Assignment 5

Suzan Nisa Çevik

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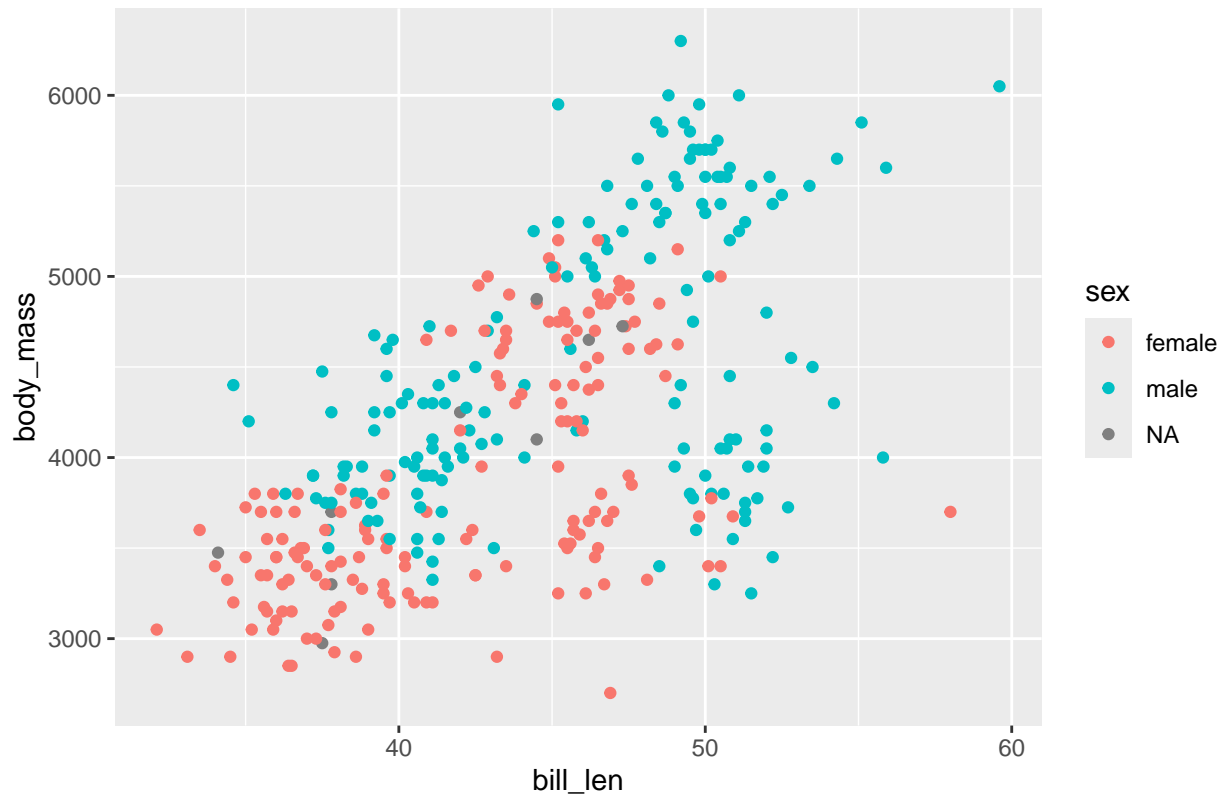
```
data("penguins")
head(penguins)
```

```
##   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
```

```
ggplot(penguins, aes(x = bill_len, y = body_mass, colour = factor(sex))) +
  geom_point() +
  labs(title = "Visualization of the association between bill len and body mass",
       colour = "sex")
```

```
## Warning: Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Visualization of the association between bill len and body mass


```
ggplot(penguins, aes(x = bill_len, y = body_mass)) +
  geom_point() +
  labs(title = "Visualization of the association between bill len and body mass",
       colour = "sex")+
  facet_grid(~sex)
```
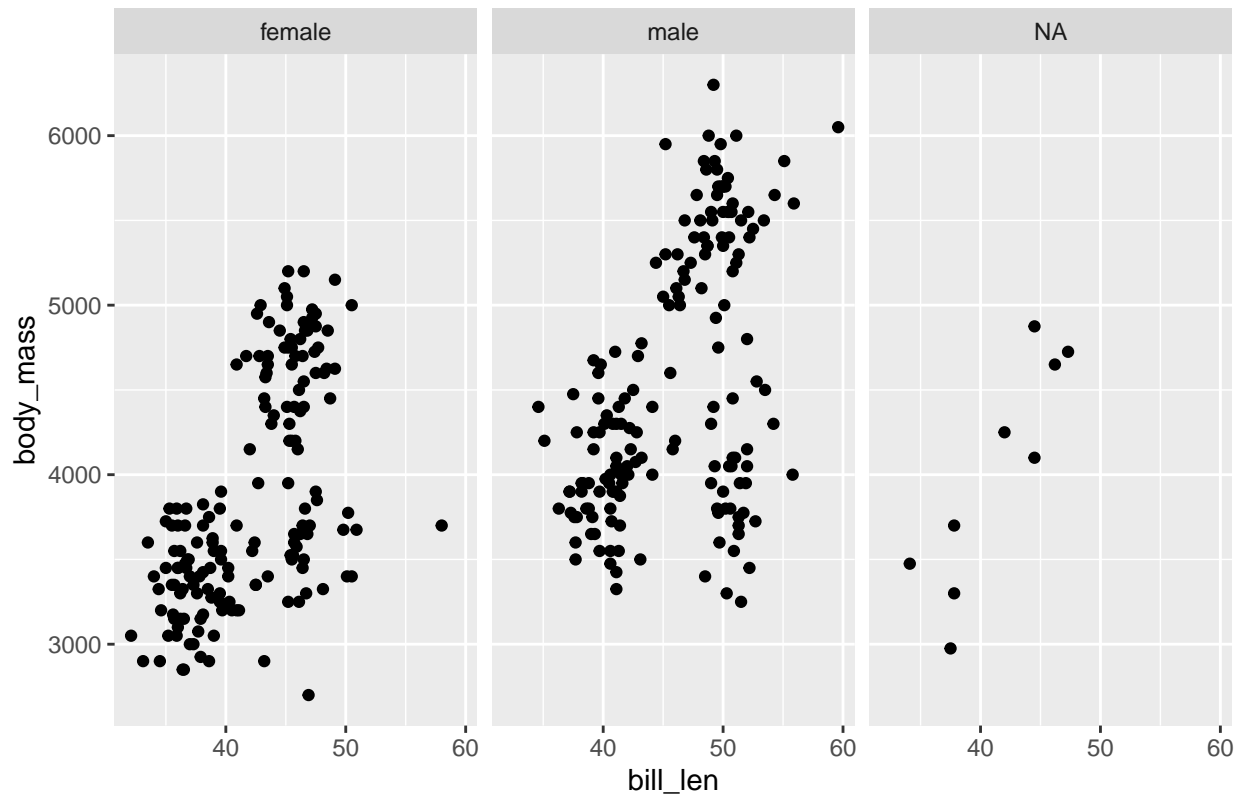
```
## Ignoring unknown labels:
## * colour : "sex"
```

```
## Warning: Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Visualization of the association between bill len and body mass

2. Interpret the plot (40 pts).

It is a graph of the distribution of penguins' bill len and body mass according to their sex. In both males and females, the body mass size and bill len also increase. That is, it goes right; male penguins are larger in mass than females and therefore their bill len is larger.