Challenge-9

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2023-10-16

load the library

```r
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
```

Question 1

```r
#dataset: billboard
billboard
```

```
## # A tibble: 317 x 79
##    artist       track date.entered   wk1   wk2   wk3   wk4   wk5   wk6   wk7   wk8
##    <chr>        <chr> <date>       <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
##  1 2 Pac        Baby~ 2000-02-26      87    82    72    77    87    94    99    NA
##  2 2Ge+her      The ~ 2000-09-02      91    87    92    NA    NA    NA    NA    NA
##  3 3 Doors D~   Kryp~ 2000-04-08      81    70    68    67    66    57    54    53
##  4 3 Doors D~   Loser 2000-10-21      76    76    72    69    67    65    55    59
##  5 504 Boyz     Wobb~ 2000-04-15      57    34    25    17    17    31    36    49
##  6 98^0         Give~ 2000-08-19      51    39    34    26    26    19     2     2
##  7 A*Teens      Danc~ 2000-07-08      97    97    96    95   100    NA    NA    NA
##  8 Aaliyah      I Do~ 2000-01-29      84    62    51    41    38    35    35    38
##  9 Aaliyah      Try ~ 2000-03-18      59    53    38    28    21    18    16    14
## 10 Adams, Yo~   Open~ 2000-08-26      76    76    74    69    68    67    61    58
## # i 307 more rows
## # i 68 more variables: wk9 <dbl>, wk10 <dbl>, wk11 <dbl>, wk12 <dbl>,
## #   wk13 <dbl>, wk14 <dbl>, wk15 <dbl>, wk16 <dbl>, wk17 <dbl>, wk18 <dbl>,
## #   wk19 <dbl>, wk20 <dbl>, wk21 <dbl>, wk22 <dbl>, wk23 <dbl>, wk24 <dbl>,
## #   wk25 <dbl>, wk26 <dbl>, wk27 <dbl>, wk28 <dbl>, wk29 <dbl>, wk30 <dbl>,
## #   wk31 <dbl>, wk32 <dbl>, wk33 <dbl>, wk34 <dbl>, wk35 <dbl>, wk36 <dbl>,
## #   wk37 <dbl>, wk38 <dbl>, wk39 <dbl>, wk40 <dbl>, wk41 <dbl>, wk42 <dbl>, ...
```
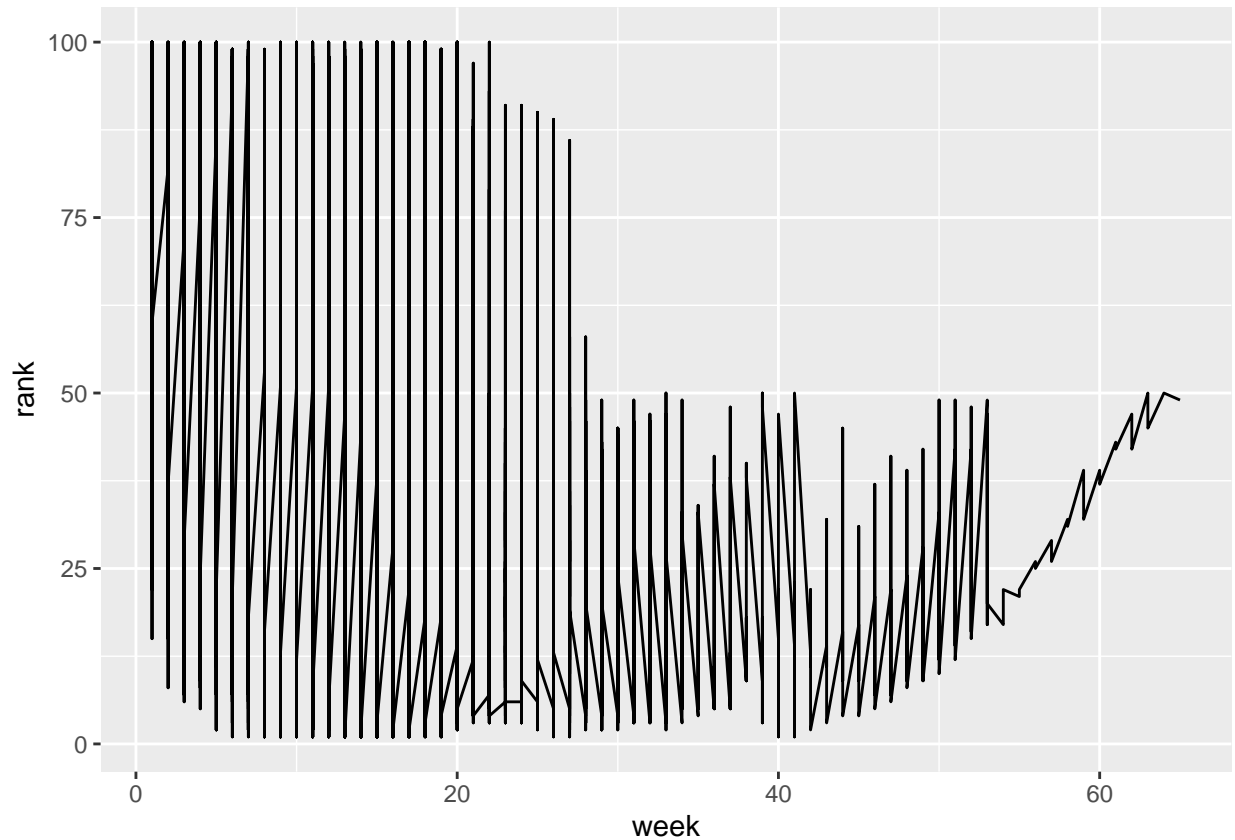
```
long <- billboard %>%
  pivot_longer(cols = starts_with("wk"), names_to = "week", values_to = "rank", values_drop_na = TRUE) %
  mutate(week = parse_number(week))

ggplot(long, aes(x = week, y = rank)) +
  geom_line()
```


Question 2

```
#dataset: cms_patient_experience
cms_patient_experience
```

```
## # A tibble: 500 x 5
##    org_pac_id org_nm                        measure_cd measure_title prf_rate
##    <chr>      <chr>                         <chr>      <chr>            <dbl>
## 1 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       63
## 2 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       87
## 3 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       86
## 4 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       57
## 5 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       85
## 6 0446157747 USC CARE MEDICAL GROUP INC     CAHPS_GRP~ CAHPS for MI~       24
## 7 0446162697 ASSOCIATION OF UNIVERSITY PHYSI~ CAHPS_GRP~ CAHPS for MI~     59
```

```
##  8 0446162697 ASSOCIATION OF UNIVERSITY PHYSI~ CAHPS_GRP~ CAHPS for MI~        85
##  9 0446162697 ASSOCIATION OF UNIVERSITY PHYSI~ CAHPS_GRP~ CAHPS for MI~        83
## 10 0446162697 ASSOCIATION OF UNIVERSITY PHYSI~ CAHPS_GRP~ CAHPS for MI~        63
## # i 490 more rows
```

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

wide
```

```
## # 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>
```