Week-9

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Slide 8

```r
library(tidyverse)
```

```
## ── Attaching core tidyverse packages ───────────────────── tidyverse 2.0.0 ──
## ✔ dplyr     1.1.3     ✔ readr     2.1.4
## ✔ forcats   1.0.0     ✔ stringr   1.5.0
## ✔ ggplot2   3.4.4     ✔ tibble    3.2.1
## ✔ lubridate 1.9.3     ✔ tidyr     1.3.0
## ✔ purrr     1.0.2
## ── Conflicts ──────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflic
ts 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 × 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
```

```
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 × 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
```

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```
nontidydata
```

```
## # A tibble: 6 × 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
```

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

tidieddata
```

```
## # A tibble: 6 × 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
```

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

newtidieddata
```

```
## # A tibble: 12 × 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
```

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```
df <- tribble(
  ~id, ~bp1, ~bp2,
  "A", 100, 120,
  "B", 140, 115,
  "C", 120, 125
)

df
```

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

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

```
## # A tibble: 6 × 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
```

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```
newtidieddata
```

```
## # A tibble: 12 × 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
```

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

```
## # A tibble: 6 × 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
```

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```
df <- tribble(
  ~id, ~measurement, ~value,
  "A", "bp1", 100,
  "B", "bp1", 140,
  "B", "bp2", 115,
  "A", "bp2", 120,
  "A", "bp3", 105
)


df
```

```
## # A tibble: 5 × 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
```

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

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

Challenge

Question 1:

```
library(tidyverse)

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

newbillboard
```

```
## # A tibble: 5,307 × 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(newbillboard,
       aes(y = rank, x = week, group = track)) +
  geom_line()
```