping data: Example 4
df <- tribble(
 ~id, ~measurement, ~value,
 "A", "bp1", 100,
 "B", "bp1", 140,
 "B", "bp2", 115,
 "A", "bp2", 120,
 "A", "bp3", 105
)
df
```

```
## # A tibble: 5 x 3
##   id    measurement value
##   <chr> <chr>       <dbl>
## 1 A     bp1           100
## 2 B     bp1           140
## 3 B     bp2           115
## 4 A     bp2           120
## 5 A     bp3           105
```

```r
df %>%
 pivot_wider(
 names_from = measurement,
 values_from = value
 )
```

```
## # A tibble: 2 x 4
##   id      bp1   bp2   bp3
##   <chr> <dbl> <dbl> <dbl>
## 1 A       100   120   105
## 2 B       140   115    NA
```

#Challenge

```
#Question 1
tidybillboard<- billboard%>%
pivot_longer(
  cols= starts_with("wk"),
  names_to = "week",
  values_to = "rank",
  values_drop_na=T,
  )

tidybillboard <- mutate(tidybillboard,week = parse_number(week))

tidybillboard
```

```
## # A tibble: 5,307 x 5
##     artist  track                  date.entered  week  rank
##     <chr>   <chr>                  <date>        <dbl> <dbl>
##  1 2 Pac    Baby Don't Cry (Keep... 2000-02-26       1    87
##  2 2 Pac    Baby Don't Cry (Keep... 2000-02-26       2    82
##  3 2 Pac    Baby Don't Cry (Keep... 2000-02-26       3    72
##  4 2 Pac    Baby Don't Cry (Keep... 2000-02-26       4    77
##  5 2 Pac    Baby Don't Cry (Keep... 2000-02-26       5    87
##  6 2 Pac    Baby Don't Cry (Keep... 2000-02-26       6    94
##  7 2 Pac    Baby Don't Cry (Keep... 2000-02-26       7    99
##  8 2Ge+her  The Hardest Part Of ... 2000-09-02       1    91
##  9 2Ge+her  The Hardest Part Of ... 2000-09-02       2    87
## 10 2Ge+her  The Hardest Part Of ... 2000-09-02       3    92
## # i 5,297 more rows
```

```
ggplot(data = tidybillboard, mapping = aes(x=week, y=rank,group=track), environment = parent.frame()) +
```

## Graph of Rank against Week
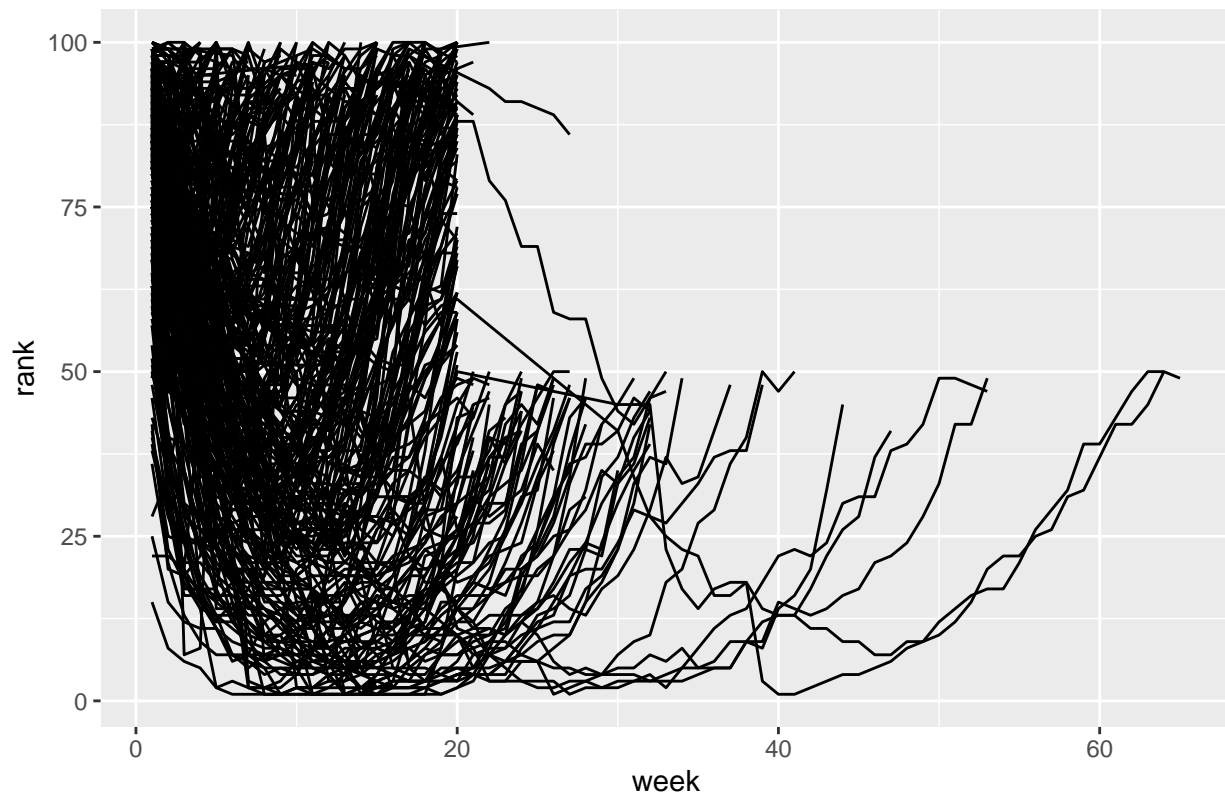


```
#Question 2
distinct(cms_patient_experience,measure_cd)
```

```
## # A tibble: 6 x 1
##   measure_cd
##   <chr>
## 1 CAHPS_GRP_1
## 2 CAHPS_GRP_2
## 3 CAHPS_GRP_3
## 4 CAHPS_GRP_5
## 5 CAHPS_GRP_8
## 6 CAHPS_GRP_12
```

```
## 6 CAHPS_GRP_12
tidycms<- cms_patient_experience%>%
pivot_wider(
id_cols= starts_with("org"),
names_from="measure_cd",
values_from = "prf_rate"
)
tidycms
```

```
## # A tibble: 95 x 8
##   org_pac_id org_nm CAHPS_GRP_1 CAHPS_GRP_2 CAHPS_GRP_3 CAHPS_GRP_5 CAHPS_GRP_8
##   <chr>      <chr>        <dbl>       <dbl>       <dbl>       <dbl>       <dbl>
```

```
##  1 0446157747 USC C~          63      87      86      57      85
##  2 0446162697 ASSOC~         59      85      83      63      88
##  3 0547164295 BEAVE~         49      NA      75      44      73
##  4 0749333730 CAPE ~         67      84      85      65      82
##  5 0840104360 ALLIA~         66      87      87      64      87
##  6 0840109864 REX H~         73      87      84      67      91
##  7 0840513552 SCL H~         58      83      76      58      78
##  8 0941545784 GRITM~         46      86      81      54      NA
##  9 1052612785 COMMU~         65      84      80      58      87
## 10 1254237779 OUR L~         61      NA      NA      65      NA
## # i 85 more rows
## # i 1 more variable: CAHPS_GRP_12 <dbl>
```