

Factors, dates, and strings

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Preamble:

Exercise 0 - Set up

Post-it up

1. Download this [CSV](#) file to your EVR 628 project folder. Save it into `data/raw/`.
2. Start a new script, call it `factors_dates_and_strings.R` and save it into your `scripts/01_processing/` folder
3. Add a code outline and load the `tidyverse` and `janitor` packages at the top of your script

Post-it down

```
## SET UP #####  
# Load packages -----  
library(janitor)  
library(tidyverse)
```

Exercise 1 - Dates

Post-it up

1. Load your data into an object called `tour_data` <- and clean the column names
2. Inspect your data. How many columns / rows? What are these columns?
3. Create a new object called `tour_data_clean` <- and add a new column called `date` that contains the date. We will build a large pipeline starting here.
4. Remove the `year`, `month`, and `day` columns that we no longer need
5. Place the `date` column all the way to the left

```
# Load data -----  
tour_data <- read_csv("data/raw/tour_data.csv") |>  
  clean_names()
```

```
dim(tour_data)
colnames(tour_data)
head(tour_data)

## PROCESSING #####
# Add a date -----
tour_data_clean <- tour_data |>
  mutate(date = make_date(year, month, day)) |>
  select(-c(year, month, day))
```

```
[1] 60 6
```

```
[1] "year"      "month"     "day"       "vessel"    "passengers"
[6] "notes"
```

```
# A tibble: 6 x 6
```

	year	month	day	vessel	passengers	notes
	<dbl>	<dbl>	<dbl>	<chr>	<dbl>	<chr>
1	2025	1	1	Condor	21	8 Sea lions; 5 Whales; 4 Whale shark
2	2025	1	7	Falcon	6	5 whale; 7 Sea lions; 5 Sea turtle; 4 sea~
3	2025	1	13	Falcon	8	5 Dolphins
4	2025	1	19	Condor	6	4 Sea turtle; 4 sea turtle
5	2025	1	25	Condor	29	2 sea turtle; 8 whale
6	2025	2	1	Falcon	19	3 Whale shark; 7 whale

Post-it down

Exercise 2 - Strings

Part 1 - Data contained in a column with strings of text

Post-it up

1. As demonstrated in class, use `separate_longer_delim()` to create one row per species mentioned in the data
2. Standardize the data so all strings appear in lowercase
3. Make sure they are all singular

```
## PROCESSING #####
# Add a date -----
tour_data_clean <- tour_data |>
  mutate(date = make_date(year, month, day)) |>
  select(date, everything(), -c(year, month, day)) |>
  separate_longer_delim(cols = notes, delim = ";") |> # 1) Separate column into new rows
  mutate(notes = str_to_lower(notes),                 # 2) All strings as lower case
         notes = str_remove(notes, "s$"))
```

Post-it down

Part 2 - Data STILL contained in a column with strings of text!

Post-it up

1. Look at the documentation for `str_extract()`
2. Run the first two examples at the bottom directly in your console. What seems to be going on?

pause to discuss

3. Using the `str_extract()` function, build a new column called `fauna` that contains the species observed¹
4. Print your data to the console. Does `fauna` look right?
5. Using the `str_extract()` function, build a new column called `n` that contains the number of organisms observed (make sure it's numeric)
6. Remove the `notes` column

```
## PROCESSING #####
# Add a date -----
tour_data_clean <- tour_data |>
  mutate(date = make_date(year, month, day)) |>
  select(date, everything(), -c(year, month, day)) |>
  separate_longer_delim(cols = notes, delim = ";") |>
  mutate(notes = str_to_lower(notes),
         notes = str_remove(notes, "s$"),
         fauna = str_extract(string = notes, pattern = "[a-z ]+$"), # 3) Extract fauna
         fauna = str_squish(fauna), # 4) Remove white space
         n = str_extract(string = notes, pattern = "[:digit:]+$"), # 5) Extract n
         n = as.numeric(n)) |> # and
  select(-notes) # 6) Remove notes
```

Post-it down

Exercise 3 - Visualization (a bit of everything)

Post-it up

1. Recreate the plot below

Post-it down

```
# Nice try... no code this time. But I am using `stat_summary(geom = "col", fun = "sum")`
```

¹Hint: Look at the documentation for `?regex`

Sightings by vessel

