Palmer Penguins

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Required Libraries

```
library(tidyverse)
library(palmerpenguins)
```

Do penguins with longer flippers weigh more or less than penguins with shorter flippers?

Overview

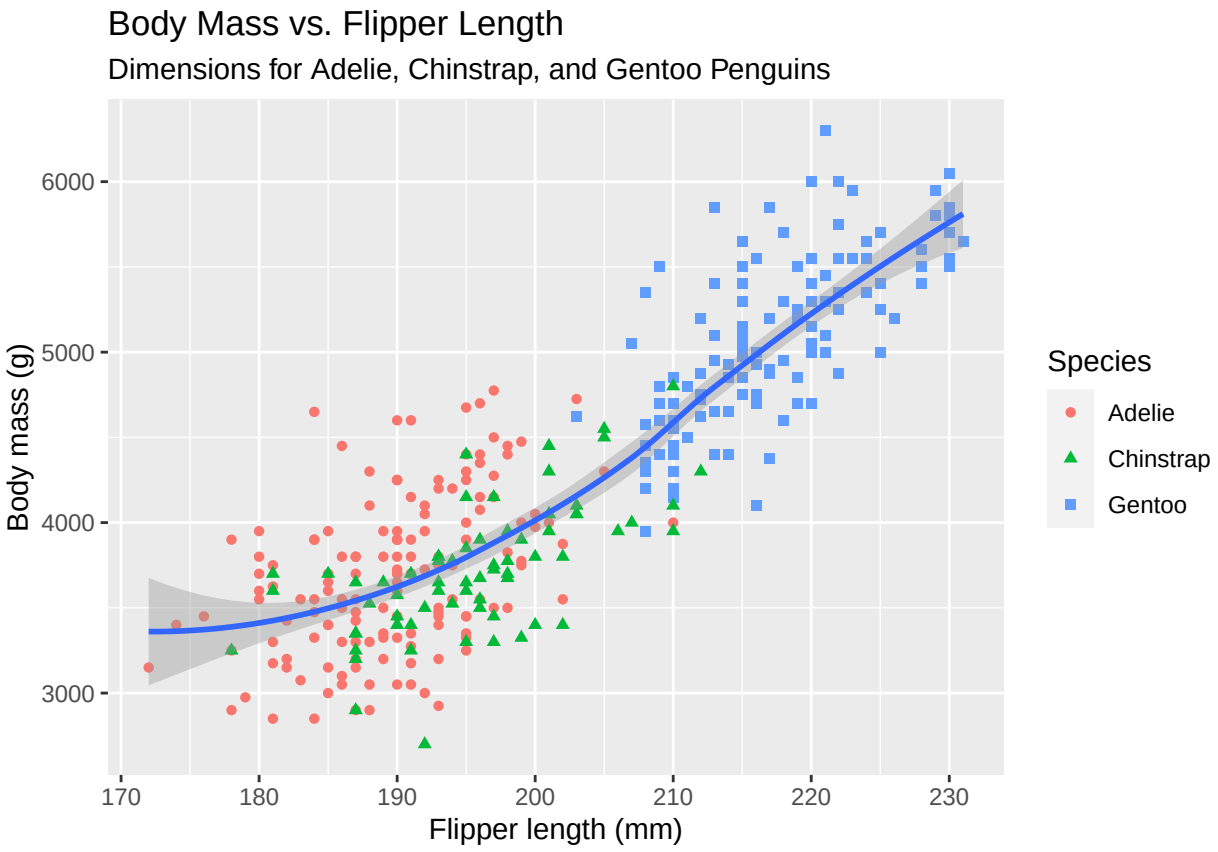
```
df <- palmerpenguins::penguins

knitr::kable(head(df))
```

species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex	year
Adelie	Torgersen	39.1	18.7	181	3750	male	2007
Adelie	Torgersen	39.5	17.4	186	3800	female	2007
Adelie	Torgersen	40.3	18.0	195	3250	female	2007
Adelie	Torgersen	NA	NA	NA	NA	NA	2007
Adelie	Torgersen	36.7	19.3	193	3450	female	2007
Adelie	Torgersen	39.3	20.6	190	3650	male	2007

Scatterplot of Body Mass vs. Flipper Length by Species

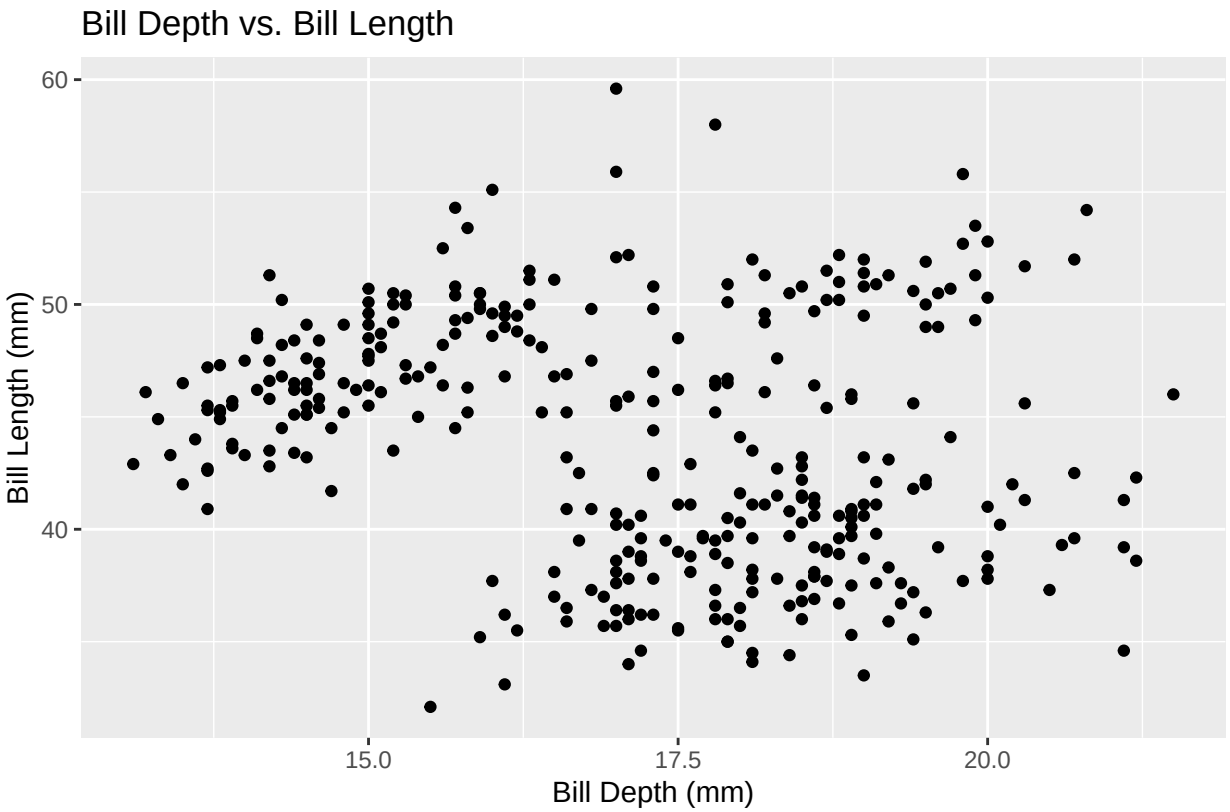
```
ggplot(df, aes(x = flipper_length_mm, y = body_mass_g)) +
  geom_point(aes(color = species, shape = species), na.rm = TRUE) +
  geom_smooth(na.rm = TRUE) +
  labs(title = "Body Mass vs. Flipper Length",
       subtitle = "Dimensions for Adelie, Chinstrap, and Gentoo Penguins",
       x = "Flipper length (mm)",
       y = "Body mass (g)",
       color = "Species",
       shape = "Species")
```

```
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
```



Scatterplot of Bill Depth vs. Bill Length

```
ggplot(df, aes(x = bill_depth_mm, y = bill_length_mm)) +
  geom_point(na.rm = TRUE) +
  labs(title = "Bill Depth vs. Bill Length",
       x = "Bill Depth (mm)",
       y = "Bill Length (mm)",
       caption = "Data come from the palmerpenguins package.")
```

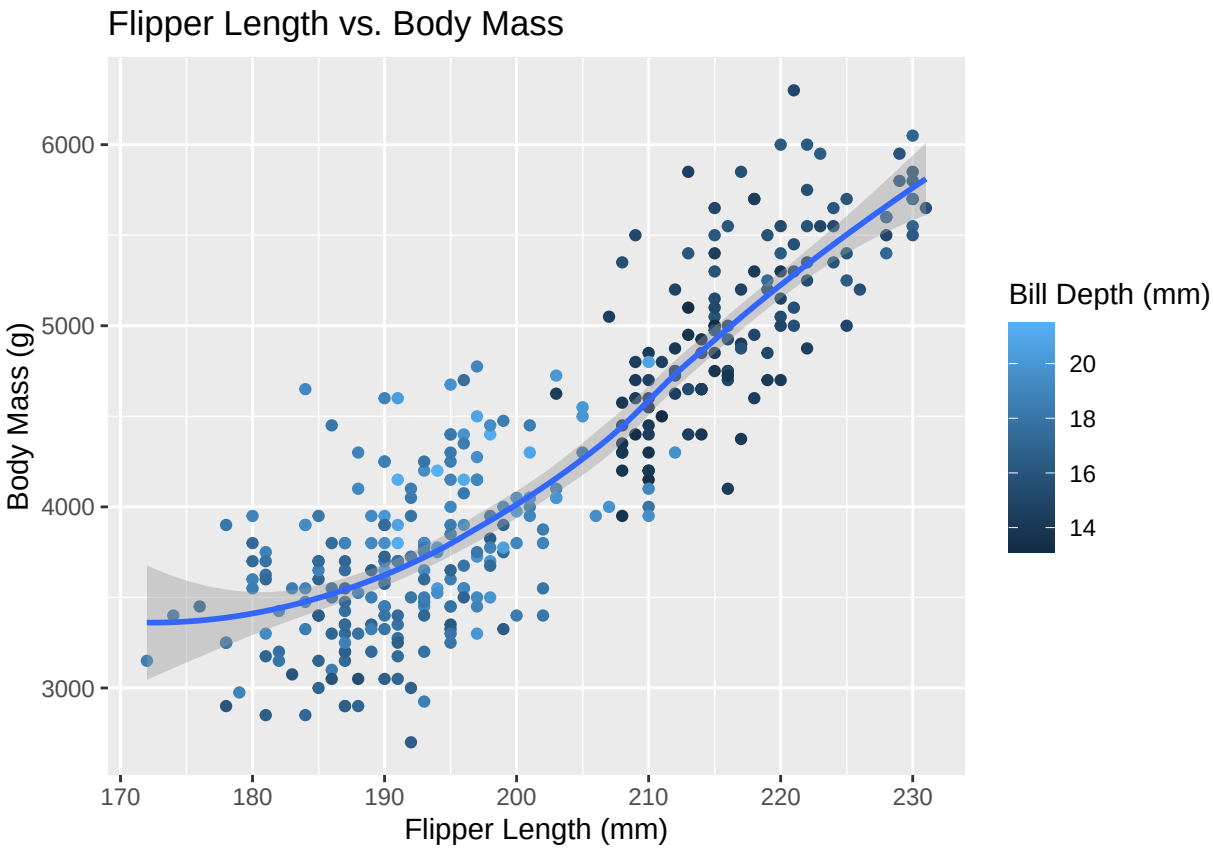


Data come from the palmerpenguins package.

Scatterplot of Flipper Length vs. Body Mass by Bill Depth

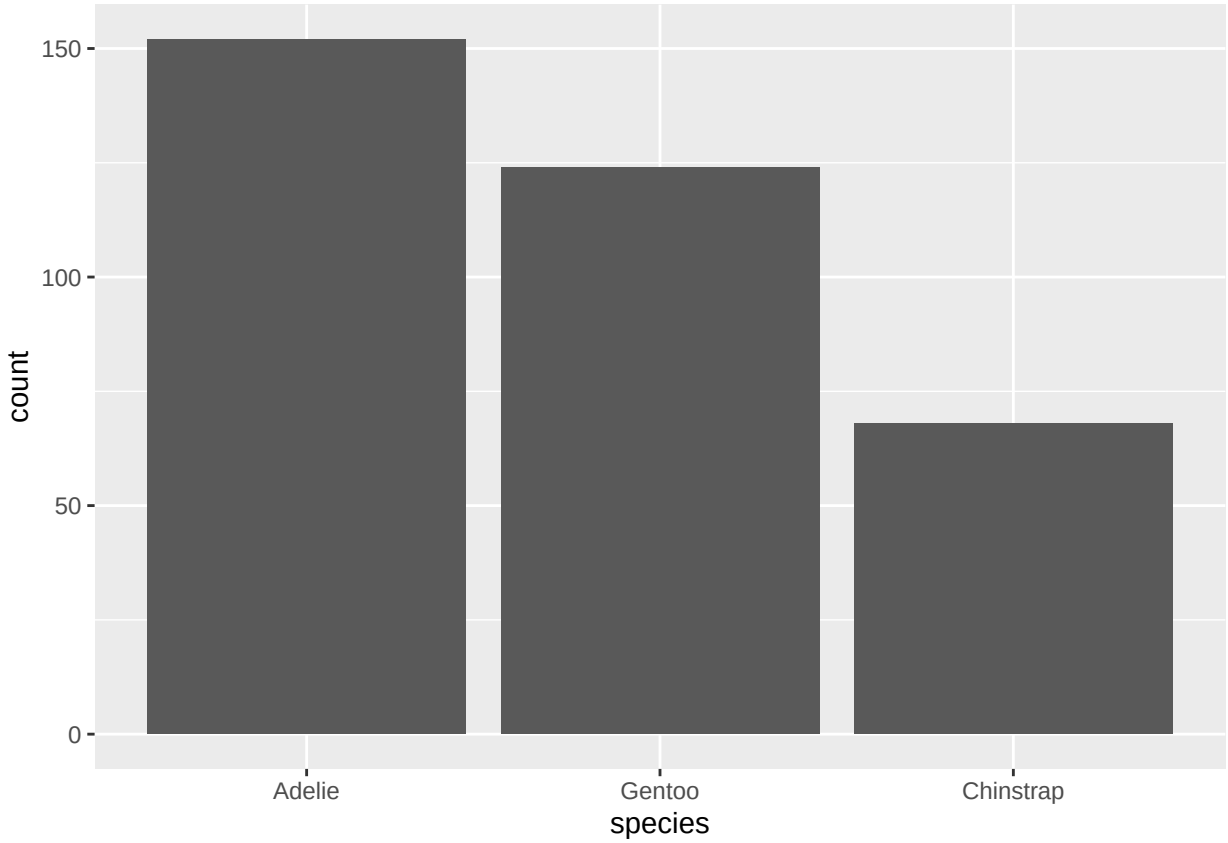
```
ggplot(df, aes(x = flipper_length_mm, y = body_mass_g, color = bill_depth_mm)) +
  geom_point() +
  geom_smooth() +
  labs(title = "Flipper Length vs. Body Mass",
       x = "Flipper Length (mm)",
       y = "Body Mass (g)",
       color = 'Bill Depth (mm)')
```

```
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
```



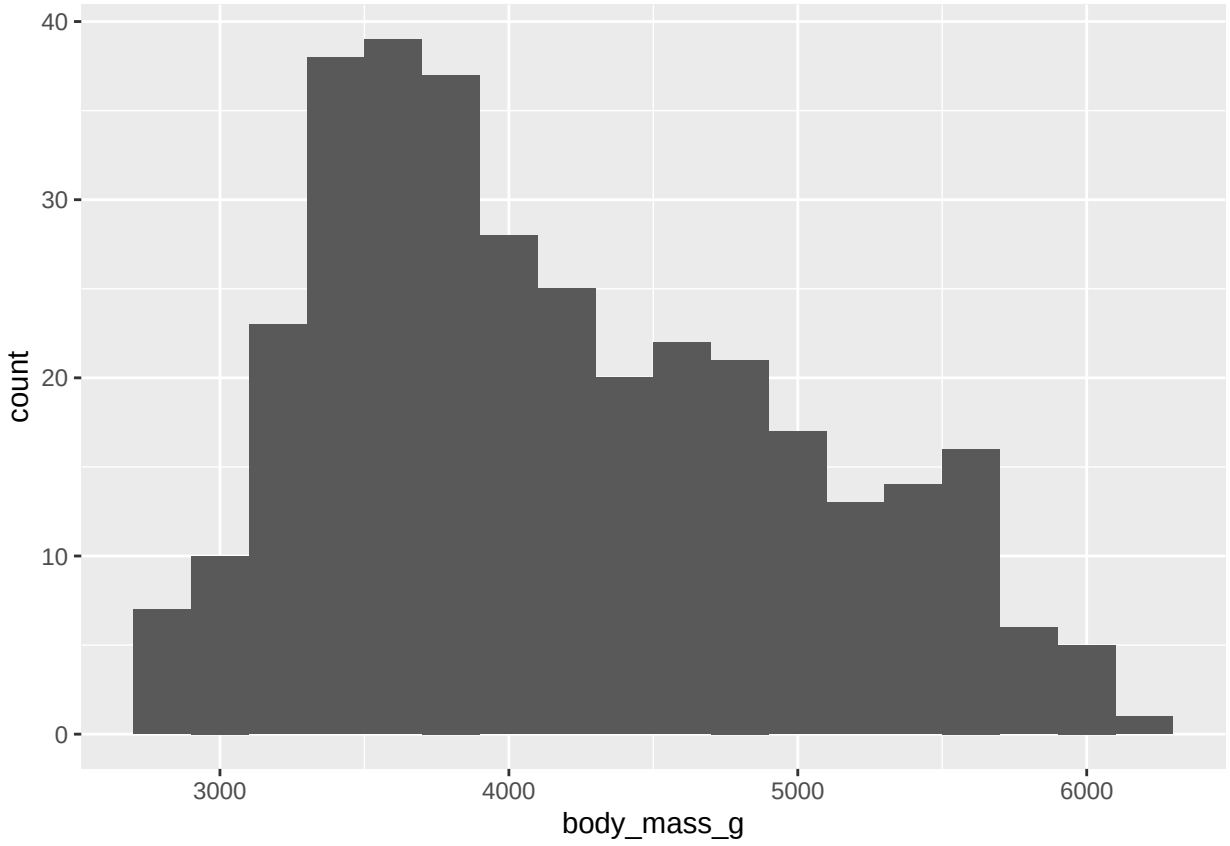
Count Plot of Penguin Species

```
ggplot(penguins, aes(x = fct_infreq(species))) +
  geom_bar() +
  labs(x = 'species')
```



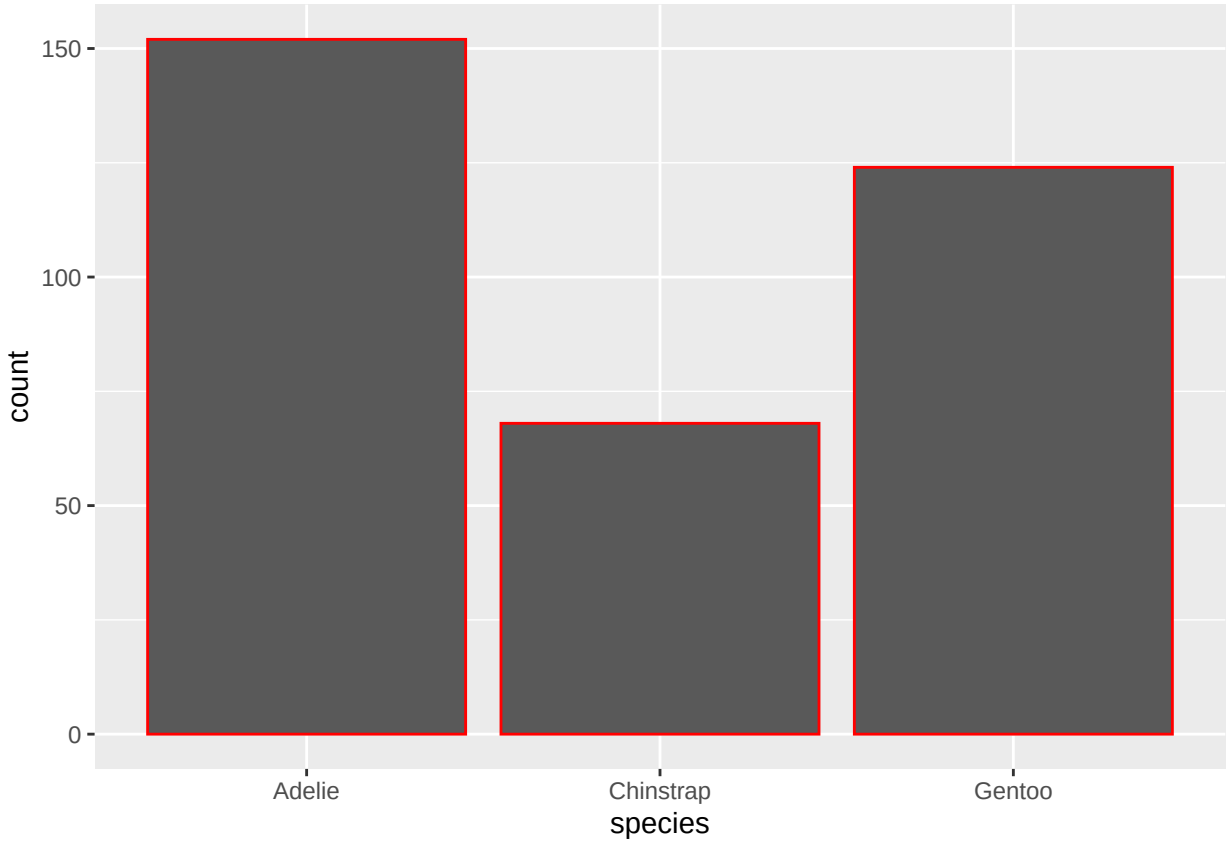
Distribution of Body Mass

```
ggplot(penguins, aes(x = body_mass_g)) +
  geom_histogram(binwidth = 200)
```

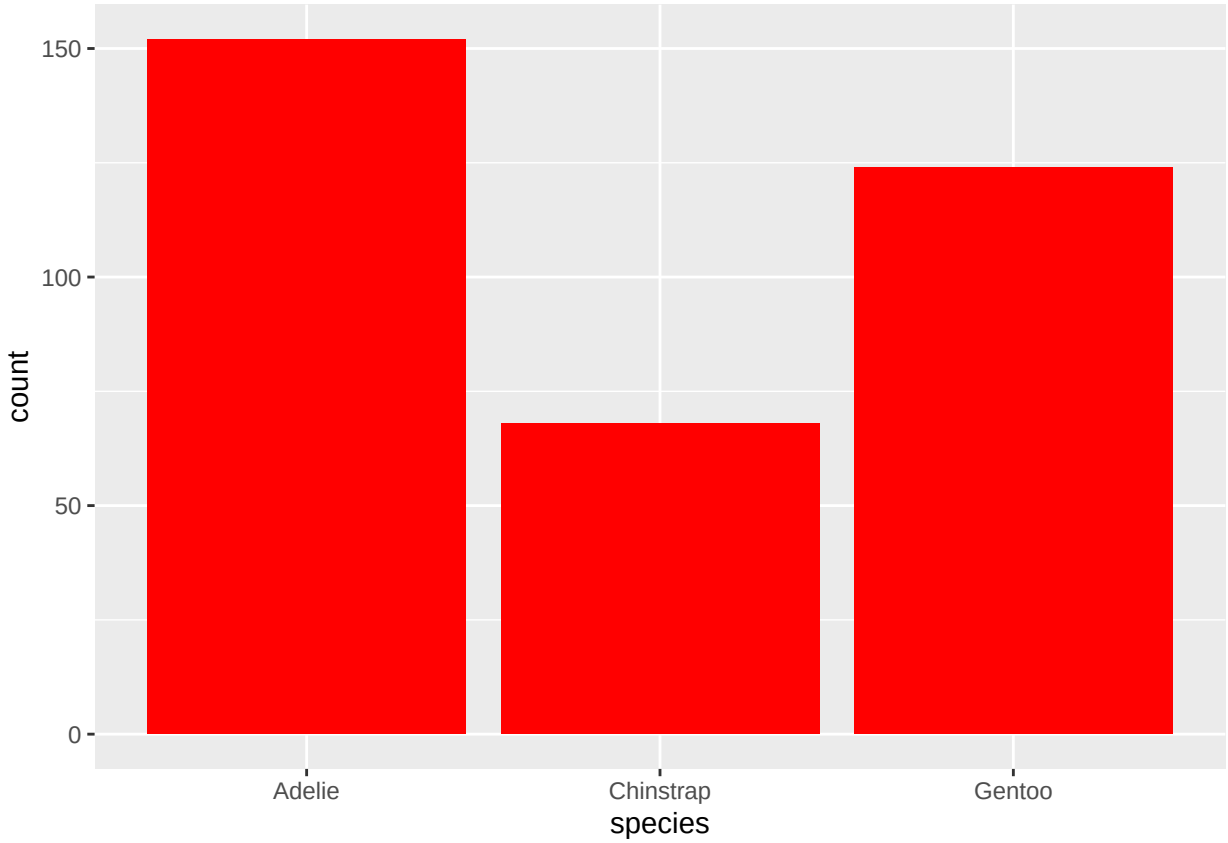


Looking at *geom_bar()* Color vs. Fill Attributes

```
ggplot(penguins, aes(x = species)) +
  geom_bar(color = "red")
```

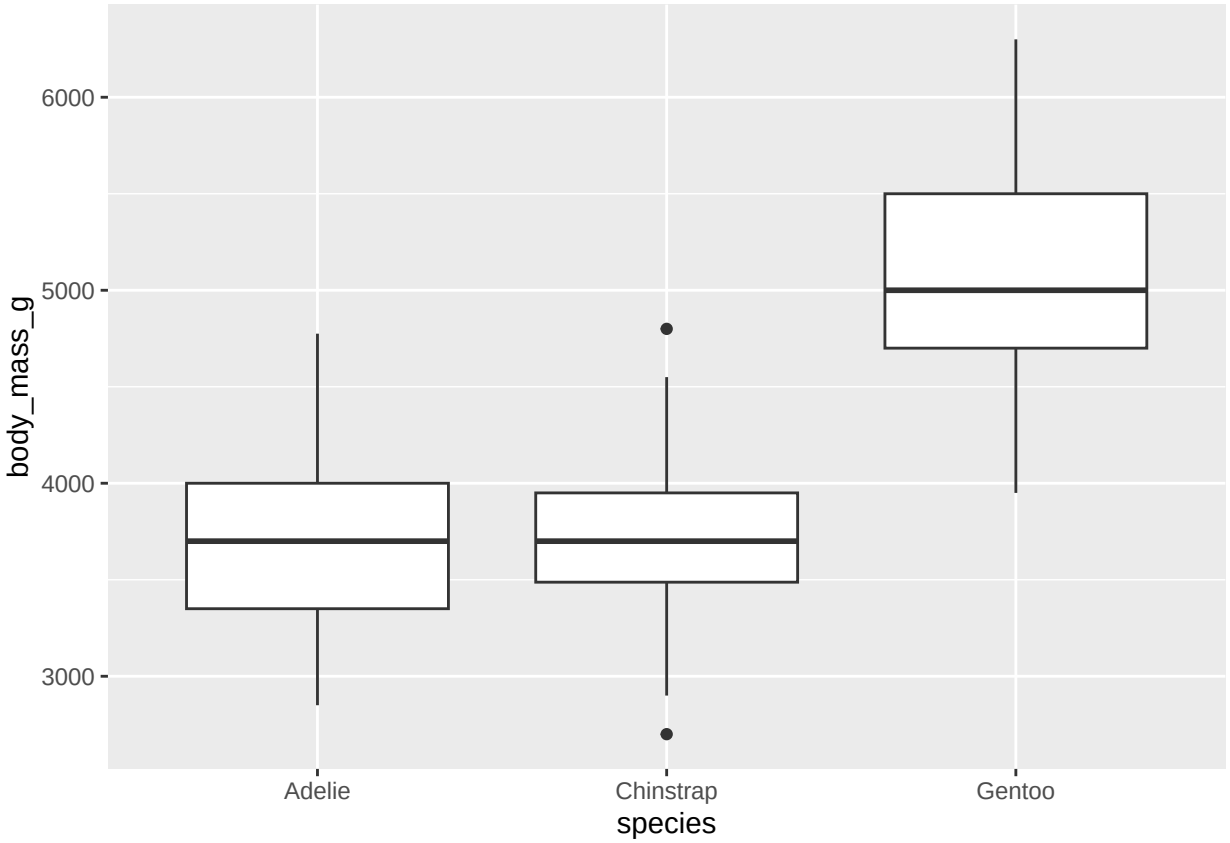



```
ggplot(penguins, aes(x = species)) +
  geom_bar(fill = "red")
```



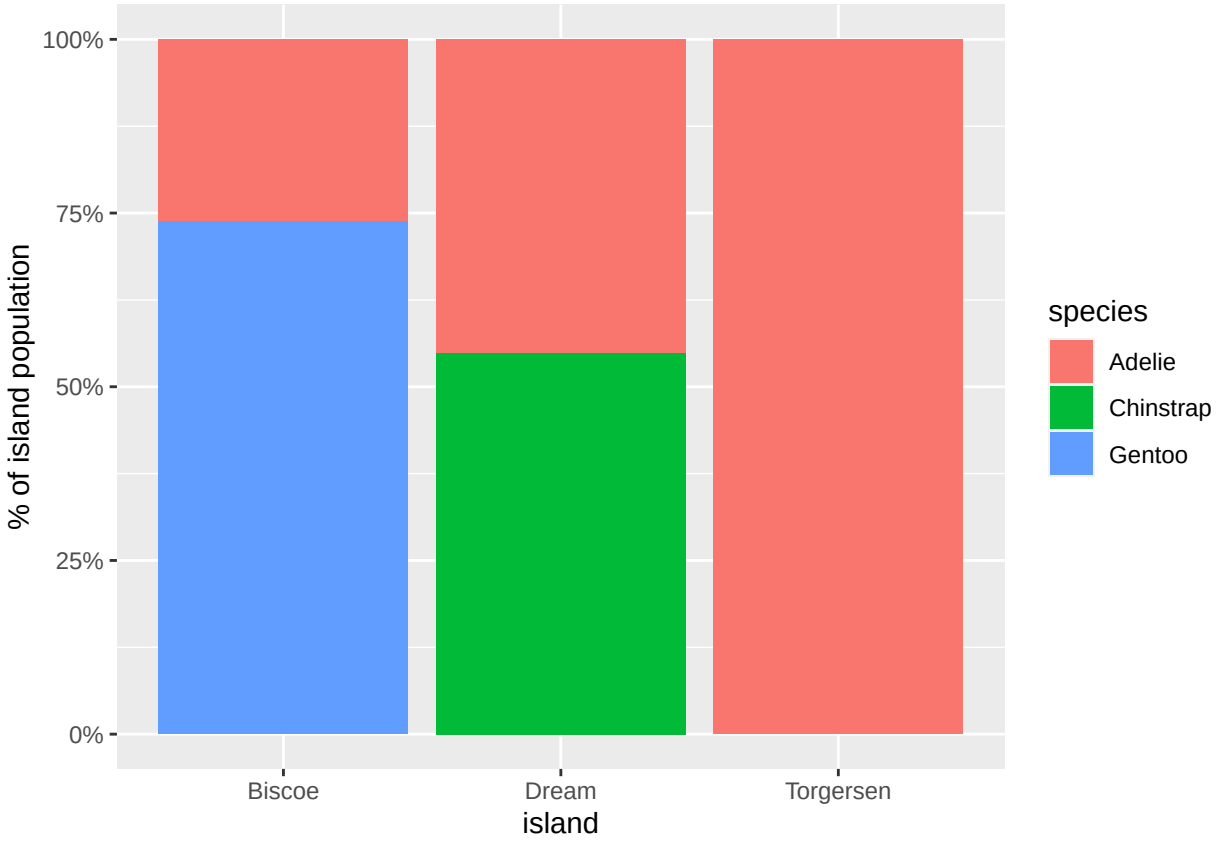
Distributions of Body Mass based on Species

```
ggplot(penguins, aes(x = species, y = body_mass_g)) +
  geom_boxplot()
```

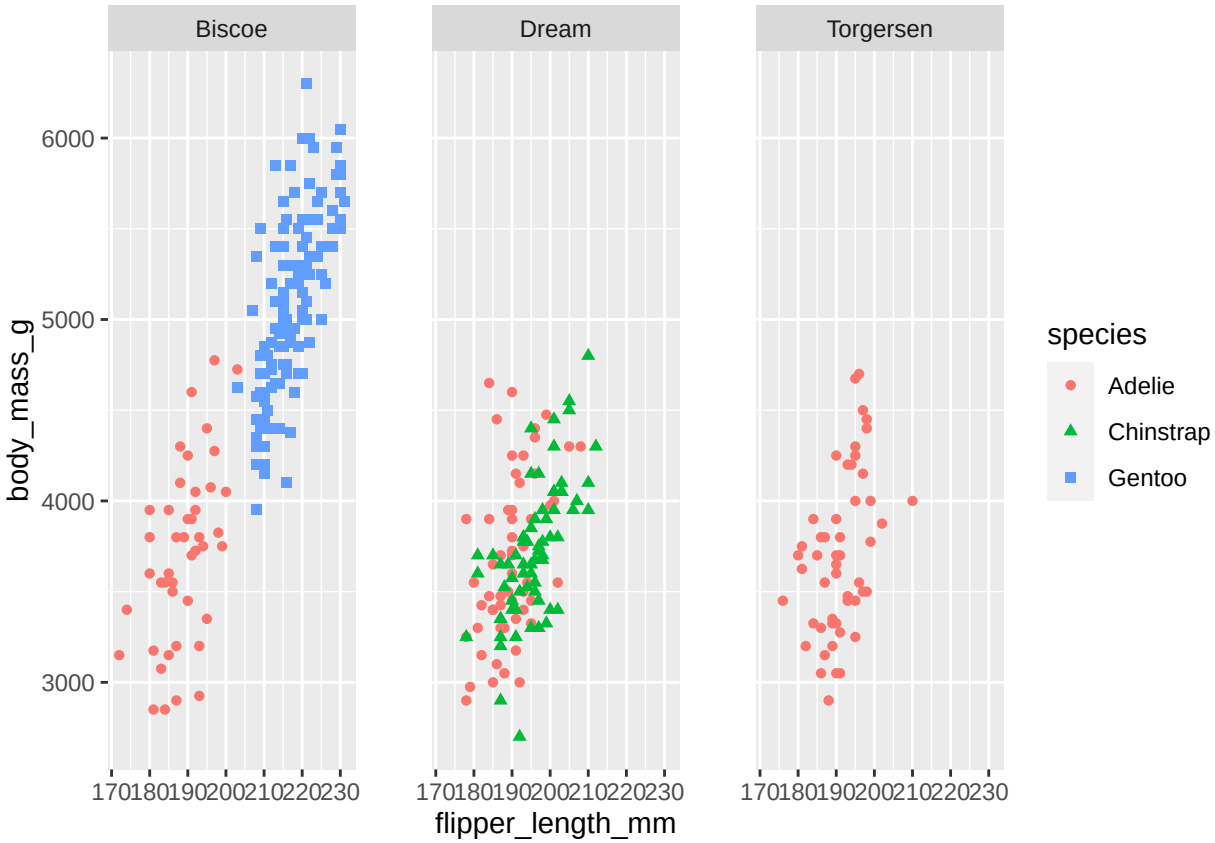


Population Proportion of Species to each Island

```
ggplot(penguins, aes(x = island, fill = species)) +
  geom_bar(position ='fill') +
  labs(y = '% of island population') +
  scale_y_continuous(labels = scales::percent)
```


100%
75%
50%
25%
0%
% of island population
Biscoe
Dream
Torgersen
island
species
Adelie
Chinstrap
Gentoo

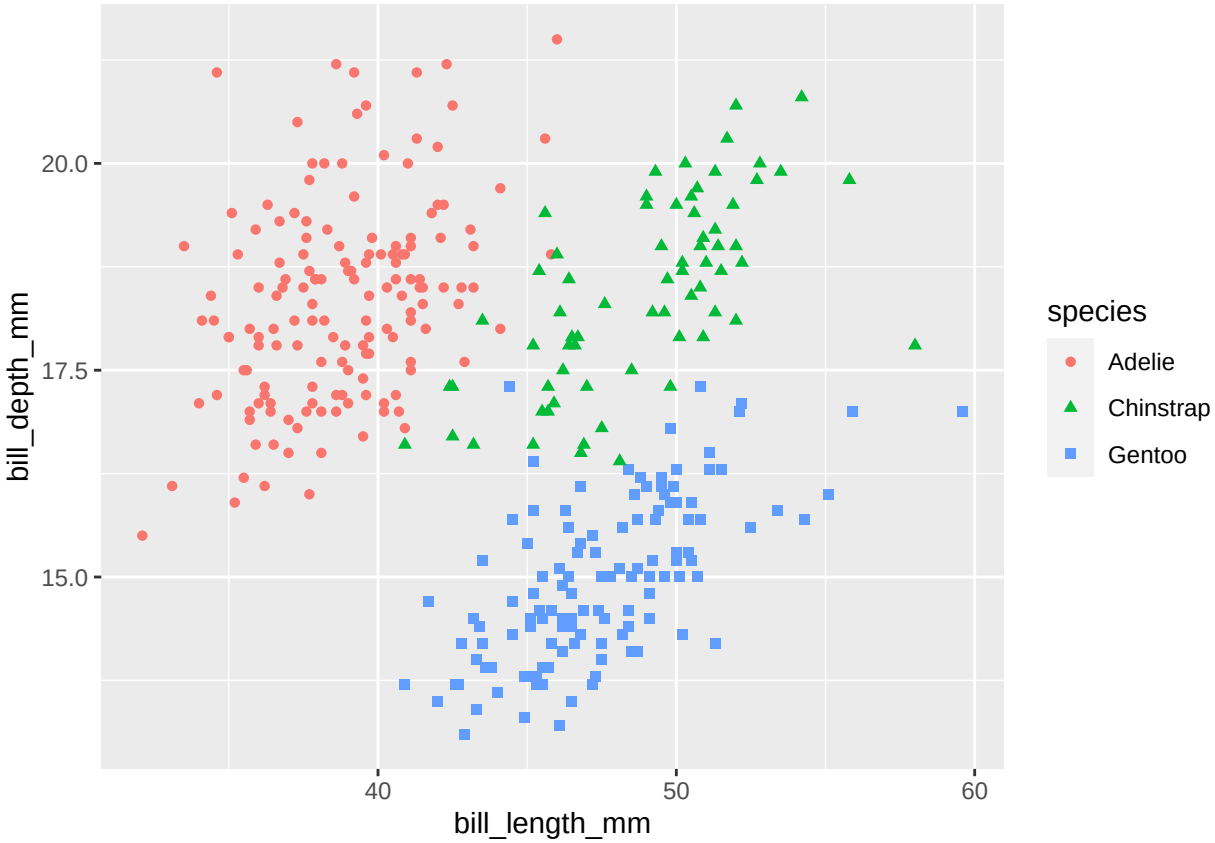
Weight and Flipper Length of Species to each Island




```
## Saving 6.5 x 4.5 in image
```

Weight and Flipper Length of Species to each Island

```
ggplot(
  data = penguins,
  mapping = aes(
    x = bill_length_mm, y = bill_depth_mm,
    color = species, shape = species
  )
) +
  geom_point()
```


bill_depth_mm
20.0
17.5
15.0
40
50
60
bill_length_mm
species
Adelie
Chinstrap
Gentoo