Week 9 Code-Along + Challenge

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Create non-tidy dataset

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.2     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
```

```
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")
```

Separate value into 2 columns

```
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
```

Pivot longer

```
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
```

Pivot wider

```
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
```

```
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
```

Scraping Data

```
library(rvest)
```

```
##
## Attaching package: 'rvest'
```

```
## The following object is masked from 'package:readr':
##
##     guess_encoding
```

```
webpage <- read_html("https://books.toscrape.com")
print(webpage) # Elements of webpage
```

```
## {html_document}
## <html lang="en-us" class="no-js">
## [1] <head>\n<title>\n    All products | Books to Scrape - Sandbox\n</title>\n ...
## [2] <body id="default" class="default">\n        \n        \n    \n    \n     ...
```

```
table <- html_elements(webpage, "body")
```

Using APIs

```
library(httr)
library(jsonlite)
```

```
##
## Attaching package: 'jsonlite'
```

```
## The following object is masked from 'package:purrr':
##
##     flatten
```

```
## current data
current_county_data_url <- "https://api.covidactnow.org/v2/counties.csv?apiKey=ea6df3c7725e4e858d5c4ee63

## historic data
historic_county_data_url <-
"https://api.covidactnow.org/v2/counties.timeseries.csv?apiKey=ea6df3c7725e4e858d5c4ee639e25975"

## individual location data
individual_loc_data_url <-
"https://api.covidactnow.org/v2/county/{state}.csv?apiKey=ea6df3c7725e4e858d5c4ee639e25975"

current_county_data_url <- "https://api.covidactnow.org/v2/counties.csv?apiKey=ea6df3c7725e4e858d5c4ee63
raw_data <- GET(current_county_data_url)
raw_data$status
```

```
## [1] 200
```

```
head(raw_data$content)
```

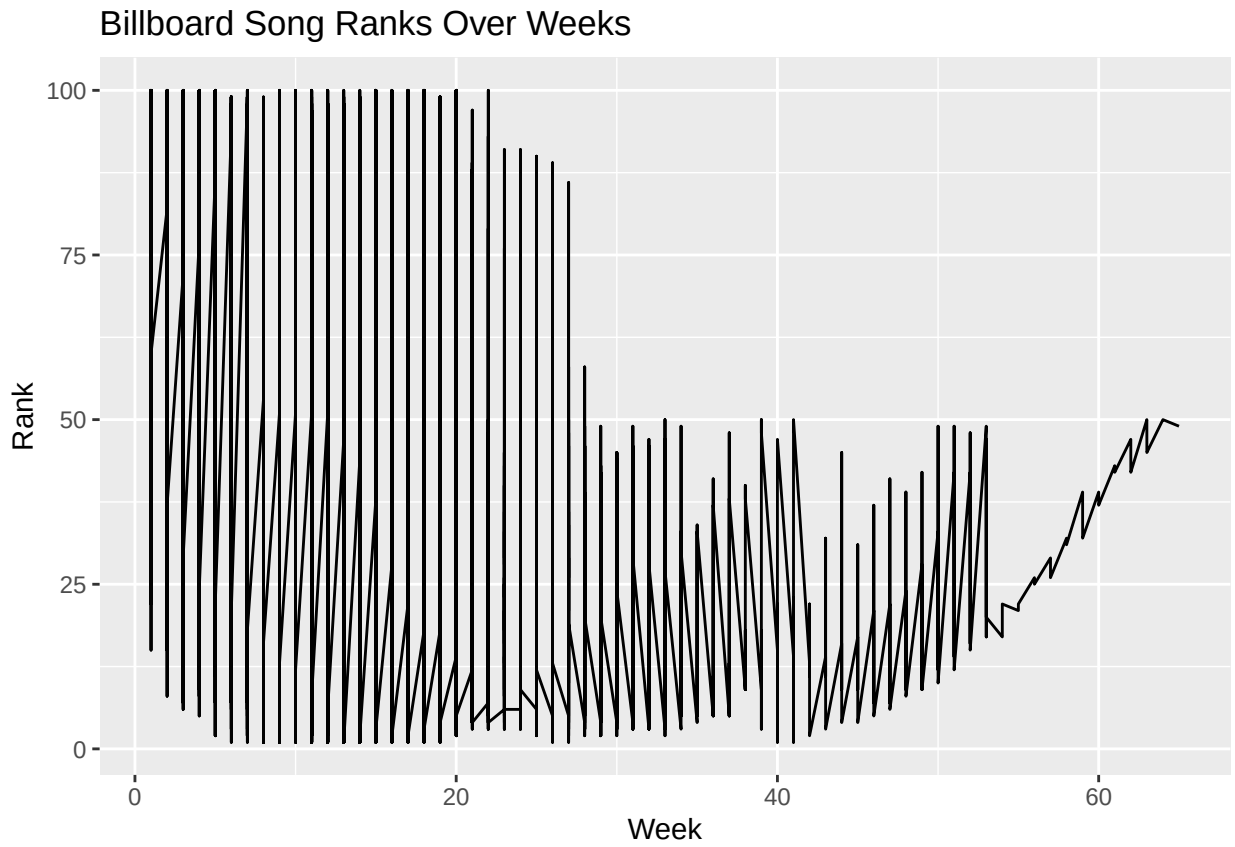
```
## [1] 66 69 70 73 2c 63
```

Challenge

Question 1

```
newbillboard <- billboard %>%
  pivot_longer(
  cols = starts_with("wk"),
  names_to = "week",
  values_to = "rank",
  values_drop_na = TRUE,) %>%
      mutate(week = parse_number(week))

ggplot(newbillboard, aes(x = week, y = rank)) +
  geom_line() +
  labs(x = "Week", y = "Rank") +
  ggtitle("Billboard Song Ranks Over Weeks")
```



Question 2

```
newdata <- cms_patient_experience %>%
  pivot_wider(names_from="measure_cd",
              values_from="prf_rate",
              id_cols = starts_with("org"))

newdata
```

```
## # 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>
```