WS #7 - Strings

Monday, September 23, 2024

DS 002R - Jo Hardin

Name: _____

Names of people you worked with: _____

Briefly describe to the group your favorite aspect of the neighborhood where you grew up.

Task: Consider the following made up data on enrollments. Try as many of the following tasks as possible in a tidy pipeline. Use `str_*()` functions.

```
classes <- data.frame(
  sem        = c("SP2023", "FA2023", "SP2024"),
  area       = c("History", "Math", "Anthro"),
  enroll     = c("30 - people", "20 - people", "25 - people"),
  instructor = c("Ernesto Capello", "Lori Ziegelmeier", "Arjun Guneratne")
)

classes
```

```
     sem    area      enroll       instructor
1 SP2023 History 30 - people  Ernesto Capello
2 FA2023    Math 20 - people Lori Ziegelmeier
3 SP2024  Anthro 25 - people  Arjun Guneratne
```

1. Define a new variable `num` that adds up the number of characters in the `area` column.
2. Change the areas to `history`, `math`, `anthro` instead of `History`, `Math`, `Anthro`. (Hint: there is an easier way to do it than `str_replace()`.)
3. Create a variable that identifies which courses were taught in spring.
4. Change the semester labels to "fall2023", "spring2024", "spring2023".
5. In the `enroll` variable, change all e's to 3's (just because?)
6. Use `sem` to create 2 new variables: 1 with the semester (SP/FA) and 1 with the year.

Solution:

```
# Define a new variable "num" that adds up the number of characters in the area label
classes |>
  mutate(num = str_length(area))
```

```
     sem    area      enroll       instructor num
1 SP2023 History 30 - people  Ernesto Capello   7
2 FA2023    Math 20 - people Lori Ziegelmeier   4
3 SP2024  Anthro 25 - people  Arjun Guneratne   6
```

```
# Change the areas to "history", "math", "anthro"
classes |>
  mutate(area = str_to_lower(area))
```

```
     sem    area      enroll       instructor
1 SP2023 history 30 - people  Ernesto Capello
2 FA2023    math 20 - people Lori Ziegelmeier
3 SP2024  anthro 25 - people  Arjun Guneratne
```

```
# Create a variable that id's which courses were taught in spring
classes |>
  mutate(spring = str_detect(sem, "SP"))
```

```
     sem    area      enroll       instructor spring
1 SP2023 History 30 - people  Ernesto Capello   TRUE
2 FA2023    Math 20 - people Lori Ziegelmeier  FALSE
3 SP2024  Anthro 25 - people  Arjun Guneratne   TRUE
```

```
# Change the semester labels to "fall2023", "spring2024", "spring2023"
classes |>
  mutate(sem = str_replace(sem, "SP", "spring")) |>
  mutate(sem = str_replace(sem, "FA", "fall"))
```

```
         sem    area      enroll       instructor
1 spring2023 History 30 - people  Ernesto Capello
2   fall2023    Math 20 - people Lori Ziegelmeier
3 spring2024  Anthro 25 - people  Arjun Guneratne
```

```r
# In the enroll variable, change all e's to 3's (just because?)
classes |>
  mutate(enroll = str_replace_all(enroll, "e", "3"))
```

```
     sem    area      enroll       instructor
1 SP2023 History 30 - p3opl3  Ernesto Capello
2 FA2023    Math 20 - p3opl3 Lori Ziegelmeier
3 SP2024  Anthro 25 - p3opl3  Arjun Guneratne
```

```r
# Use sem to create 2 new variables, one with only the semester (SP/FA) and 1 with the year
classes |>
  mutate(semester = str_sub(sem, 1, 2),
         year = str_sub(sem, 3, 6))
```

```
     sem    area      enroll       instructor semester year
1 SP2023 History 30 - people  Ernesto Capello       SP 2023
2 FA2023    Math 20 - people Lori Ziegelmeier       FA 2023
3 SP2024  Anthro 25 - people  Arjun Guneratne       SP 2024
```