Farm Store and Penguins

Get Started with Quarto

Farm Store

CPP Farm store has a selected assortment of cool fruits and vegetables right from its on-campus farm.

Featured Products:

Illustration of Multiple columns on a website

Figure 1: A sample of gift-pack prepared from CPP Grown produce

Figure 2: A sample of wine made from grapes grown right here on campus

Great gift for your loved ones. These fruits were raised by students in agriculture majors on CPP campus, processed and packed by student employees at Farm Store.

Fantastic wine produced right here CPP campus by students!

Web site menus

Use `panel-tabset` to add multiple tabs to your website.

Fruit gift packs

Figure 3: A sample of gift-pack prepared from CPP Grown produce

Rose Wine

Figure 4: A sample of wine made from grapes grown right here on campus

For beautiful graphic of fruit gift pack, see Figure 1.

Data Preparation

First, we need to:
1. load **packages**
2. read in **data**
3. check if that data is *in the right format*

Choosing Data

> Penguins are very cute!

... so let's work with penguin data today.

> **Note**
>
> For this analysis we will use the `penguins` dataset from the palmerpenguins package (Horst, Hill, and Gorman 2020).

> **Expand to learn more about where the data was collected**
>
> Data were collected and made available by Dr. Kristen Gorman and the Palmer Station, Antarctica LTER, a member of the Long Term Ecological Research Network.

Loading packages and reading data

> **Using the data without downloading it**
>
> This same dataset is also available in the almerpenguins package.

```
library(tidyverse)
library(ggthemes)
library(palmerpenguins)
library(gt)
```

By "right format", we mean that the data is tidy, and ready to be summarized and graphed.

Reading Data

```
head(penguins)
```

```
# A tibble: 6 x 8
  species island    bill_length_mm bill_depth_mm flipper_length_mm body_mass_g
  <fct>   <fct>              <dbl>         <dbl>             <int>       <int>
1 Adelie  Torgersen           39.1          18.7               181        3750
2 Adelie  Torgersen           39.5          17.4               186        3800
3 Adelie  Torgersen           40.3          18                 195        3250
4 Adelie  Torgersen           NA            NA                  NA          NA
5 Adelie  Torgersen           36.7          19.3               193        3450
6 Adelie  Torgersen           39.3          20.6               190        3650
# i 2 more variables: sex <fct>, year <int>
```

Cleaning Data

```
glimpse(penguins)
```

```
Rows: 344
Columns: 8
$ species           <fct> Adelie, Adelie, Adelie, Adelie, Adelie, Adelie, Adel~
$ island            <fct> Torgersen, Torgersen, Torgersen, Torgersen, Torgerse~
$ bill_length_mm    <dbl> 39.1, 39.5, 40.3, NA, 36.7, 39.3, 38.9, 39.2, 34.1, ~
$ bill_depth_mm     <dbl> 18.7, 17.4, 18.0, NA, 19.3, 20.6, 17.8, 19.6, 18.1, ~
$ flipper_length_mm <int> 181, 186, 195, NA, 193, 190, 181, 195, 193, 190, 186~
$ body_mass_g       <int> 3750, 3800, 3250, NA, 3450, 3650, 3625, 4675, 3475, ~
$ sex               <fct> male, female, female, NA, female, male, female, male~
$ year              <int> 2007, 2007, 2007, 2007, 2007, 2007, 2007, 2007, 2007~
```

```
penguins |>
  drop_na() -> penguins_no_na
penguins_no_na
```

```
# A tibble: 333 x 8
   species island    bill_length_mm bill_depth_mm flipper_length_mm body_mass_g
```

```
   <fct>   <fct>              <dbl>         <dbl>             <int>       <int>
 1 Adelie  Torgersen           39.1          18.7               181        3750
 2 Adelie  Torgersen           39.5          17.4               186        3800
 3 Adelie  Torgersen           40.3          18                 195        3250
 4 Adelie  Torgersen           36.7          19.3               193        3450
 5 Adelie  Torgersen           39.3          20.6               190        3650
 6 Adelie  Torgersen           38.9          17.8               181        3625
 7 Adelie  Torgersen           39.2          19.6               195        4675
 8 Adelie  Torgersen           41.1          17.6               182        3200
 9 Adelie  Torgersen           38.6          21.2               191        3800
10 Adelie  Torgersen           34.6          21.1               198        4400
# i 323 more rows
# i 2 more variables: sex <fct>, year <int>
```

We have removed missing values here, which means that the data has now 333 rows. Note that previously there were 344 rows in the original data.[1]

Code Annotation

```
library(tidyverse)
library(palmerpenguins)
penguins |>                                          ①
  mutate(                                            ②
    bill_ratio = bill_depth_mm / bill_length_mm,
    bill_area  = bill_depth_mm * bill_length_mm
  )
```

① Take `penguins`, and then,
② add new columns for the bill ratio and bill area.

Charts by Species

Figure 5 is a bar plot of species of penguins.

[1]Note that this removes any rows with missing values!

```r
penguins |>
  ggplot(aes(bill_length_mm, bill_depth_mm, color = species,
             shape = species))+
  geom_point() +
  theme_minimal() +
  scale_color_colorblind() +
  labs(x = "Bill length (mm)",
       y = "Bill depth (mm)")
```

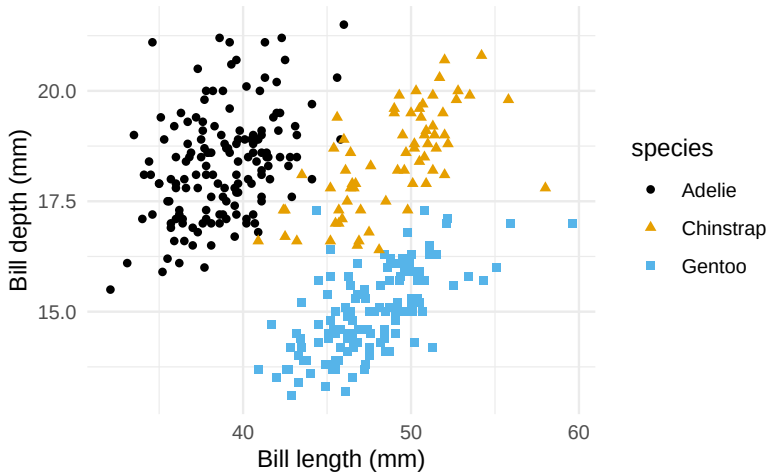

Figure 5: Penguin bill dimensions

Tables

Table 1 shows the first 10 penguins from the dataset.

```r
penguins |>
  slice_head(n = 10) |>
  select(species, island, bill_length_mm, bill_depth_mm) |>
  arrange(-bill_length_mm) |>
  gt()
```

Table 1: Top 10 penguins sorted by bill lengths

species	island	bill_length_mm	bill_depth_mm
Adelie	Torgersen	42.0	20.2
Adelie	Torgersen	40.3	18.0
Adelie	Torgersen	39.5	17.4
Adelie	Torgersen	39.3	20.6
Adelie	Torgersen	39.2	19.6
Adelie	Torgersen	39.1	18.7
Adelie	Torgersen	38.9	17.8
Adelie	Torgersen	36.7	19.3
Adelie	Torgersen	34.1	18.1
Adelie	Torgersen	NA	NA

How to post online

1. Create your content in Quarto. You need at least three documents.
    1. index.qmd
    2. another qmd file
    3. "_quarto.yml" created in Text File.
2. Reload the project from the upper-right-hand corner. After this, you should see the "Build" tab appear.
3. Click "Render Website" and confirm that you have a website with the two files combined.
4. Now it is time to publish.
    1. Move to the terminal
    2. Type "quarto publish quarto-pub" and follow the instructions there.
    3. Go to your quarto pub and find the website.

Resources

- Authoring: https://quarto.org/docs/authoring/markdown-basics.html
- Creating a website: https://quarto.org/docs/websites/
- Quarto Gallery
- Get Started with Quarto | Mine Cetinkaya-Rundel: https://www.youtube.com/watch?v=_f3latmOhew&t=4s
- Learn Quarto basics by watching this video: https://www.youtube.com/watch?v=QcmFSIPGJBM

References

Horst, Allison M, Alison Presmanes Hill, and Kristen B Gorman. 2020. *Allisonhorst/Palmerpenguins: V0.1.0*. Zenodo. https://doi.org/10.5281/ZENODO.3960218.