Epi590 final project

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Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see https://quarto.org.

Running Code

When you click the **Render** button a document will be generated that includes both content and the output of embedded code. You can embed code like this:

```r
library(tidyverse)
```

```
Warning: package 'tidyverse' was built under R version 4.3.3

Warning: package 'ggplot2' was built under R version 4.3.3

Warning: package 'tidyr' was built under R version 4.3.3

Warning: package 'readr' was built under R version 4.3.3

Warning: package 'purrr' was built under R version 4.3.2

Warning: package 'dplyr' was built under R version 4.3.3

Warning: package 'stringr' was built under R version 4.3.3

Warning: package 'lubridate' was built under R version 4.3.3
```

```
-- Attaching core tidyverse packages ----------------------- tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.5
v forcats   1.0.0     v stringr   1.5.1
v ggplot2   3.5.1     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.1
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 becon
```

```r
library(gtsummary)
```

```
Warning: package 'gtsummary' was built under R version 4.3.3
```

```r
raw_data <- read_csv(here :: here("data", "cheeses.csv"))
```

```
Rows: 1187 Columns: 19
-- Column specification -----------------------------------------------------------------
Delimiter: ","
chr (17): cheese, url, milk, country, region, family, type, fat_content, cal...
lgl  (2): vegetarian, vegan

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
cheese <- raw_data |>
    select(cheese, milk, country, type, fat_content, vegetarian)
```

You can add options to executable code like this

```r
tbl_summary(
    cheese,
    by = type,
    include = c(milk, country, fat_content, vegetarian))
```

```
13 missing rows in the "type" column have been removed.
```

Characteristic	artisan N = 5[1]	firm
milk		
buffalo	0 (0%)	0 (
buffalo, cow	0 (0%)	0 (
buffalo, cow, sheep	0 (0%)	0 (
camel	0 (0%)	0 (
cow	3 (75%)	4 (
cow, goat	0 (0%)	0 (
cow, goat, sheep	0 (0%)	0 (
cow, goat, sheep, water buffalo	0 (0%)	0 (
cow, goat, water buffalo	0 (0%)	0 (
cow, sheep	0 (0%)	0 (
cow, water buffalo	0 (0%)	0 (
cow, yak	0 (0%)	0 (
donkey	1 (25%)	0 (
goat	0 (0%)	0 (
goat, sheep	0 (0%)	0 (
goat, yak	0 (0%)	0 (
moose	0 (0%)	0 (
plant-based	0 (0%)	0 (
sheep	0 (0%)	2 (
water buffalo	0 (0%)	0 (
yak	0 (0%)	0 (
Unknown	1	
country		
Afghanistan	0 (0%)	0 (
Albania, Bulgaria, Croatia, Greece, Israel, Macedonia, Romania, Serbia	0 (0%)	0 (
Argentina	0 (0%)	0 (
Armenia	0 (0%)	0 (
Australia	3 (60%)	0 (
Australia, France	0 (0%)	0 (
Austria	0 (0%)	0 (
Austria, Germany	0 (0%)	0 (
Bangladesh, India	0 (0%)	0 (
Belgium	0 (0%)	0 (
Belgium, Canada, France, Switzerland, United States	0 (0%)	0 (
Belgium, Germany, Netherlands	0 (0%)	0 (
Brazil	1 (20%)	0 (
Bulgaria	0 (0%)	0 (

Canada	0 (0%)	0 (
Canada, Denmark, France, Germany, Netherlands, United States	0 (0%)	0 (
Canada, France	0 (0%)	0 (
Canada, India, United States	0 (0%)	0 (
Canada, Italy	0 (0%)	0 (
Canada, United States	0 (0%)	0 (
Chile	0 (0%)	0 (
China, Nepal, Tibet	0 (0%)	0 (
China, Tibet	0 (0%)	0 (
Croatia	0 (0%)	0 (
Cyprus	0 (0%)	0 (
Cyprus, Egypt, Israel, Jordan, Lebanon, Middle East, Syria	0 (0%)	0 (
Czech Republic	0 (0%)	0 (
Denmark	0 (0%)	0 (
Denmark, Finland, Germany, Iceland, Norway, Sweden	0 (0%)	0 (
Egypt, Lebanon, Syria	0 (0%)	0 (
England	0 (0%)	1 (
England, Great Britain, United Kingdom	0 (0%)	0 (
England, Scotland, United Kingdom	0 (0%)	0 (
England, Scotland, Wales	0 (0%)	0 (
England, United Kingdom	0 (0%)	0 (
Finland	0 (0%)	0 (
France	0 (0%)	1 (
France, Italy	0 (0%)	0 (
France, Switzerland	0 (0%)	0 (
France, United States	0 (0%)	0 (
Georgia	0 (0%)	0 (
Germany	0 (0%)	0 (
Great Britain	0 (0%)	0 (
Great Britain, Scotland, United Kingdom	0 (0%)	0 (
Great Britain, United Kingdom, Wales	0 (0%)	0 (
Greece	0 (0%)	0 (
Holland	0 (0%)	0 (
Hungary	0 (0%)	0 (
Hungary, Poland, Slovakia	0 (0%)	0 (
Iceland	0 (0%)	0 (
India	0 (0%)	0 (
Iraq	0 (0%)	0 (
Ireland	0 (0%)	0 (
Israel	0 (0%)	0 (

Italy	0 (0%)	1 (
Italy, United States	0 (0%)	0 (
Lebanon, Middle East	0 (0%)	0 (
Lithuania	0 (0%)	0 (
Mauritania	0 (0%)	0 (
Mexico	0 (0%)	0 (
Mexico and Caribbean	0 (0%)	0 (
Mexico, United States	0 (0%)	0 (
Middle East	0 (0%)	0 (
Mongolia	0 (0%)	0 (
Netherlands	0 (0%)	0 (
Netherlands, United States	0 (0%)	0 (
New Zealand	0 (0%)	0 (
Poland	0 (0%)	0 (
Portugal	0 (0%)	0 (
Romania	0 (0%)	0 (
Scotland	0 (0%)	2 (:
Scotland, United Kingdom	0 (0%)	0 (
Serbia	1 (20%)	0 (
Spain	0 (0%)	0 (
Sweden	0 (0%)	0 (
Switzerland	0 (0%)	1 (
Turkey	0 (0%)	0 (
United Kingdom	0 (0%)	0 (
United Kingdom, United States	0 (0%)	0 (
United Kingdom, Wales	0 (0%)	0 (
United States	0 (0%)	0 (
Wales	0 (0%)	0 (
Unknown	0	
fat_content		
0 g/100g	0 (NA%)	0 (
10%	0 (NA%)	0 (
11%	0 (NA%)	0 (
12%	0 (NA%)	0 (
13%	0 (NA%)	0 (
14 g/100g	0 (NA%)	0 (
14%	0 (NA%)	0 (
15-25%	0 (NA%)	0 (
15%	0 (NA%)	0 (
17%	0 (NA%)	0 (

18.2 g/100g	0 (NA%)	0 (
18.3 g/100g	0 (NA%)	0 (
18.4 g/100g	0 (NA%)	0 (
20-30%	0 (NA%)	0 (
20%	0 (NA%)	0 (
20.8 g/100g	0 (NA%)	0 (
21%	0 (NA%)	0 (
22%	0 (NA%)	0 (
23%	0 (NA%)	0 (
24%	0 (NA%)	0 (
25%	0 (NA%)	0 (
25.22 g/100g	0 (NA%)	0 (
25.4 g/100g	0 (NA%)	0 (
25.5%	0 (NA%)	0 (
26%	0 (NA%)	0 (
27 g/100g	0 (NA%)	0 (
27%	0 (NA%)	0 (
28%	0 (NA%)	0 (
28.5%	0 (NA%)	0 (
29.8%	0 (NA%)	0 (
30-40%	0 (NA%)	0 (
30-45%	0 (NA%)	0 (
30%	0 (NA%)	0 (
30.5 g/100g	0 (NA%)	0 (
31%	0 (NA%)	0 (
32%	0 (NA%)	0 (
32.3 g/100g	0 (NA%)	0 (
32.5 g/100g	0 (NA%)	0 (
33 g/100g	0 (NA%)	0 (
33%	0 (NA%)	0 (
33.5 g/100g	0 (NA%)	0 (
34-48%	0 (NA%)	0 (
34%	0 (NA%)	0 (
34.2 g/100g	0 (NA%)	0 (
34.4%	0 (NA%)	0 (
35-40%	0 (NA%)	0 (
35%	0 (NA%)	0 (
36-38%	0 (NA%)	0 (
36 g/100g	0 (NA%)	0 (
37%	0 (NA%)	0 (

38%	0 (NA%)	0 (
39.6 g/100g	0 (NA%)	0 (
40-45%	0 (NA%)	0 (
40-46%	0 (NA%)	0 (
40-50%	0 (NA%)	0 (
40%	0 (NA%)	0 (
40.5%	0 (NA%)	0 (
42%	0 (NA%)	0 (
43%	0 (NA%)	0 (
43.3 g/100g	0 (NA%)	0 (
45-50%	0 (NA%)	0 (
45-60%	0 (NA%)	0 (
45%	0 (NA%)	1 (1
46-60%	0 (NA%)	0 (
46%	0 (NA%)	0 (
48%	0 (NA%)	0 (
49-53%	0 (NA%)	0 (
5 g/100g	0 (NA%)	0 (
50-60%	0 (NA%)	0 (
50%	0 (NA%)	0 (
51%	0 (NA%)	0 (
52%	0 (NA%)	0 (
54%	0 (NA%)	0 (
54.23 g/100g	0 (NA%)	0 (
55%	0 (NA%)	0 (
60%	0 (NA%)	0 (
62%	0 (NA%)	0 (
7 g/100g	0 (NA%)	0 (
7.8 g/100g	0 (NA%)	0 (
70%	0 (NA%)	0 (
72.7%	0 (NA%)	0 (
75%	0 (NA%)	0 (
8 g/100g	0 (NA%)	0 (
8%	0 (NA%)	0 (
Unknown	5	
vegetarian	3 (100%)	1 (3
Unknown	2	

[1]n (%)

The `echo: false` option disables the printing of code (only output is displayed).