

Assignment 5

Your Name and Surname

2025-11-10

Dataset

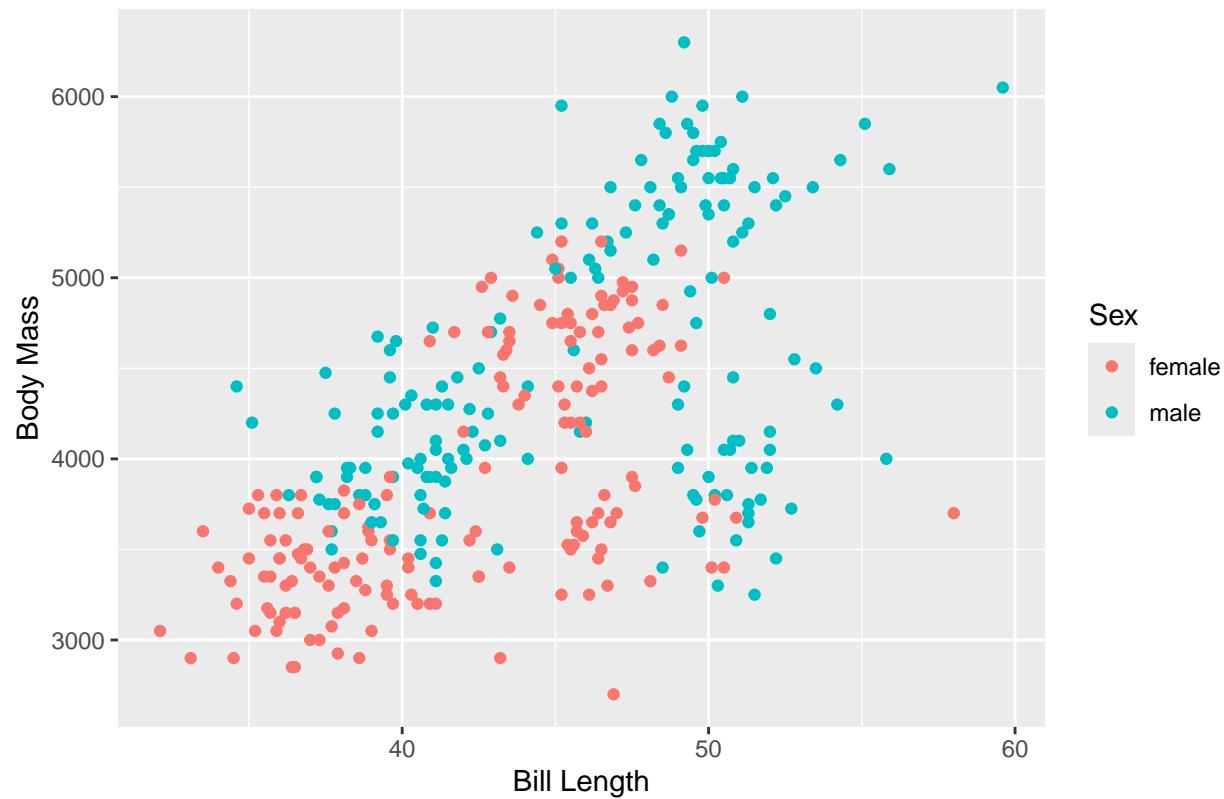
The `penguins` dataset (available through the `palmerpenguins` package and can be loaded after installing and loading the package) contains real-world data collected from three penguin species are Adélie, Chinstrap, and Gentoo living in the Palmer Archipelago of Antarctica. The measurements were taken between 2007 and 2009 consists many variables about the penguins such as `species`, `island`, `bill_length_mm`, and so on.

Drawing a plot for association

1. Draw a single plot showing association between the bill lengths and body mass of the penguins according to the their sex (60 pts).

```
#install.packages("palmerpenguins")
library(palmerpenguins)
#View(penguins)
penguins<-na.omit(penguins)
ggplot(penguins, aes(x =bill_length_mm, y = body_mass_g, colour = sex)) +
  geom_point() +
  labs(title = "Visualization of the association between bill lengths and body mass of the penguins ",
       x="Bill Length",
       y="Body Mass",
       colour="Sex")
```

Visualization of the association between bill lengths and body mass of the



2. Interpret the plot (40 pts).

The graph shows that body mass increases as beak length increases. This indicates a positive correlation (covariation). Body mass in female penguins ranges from approximately 3000 to 5000, while in male penguins it ranges from 3500 to 6000. The direction of the relationship is positive.