

Assignment 5

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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).

```
data("penguins")
head(penguins)

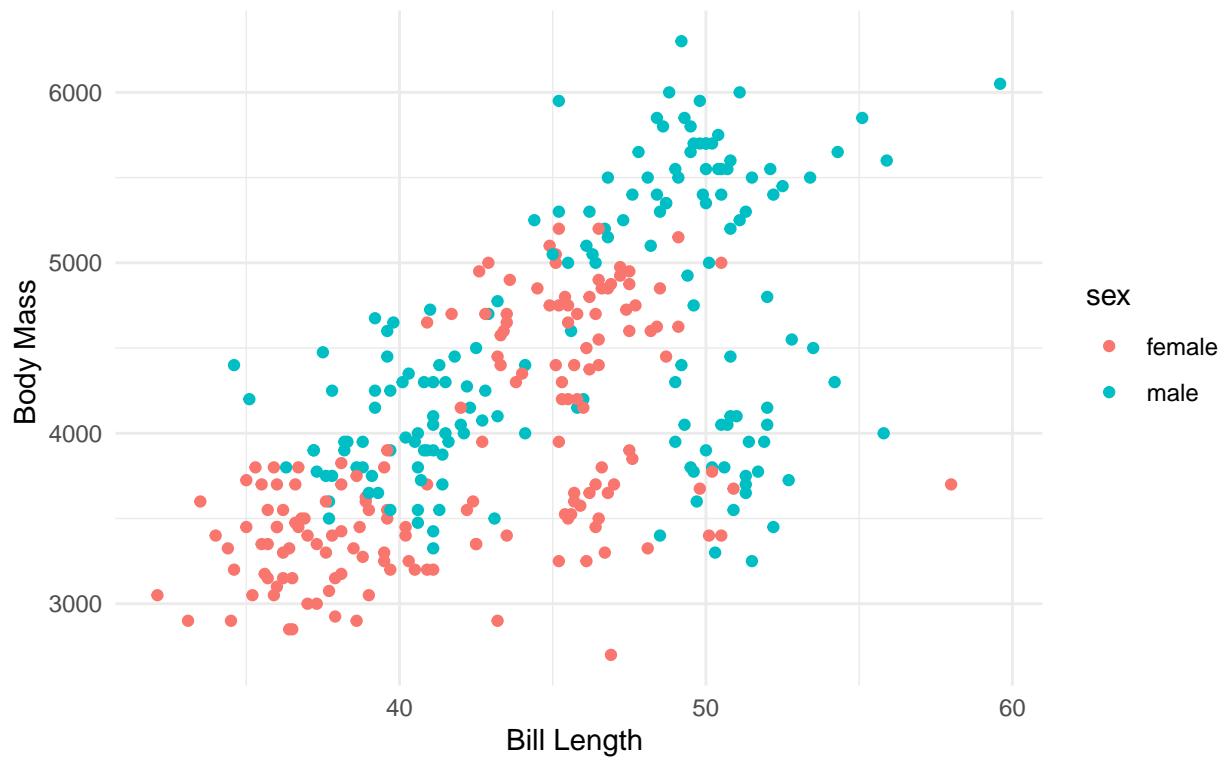
##   species     island bill_len bill_dep flipper_len body_mass     sex year
## 1  Adelie Torgersen    39.1     18.7       181     3750 male 2007
## 2  Adelie Torgersen    39.5     17.4       186     3800 female 2007
## 3  Adelie Torgersen    40.3     18.0       195     3250 female 2007
## 4  Adelie Torgersen      NA      NA        NA      NA <NA> 2007
## 5  Adelie Torgersen    36.7     19.3       193     3450 female 2007
## 6  Adelie Torgersen    39.3     20.6       190     3650 male 2007

penguins <- na.omit(penguins)

ggplot(penguins, aes(x = bill_len,
                      y = body_mass,
                      color = sex)) +
  geom_point() +
  labs(title = "Relationship Bill Length and Body Mass of Penguins",
       subtitle = "color by sex ",
       x = "Bill Length ",
       y = "Body Mass ",
       color = "sex") +
  theme_minimal()
```

Relationship Bill Length and Body Mass of Penguins

color by sex



- Interpret the plot (40 pts). The beak length and body mass of female and male penguins are positively correlated. The correlation between them is positive for both. Male penguins have greater body mass and beak length than female penguins.