

Exercises :: ggplot2

2023-10-10

R Markdown

Load the following libraries:

```
library(ggplot2)
library(dplyr)
library(ggthemes)
library(palmerpenguins)
data(penguins)
```

First lets' explore the dataset

Let's make sure we are dealing with long data.

```
glimpse(penguins)
```

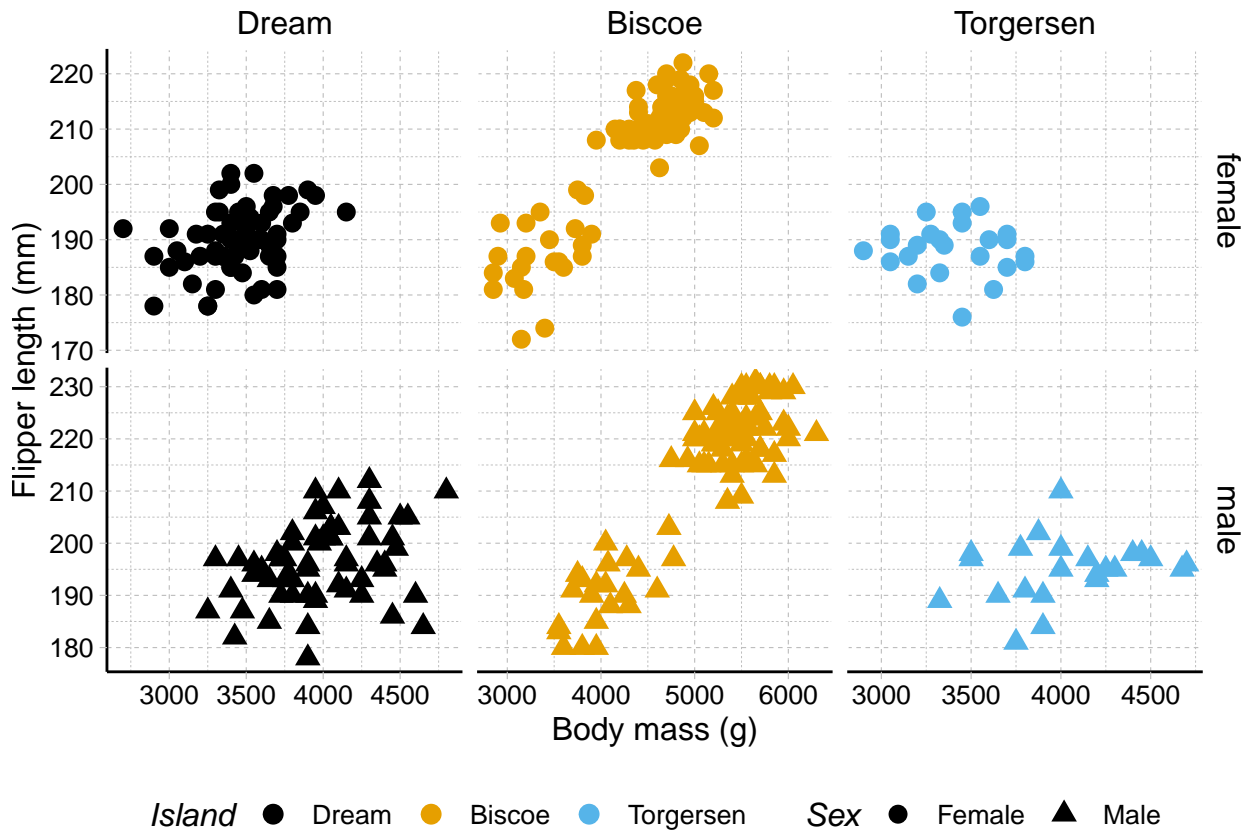
```
## Rows: 344
## Columns: 8
## $ species      <fct> Adelie, Adelie, Adelie, Adelie, Adelie, Adelie, Adel-
## $ island       <fct> Torgersen, Torgersen, Torgersen, Torgersen, Torgerse-
## $ bill_length_mm <dbl> 39.1, 39.5, 40.3, NA, 36.7, 39.3, 38.9, 39.2, 34.1, ~
## $ bill_depth_mm <dbl> 18.7, 17.4, 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~
```

Scatter plot

```
peng <- penguins %>%
  filter(!is.na(sex)) %>%
  rename(Island = island) %>%
  mutate(Island = factor(Island, levels=c('Dream', 'Biscoe', 'Torgersen'))))

ggplot(peng)+
  geom_point(aes(x=body_mass_g,
                y=flipper_length_mm,
                color=Island,
                shape=sex),
            size=3)+
  facet_grid(sex~Island,
            scales = 'free')+
  scale_shape_manual(values = c(16,17),
                    labels = c('Female', 'Male'),
                    name='Sex')+
  ggthemes::scale_color_colorblind()+
```

```
# ggthemes::scale_color_tableau(palette = "Color Blind")+
# ggthemes::scale_color_tableau(palette = "Seattle Grays")+
xlab('Body mass (g)')+
ylab('Flipper length (mm)')+
ggthemes::theme_pander()+
theme(axis.line = element_line(),
      legend.position = 'bottom',
      legend.title = )
```



Error bars

```
peng2 <- penguins %>%
  filter(!is.na(sex)) %>%
  group_by(island, sex) %>%
  summarise(mean.bm = mean(body_mass_g, na.rm = TRUE),
            sd.bm = sd(body_mass_g, na.rm = TRUE),
            n.bm = n()) %>%
  mutate(se.bm = sd.bm / sqrt(n.bm),
         lower.ci.bm = mean.bm - qt(1 - (0.05 / 2), n.bm - 1) * se.bm,
         upper.ci.bm = mean.bm + qt(1 - (0.05 / 2), n.bm - 1) * se.bm)

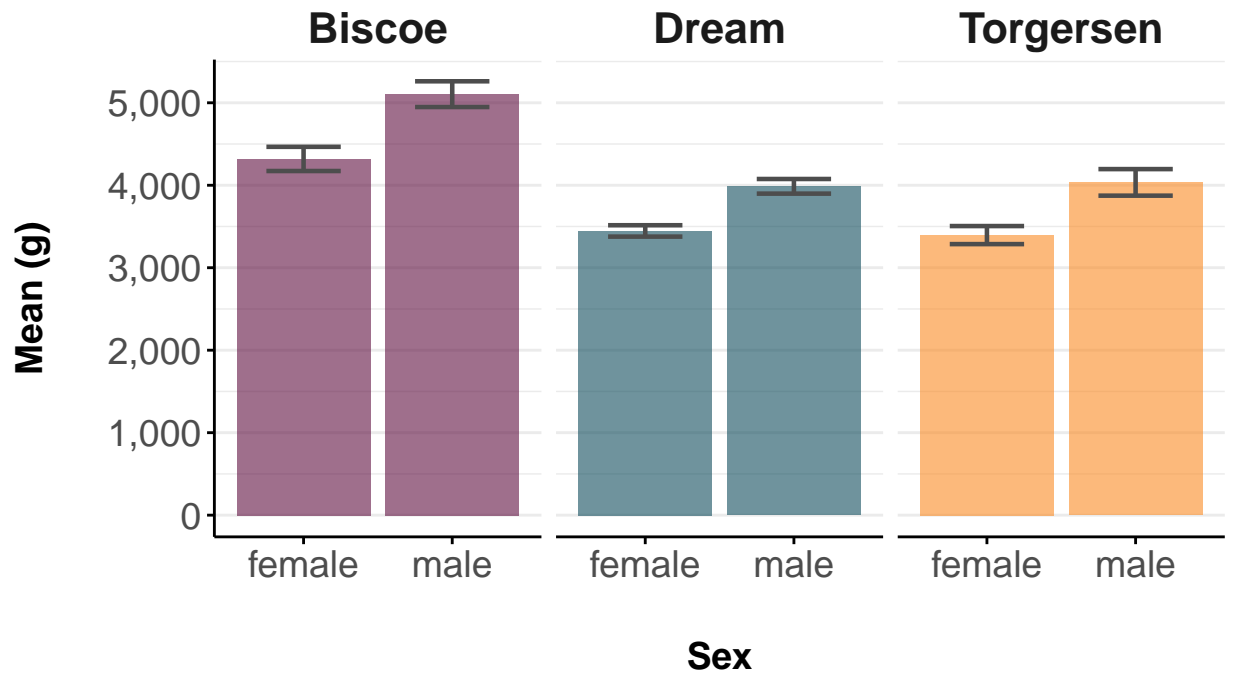
my_colpal <- c('#5f0f40', '#0f4c5c', '#fb8b24', '#e36414')

ggplot(peng2,
      aes(x=sex, y=mean.bm, fill=island))+
```

```

geom_col(position = position_dodge(),
         width = 0.9,
         alpha=0.6)+
geom_errorbar(aes(ymin=lower.ci.bm,
                 ymax=upper.ci.bm),
              position = position_dodge(width=0.9),
              width=0.5,
              color='gray30',
              size=0.8) +
facet_wrap(~island)+
ylab('Mean (g)')+
xlab('Sex')+
scale_fill_manual(values=my_colpal,
                  name='Island')+
scale_y_continuous(labels = scales::comma)+
labs(caption = 'NA values are excluded')+
theme_minimal()+
theme(legend.position = 'bottom',
      legend.text = element_text(size=12),
      strip.text = element_text(size=16, face = 'bold'),
      axis.title = element_text(size=14,
                                face='bold'),
      axis.title.x = element_text(margin = margin(0.3,0,0,0, unit = 'in')),
      axis.title.y = element_text(margin = margin(0,0.3,0,0, unit = 'in')),
      axis.text = element_text(size=14),
      plot.caption = element_text(size=10, face = 'italic'),
      plot.margin = margin(0.1, 0.1, 0.1, 0.1, unit='in'),
      axis.line = element_line(color='black'),
      axis.ticks = element_line(color='black'),
      panel.grid.major.x = element_blank())

```



Island ■ Biscoe ■ Dream ■ Torgersen

NA values are excluded

Export your plots as png, jpeg, pdf

Use `ggsave()`

```
ggsave(plot=plot,
  path = ,
  scale = 1,
  dpi = 300,
  height = ,
  width = ,
  units = c('in'))
```