Daten Visualisieren mit `{ggplot2}` [2/2]

Unit 2

BASEL LANDSCHAFT
FINANZ- UND KIRCHENDIREKTION
AMT FÜR DATEN UND STATISTIK

Ziele für heute

1. Komponenten eines `{ggplot2}`-Plots auflisten
2. geeignete geometrische Objekte auswählen und vergleichen

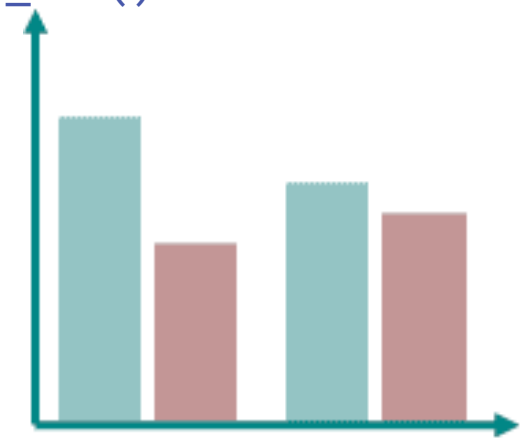
Diagramtypen

Diagramtypen

❓

Balkendiagramm (bar chart)

`geom_bar()`

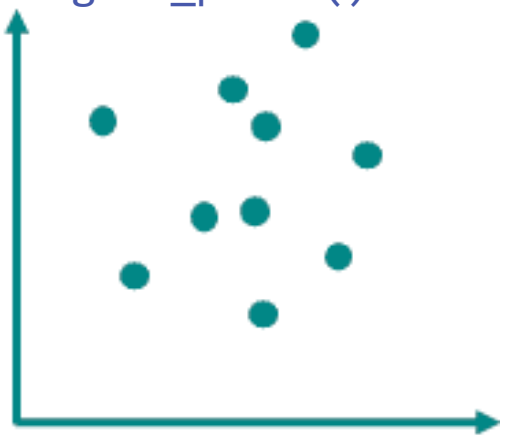


Histogramm (histogram)

`geom_histogram()`

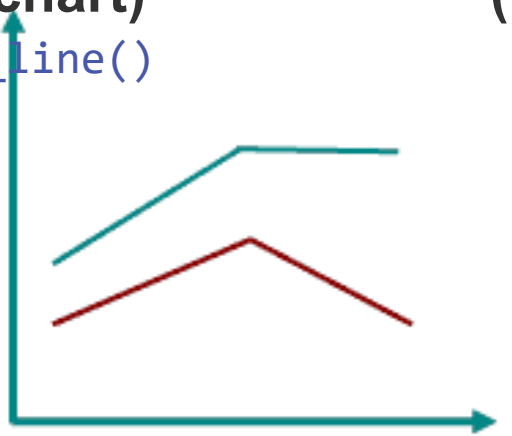
Streudiagramm (scatter plot)

`geom_point()`



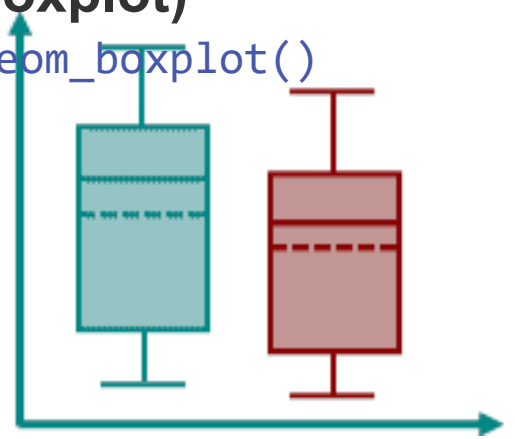
Liniendiagramm (line chart)

`geom_line()`



Boxplot (boxplot)

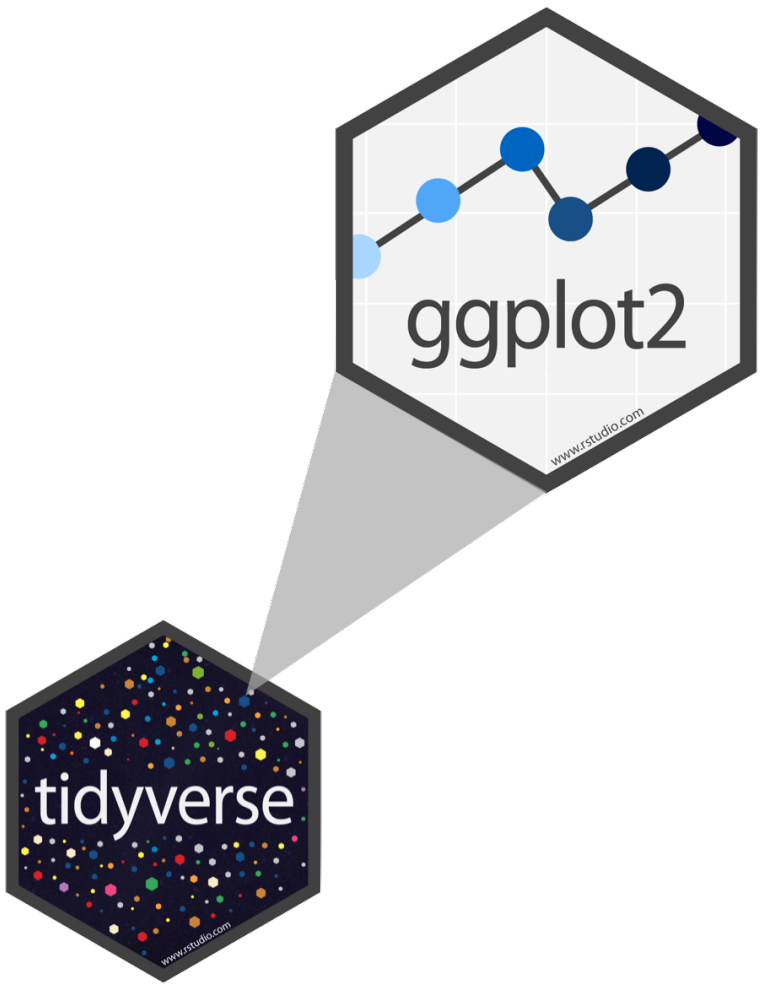
`geom_boxplot()`



Kreisdiagramm (pie chart)

~~(überspringen)~~

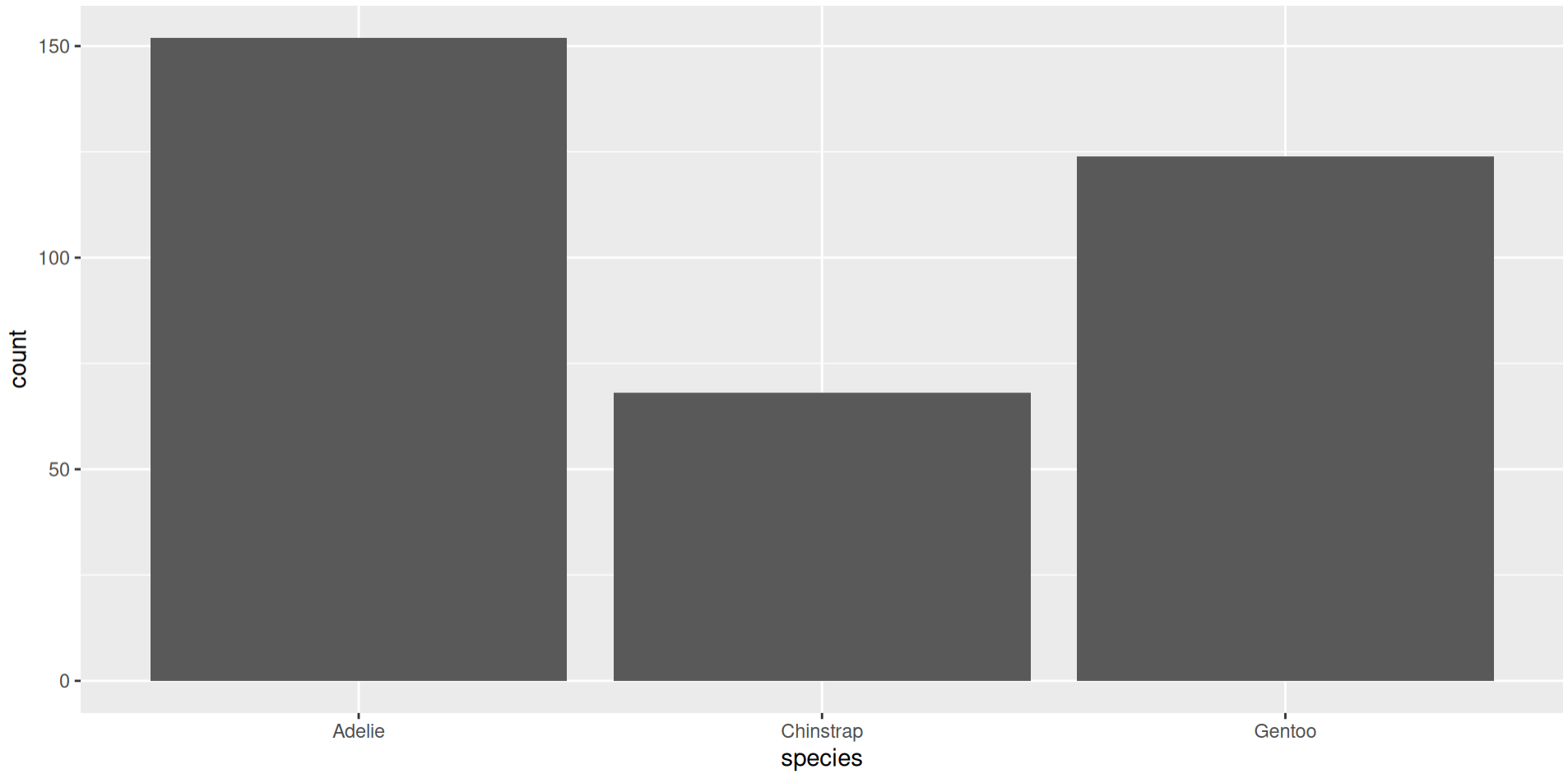
R Package ggplot2




```
ggplot(data = [dataset],
       mapping = aes(x = [x-variable],
                     y = [y-variable])) +
   geom_xxx() +
   other options
```

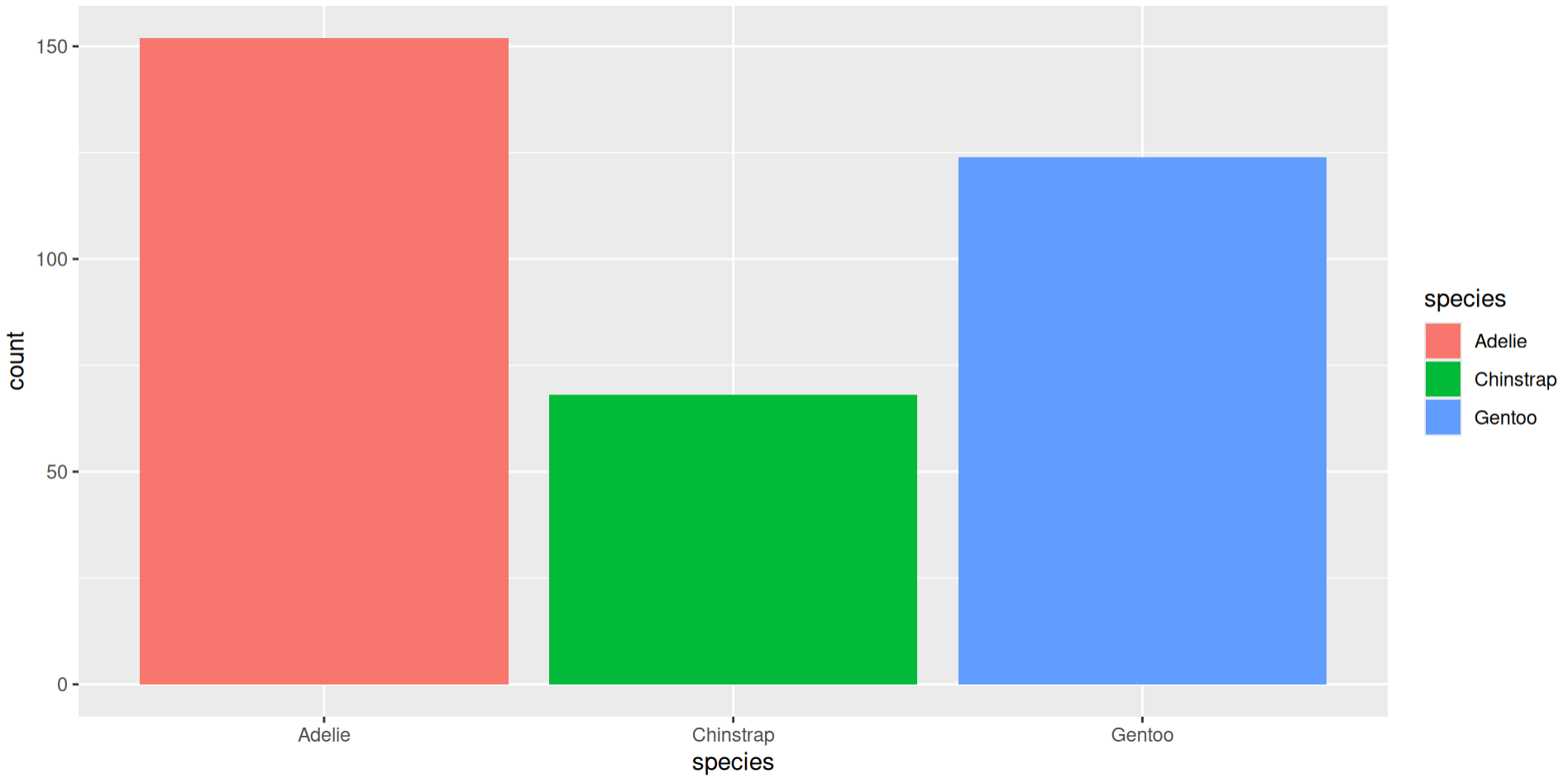
Balkendiagramm

```
1 ggplot(penguins, aes(x = species)) +
2   geom_bar()
```



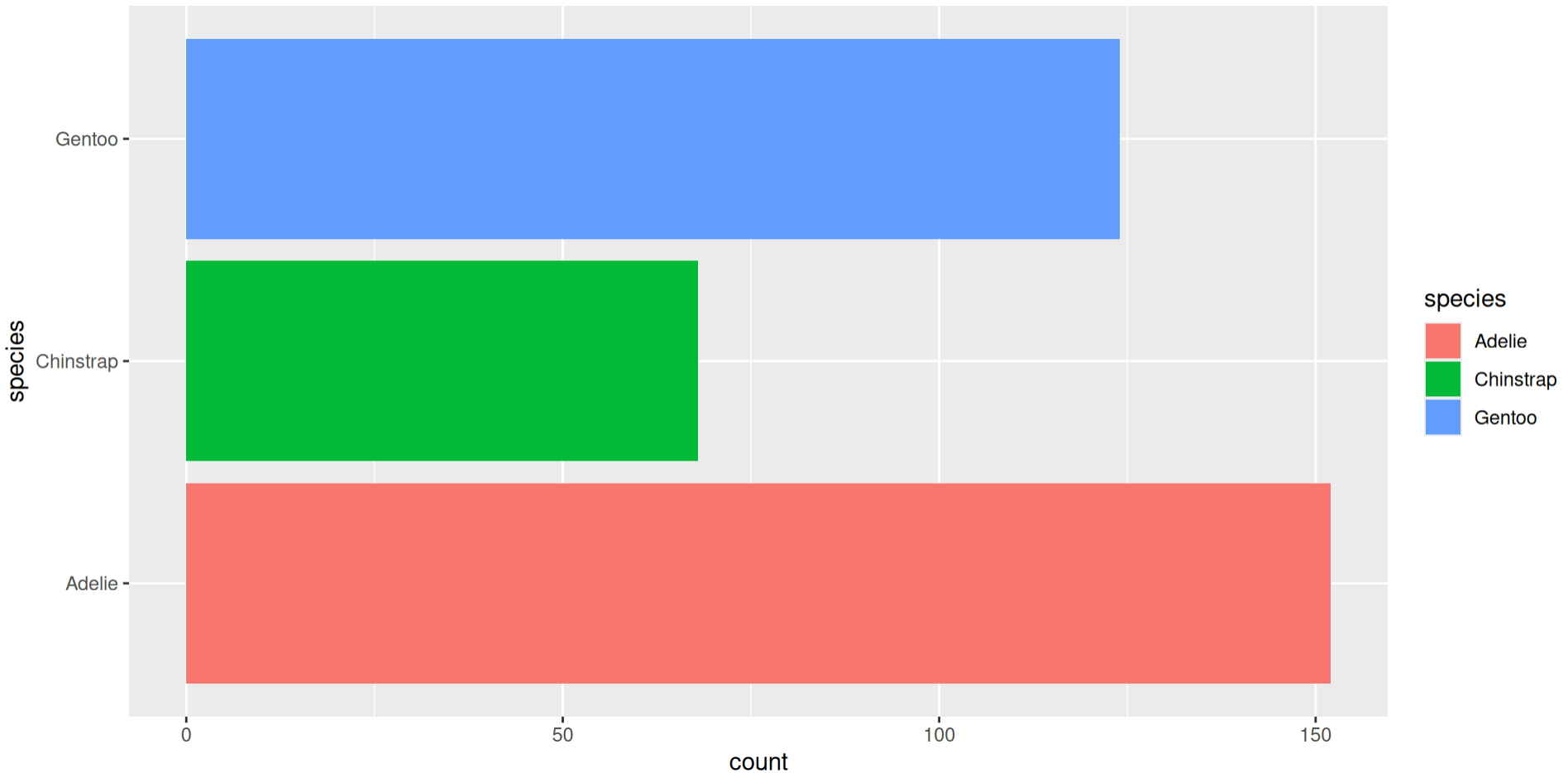
Balkendiagramm

```
1 ggplot(penguins, aes(x = species, fill = species)) +
2   geom_bar()
```



Balkendiagramm

```
1  ggplot(penguins, aes(y = species, fill = species)) +
2    geom_bar()
```



Praktikum 02a

exercises/unit2/prak-02a-viz.qmd

20:00

Praktikum 02b: Visualisierung (Hausaufgabe)

prak-02b-viz.qmd

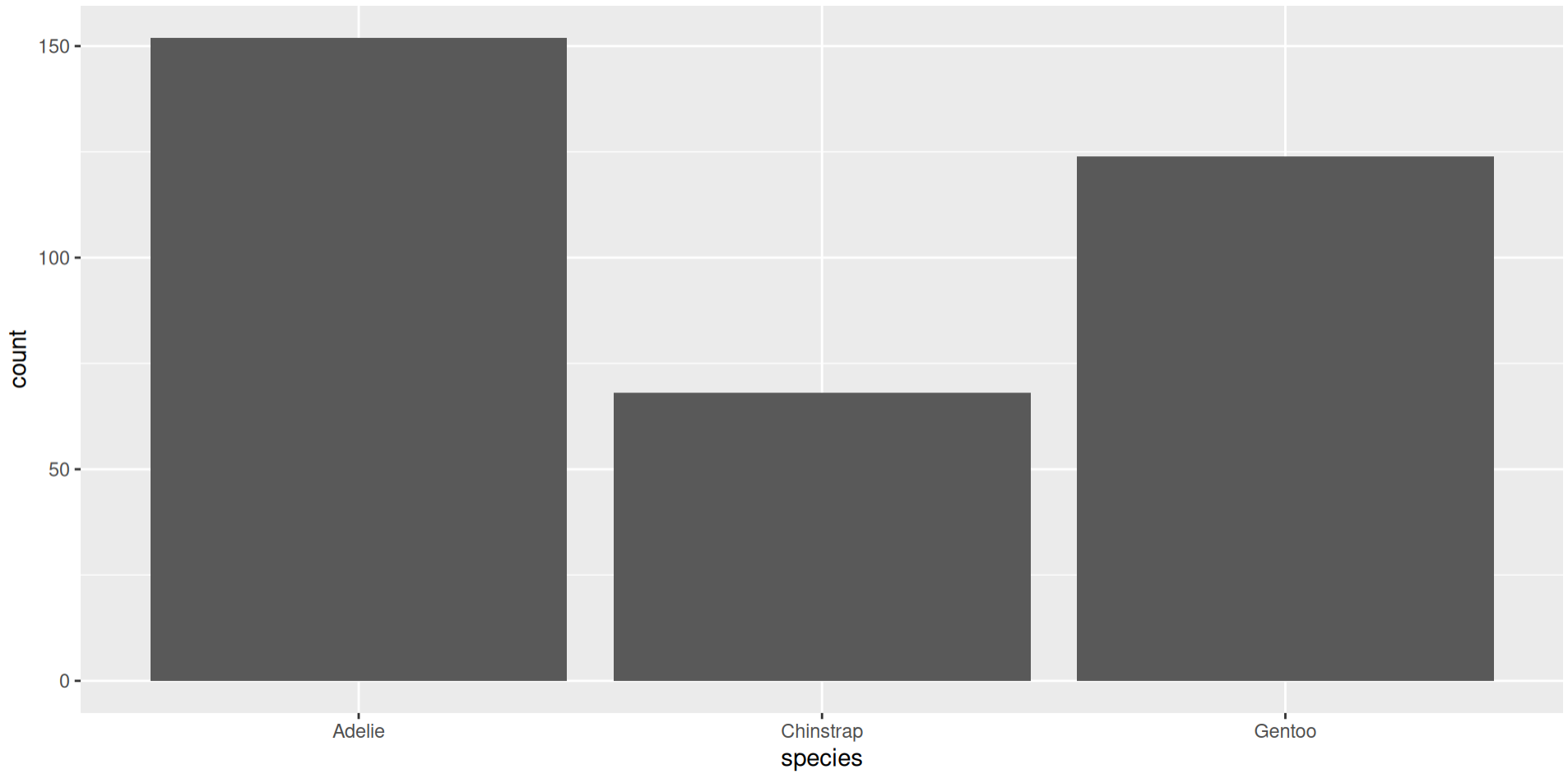
Slides created via revealjs and Quarto.

Access slides as PDF.

Verteilungen visualisieren

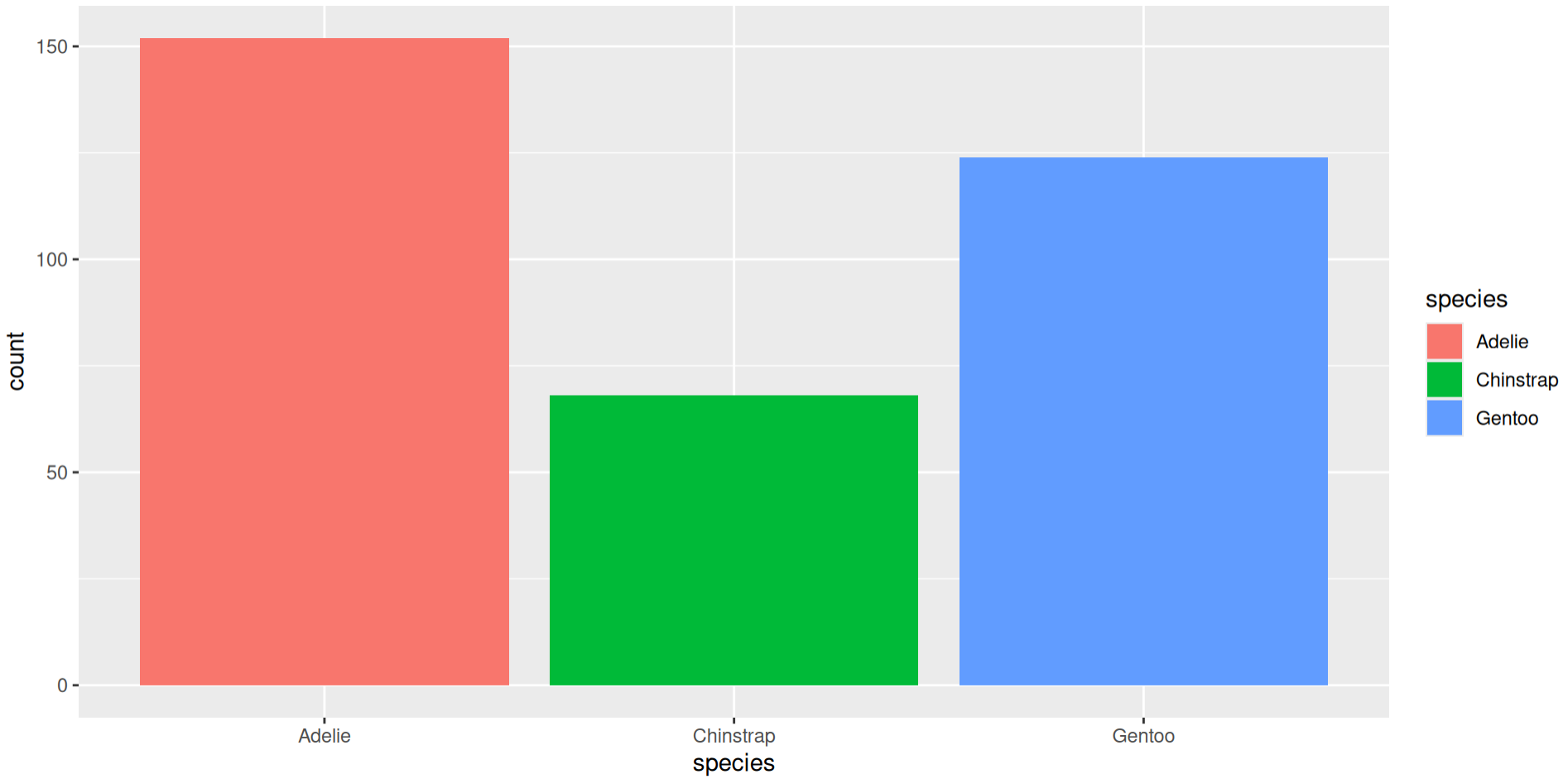
Kategoriale Variablen

```
1 ggplot(penguins, aes(x = species)) +
2   geom_bar()
```



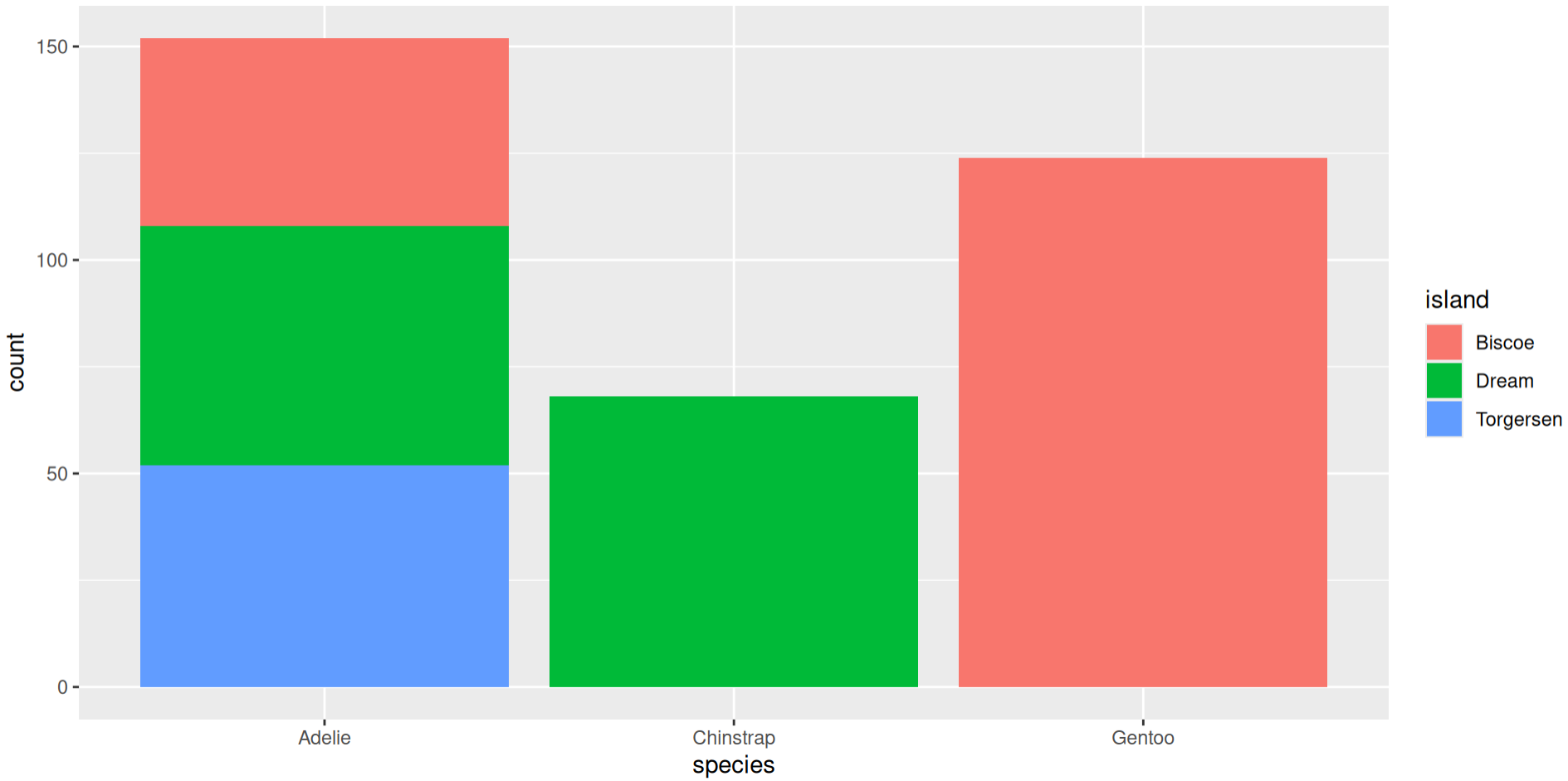
Kategoriale Variablen

```
1 ggplot(penguins, aes(x = species, fill = species)) +
2   geom_bar()
```



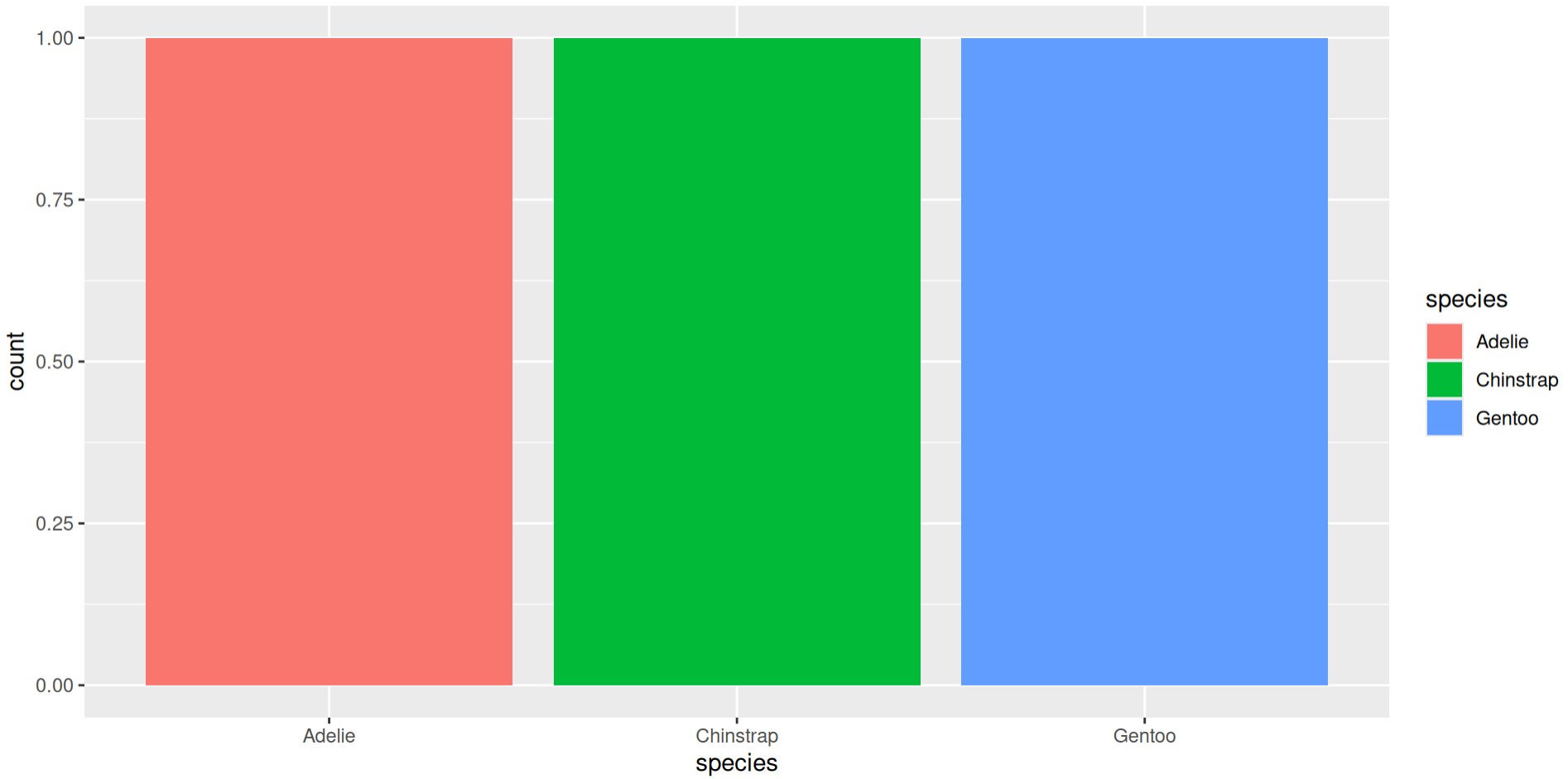
Kategoriale Variablen

```
1 ggplot(penguins, aes(x = species, fill = island)) +
2   geom_bar()
```



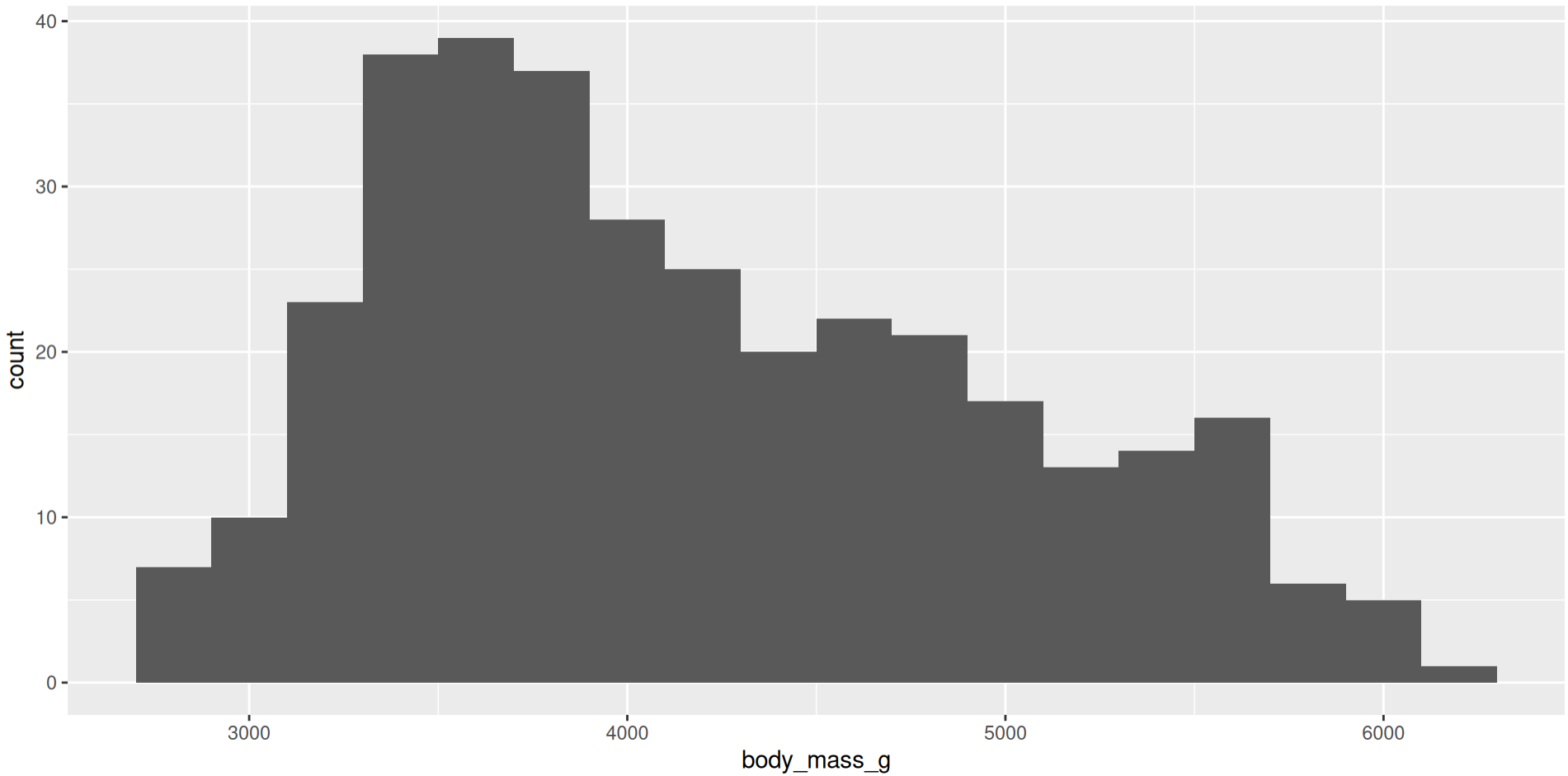
Kategoriale Variablen

```
1 ggplot(penguins, aes(x = species, fill = species)) +
2   geom_bar(position = "fill")
```



Numerische Variablen

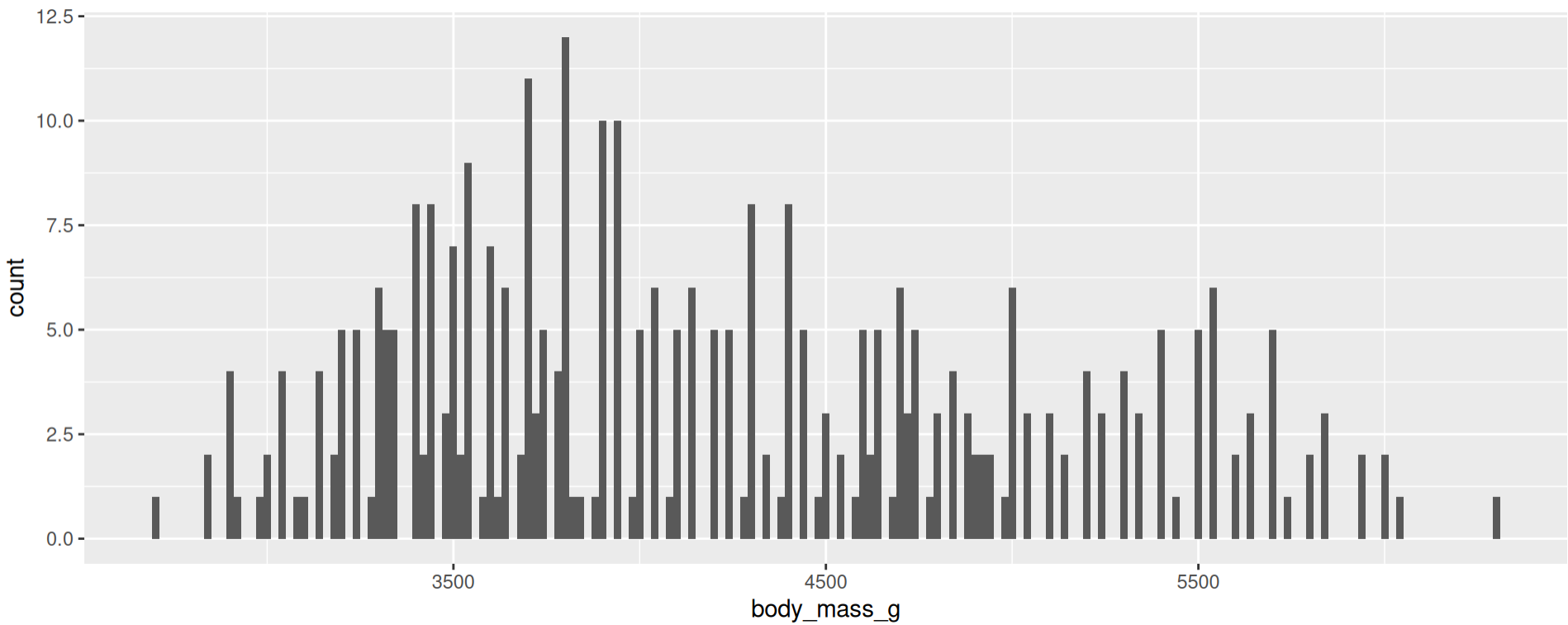
```
1 ggplot(penguins, aes(x = body_mass_g)) +
2   geom_histogram(binwidth = 200)
```



Numerische Variablen

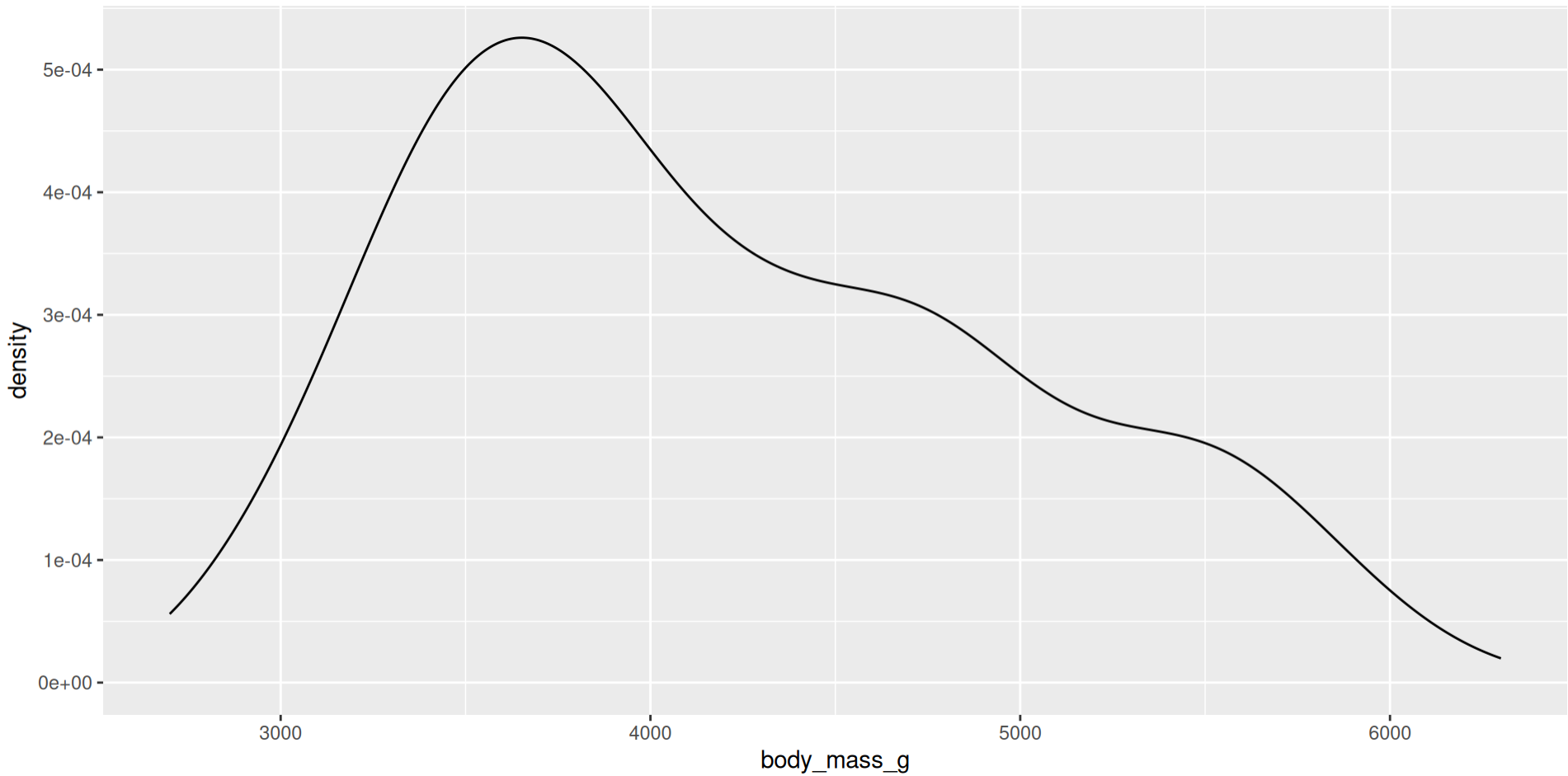
Binwidth = 20 | Binwidth = 2000

```
1 ggplot(penguins, aes(x = body_mass_g)) +
2   geom_histogram(binwidth = 20)
```



Numerische Variablen

```
1 ggplot(penguins, aes(x = body_mass_g)) +
2     geom_density()
```



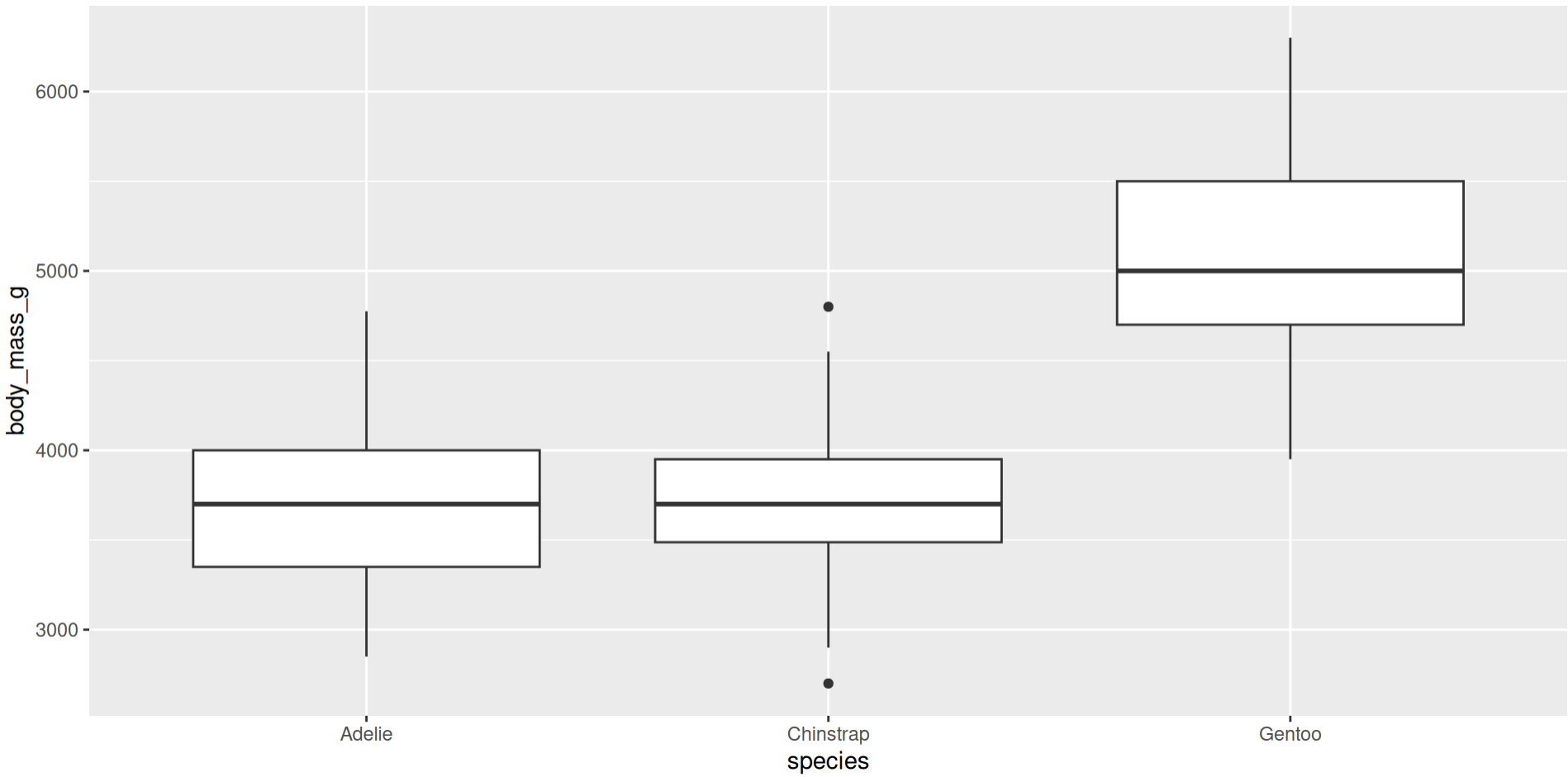
Break ☕ 🍵 🍜

10:00

Beziehungen visualisieren

Eine numerische und eine kategoriale Variable

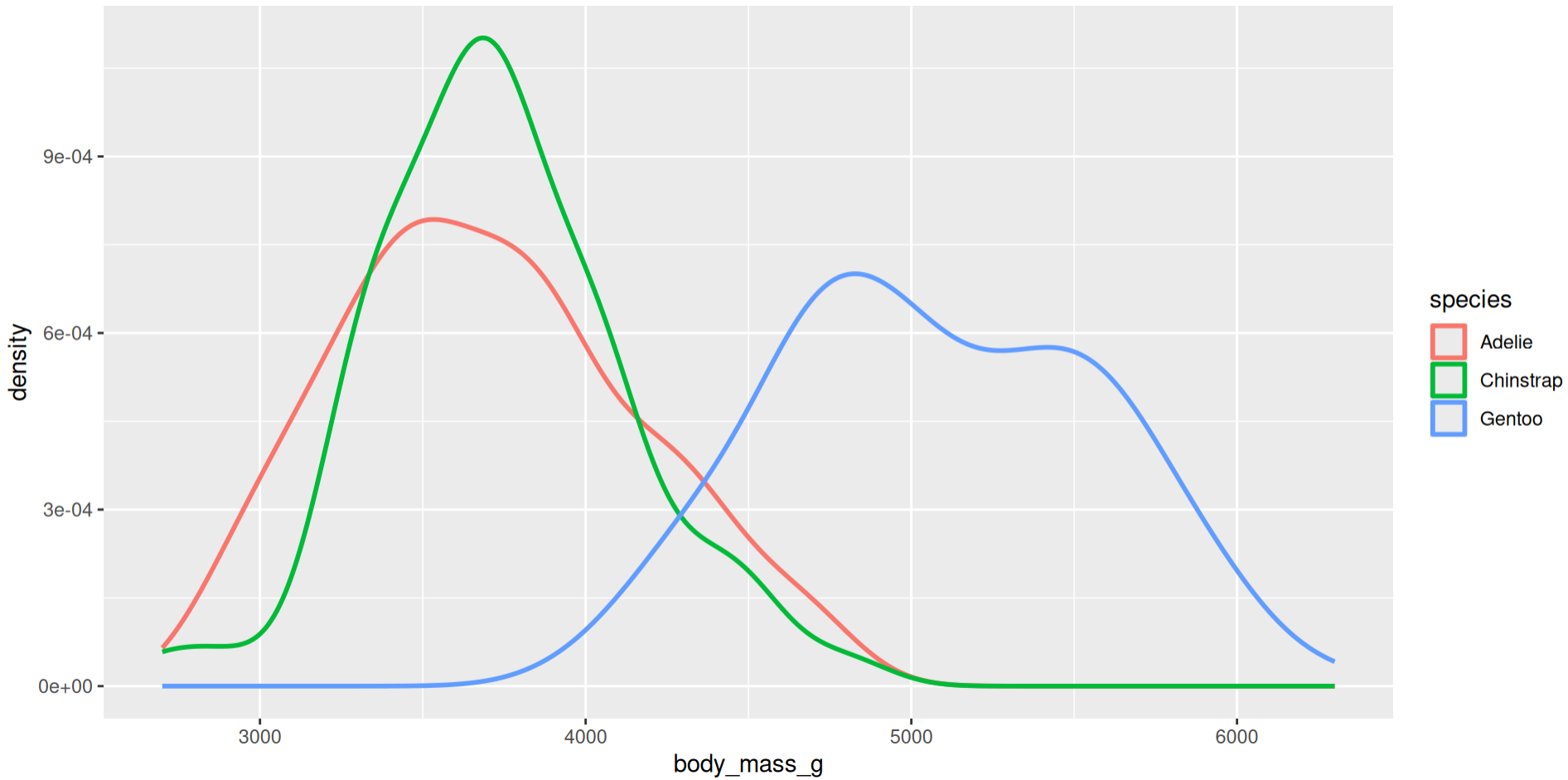
```
1 ggplot(penguins, aes(x = species, y = body_mass_g)) +
2   geom_boxplot()
```



Erklärungen zum Boxplot

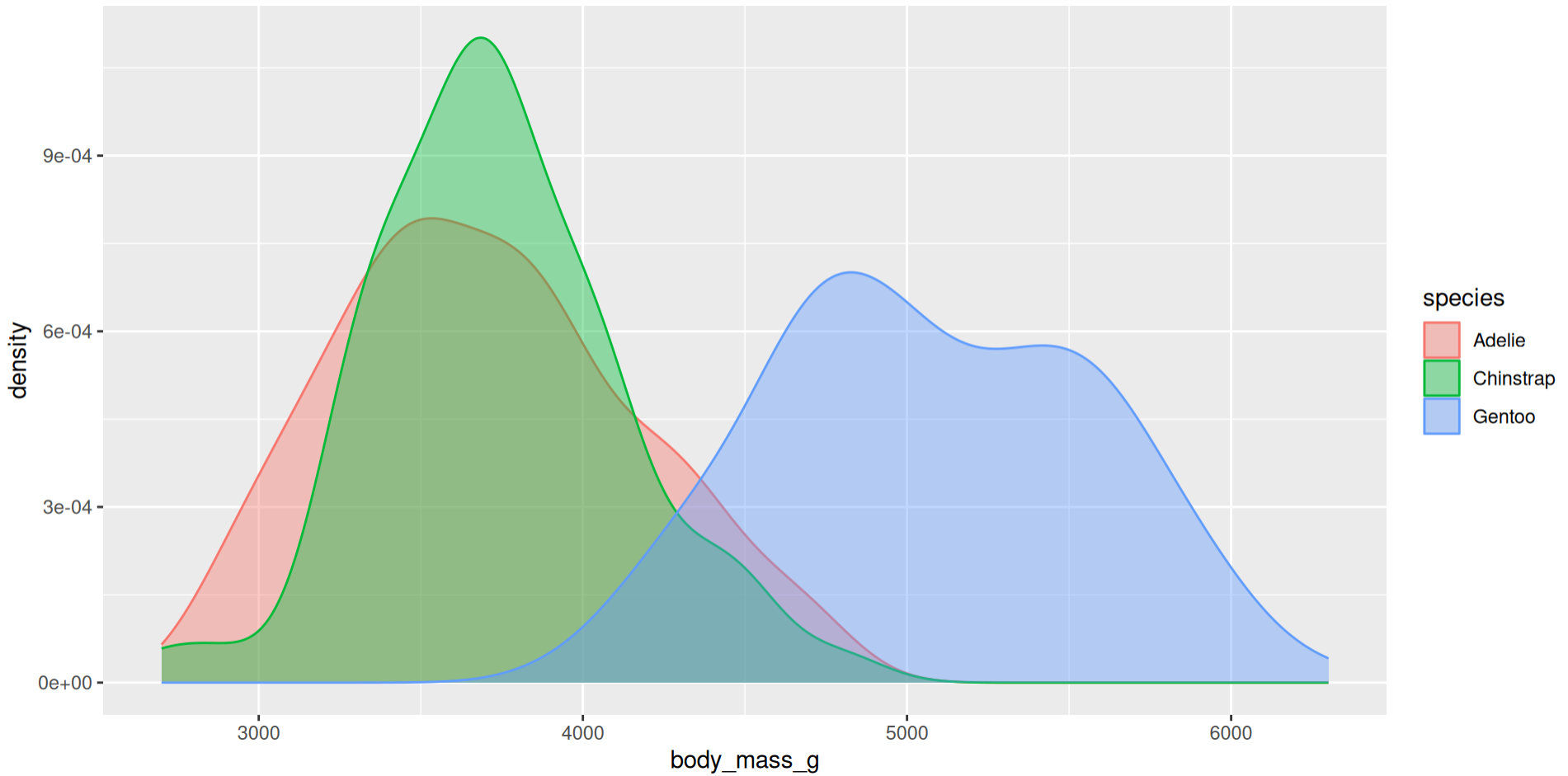
Eine numerische und eine kategoriale Variable

```
1 ggplot(penguins, aes(x = body_mass_g, colour = species)) +
2   geom_density(linewidth = 1)
```



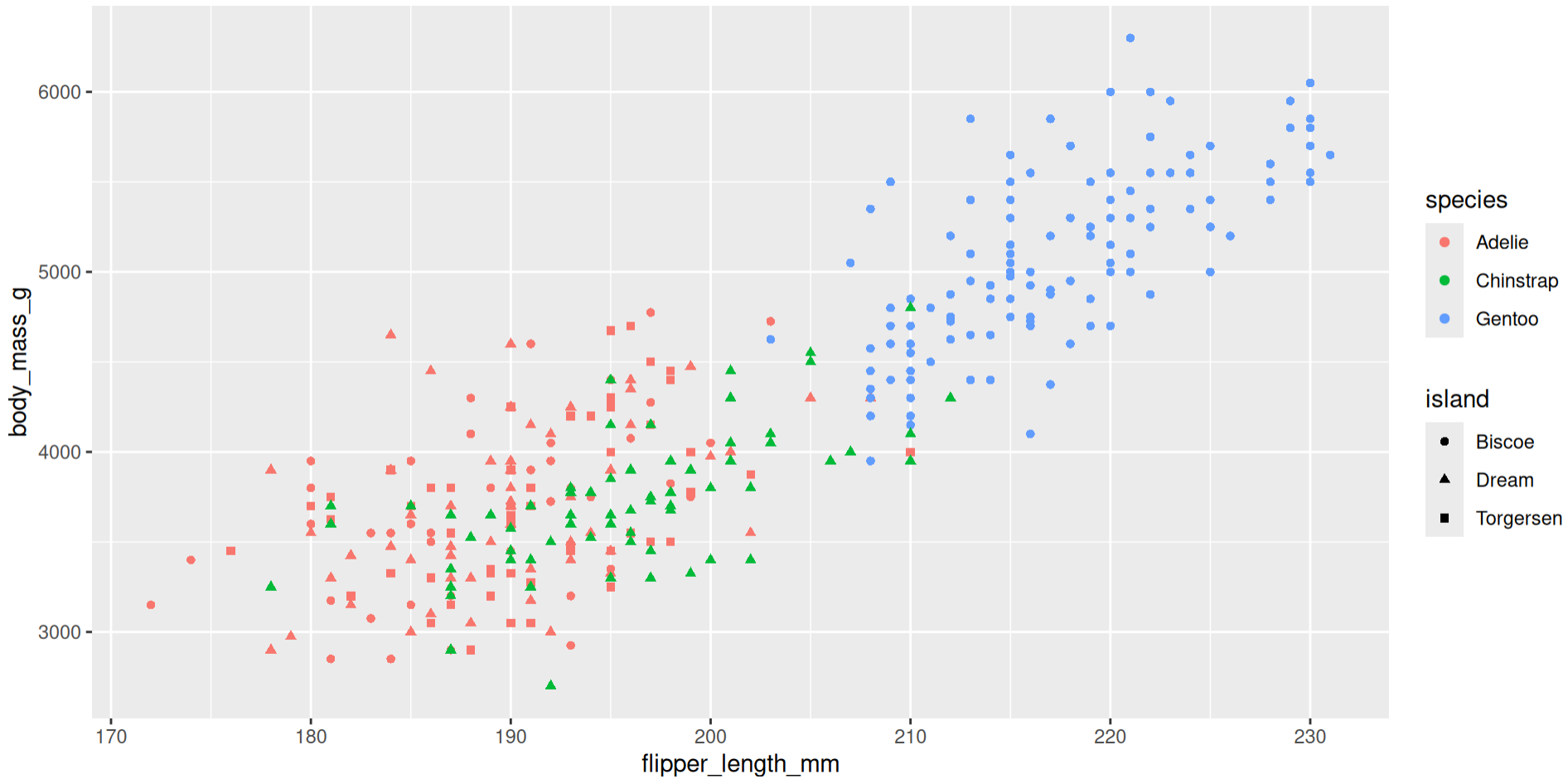
Eine numerische und eine kategoriale Variable

```
1  ggplot(penguins, aes(x = body_mass_g, colour = species, fill = species)) +
2    geom_density(alpha = 0.4)
```



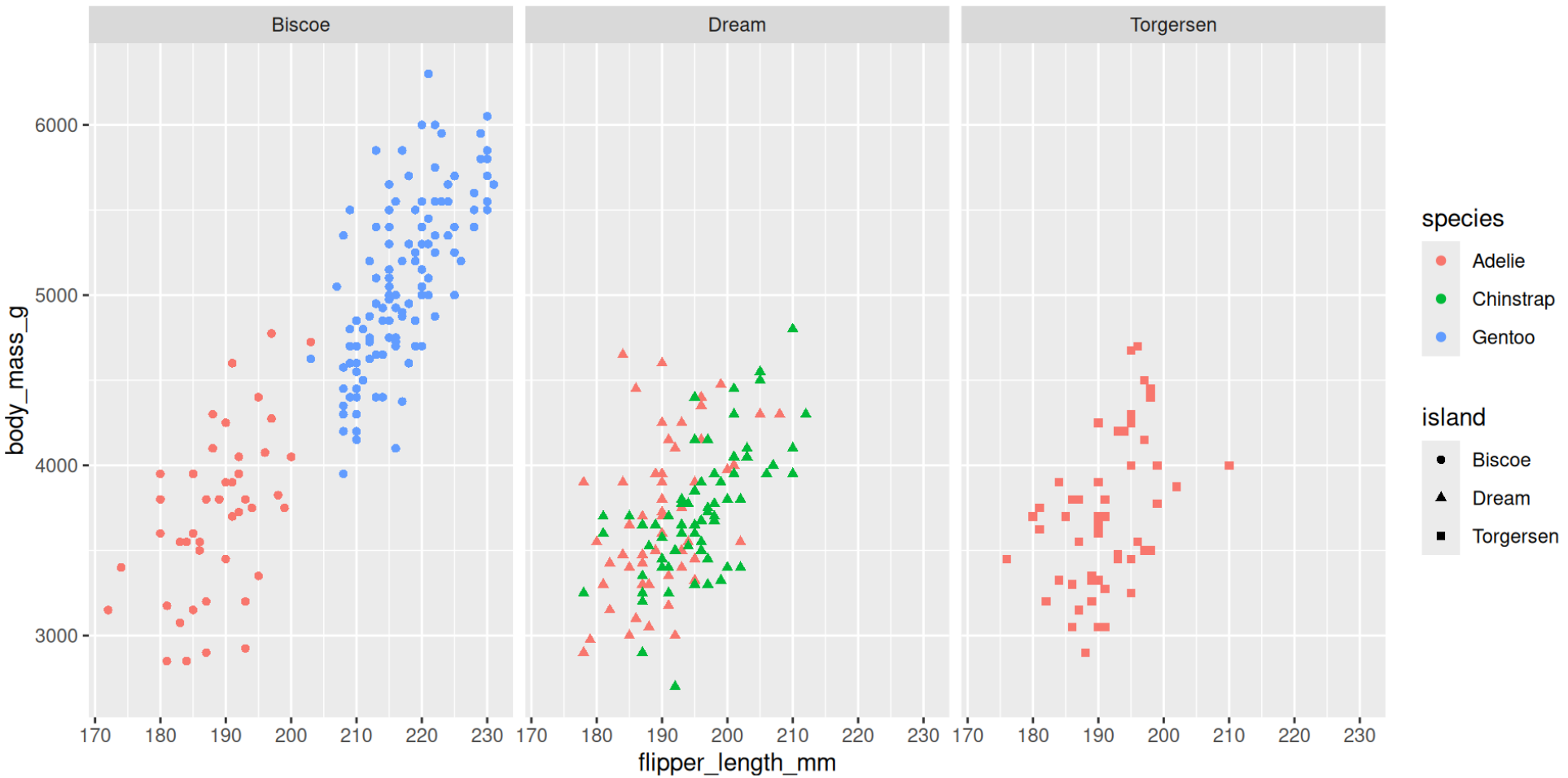
Drei oder mehr Variablen

```
1 ggplot(penguins, aes(x = flipper_length_mm, y = body_mass_g)) +
2   geom_point(aes(colour = species, shape = island))
```



Drei oder mehr Variablen

```
1 ggplot(penguins, aes(x = flipper_length_mm, y = body_mass_g)) +
2   geom_point(aes(colour = species, shape = island)) +
3   facet_wrap(~island)
```

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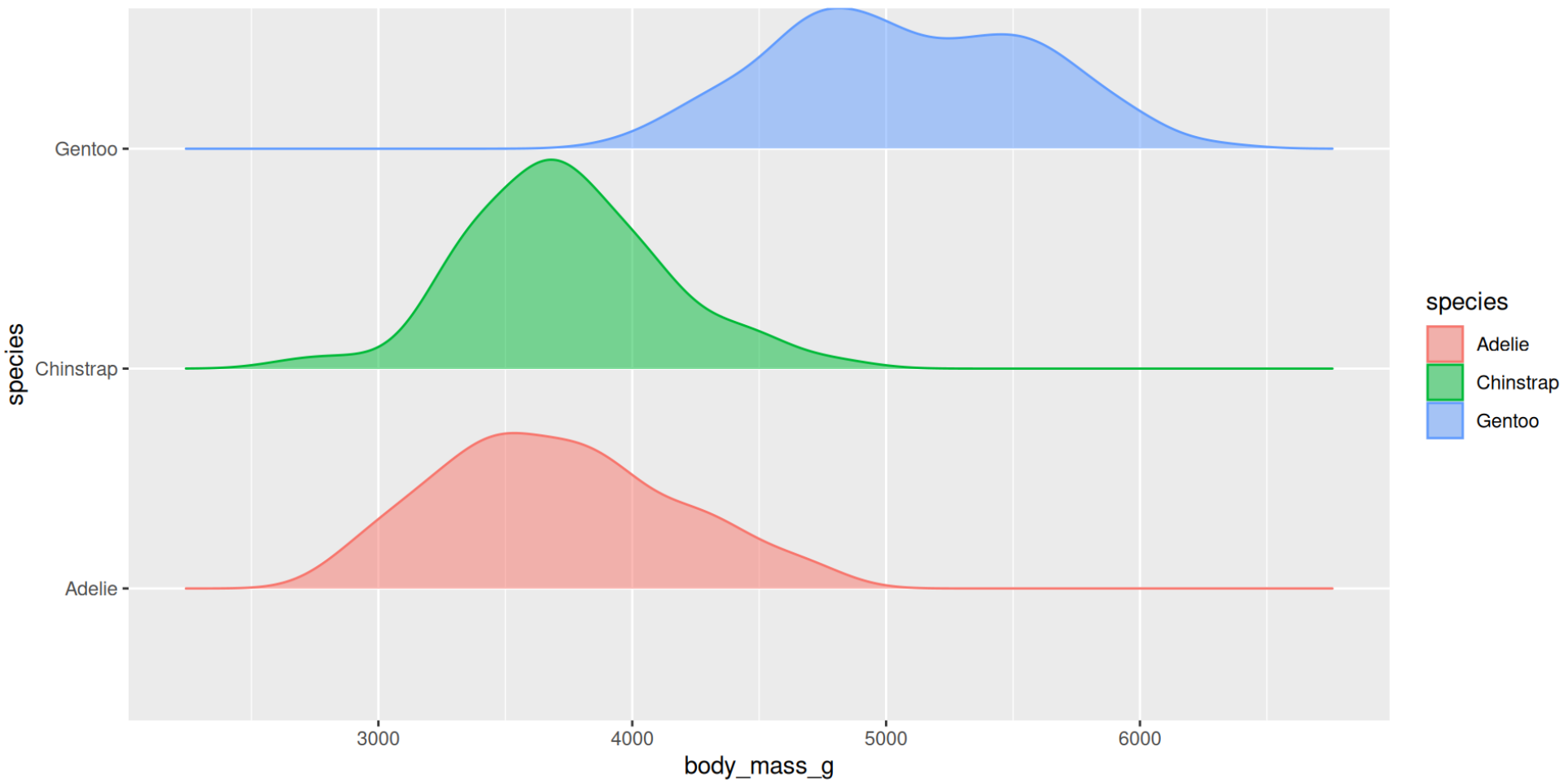
Praktikum 02b: Visualisierung

prak-02b-viz.qmd

20:00

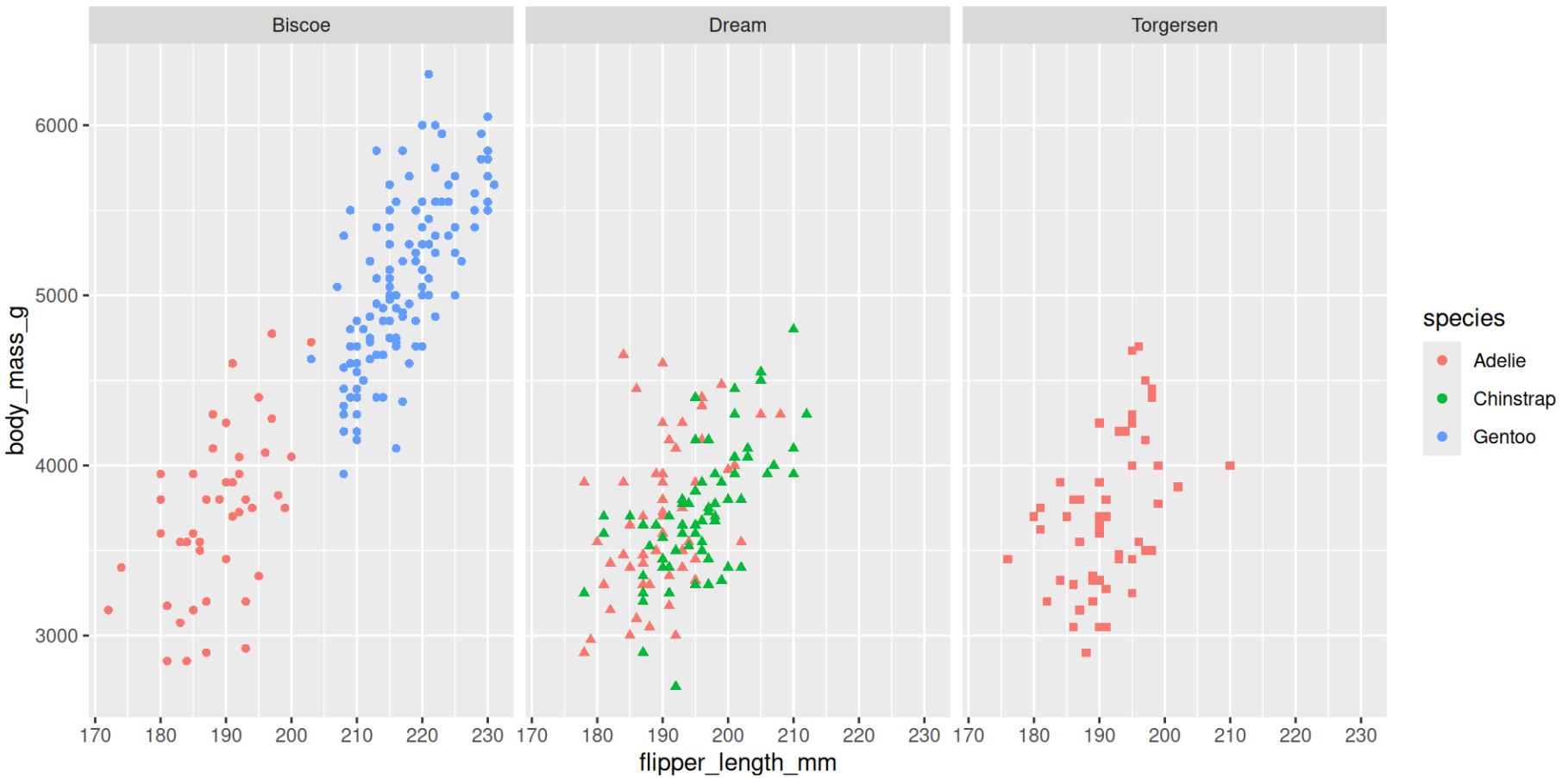
Eine numerische und eine kategoriale Variable

```
1 library(ggridges)
2 ggplot(penguins, aes(x = body_mass_g, y = species, fill = species, colour = specie
3   geom_density_ridges(scale = 0.95, alpha = 0.5)
```

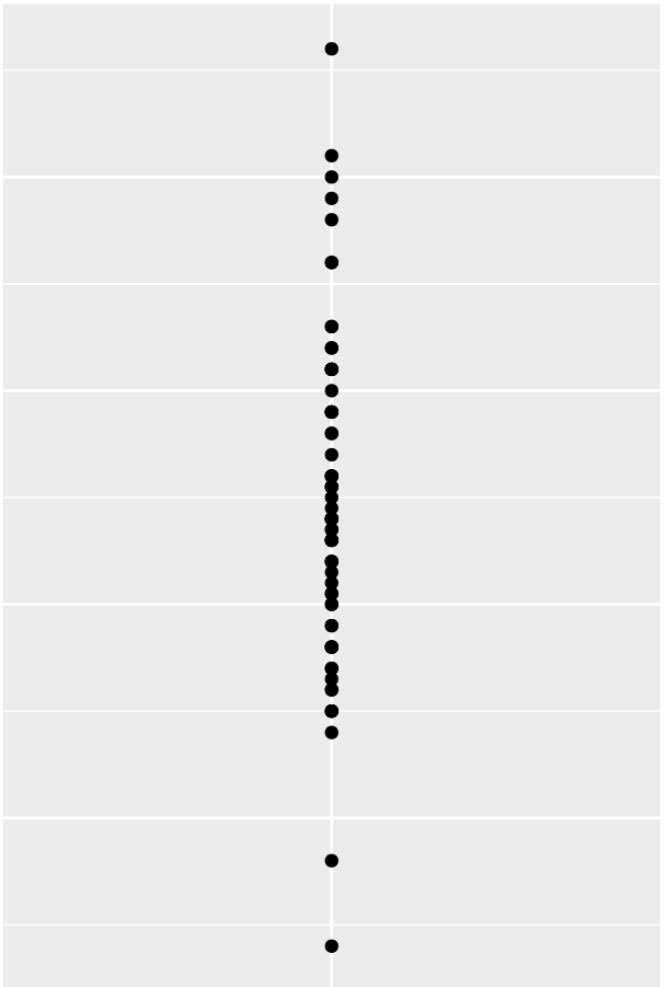


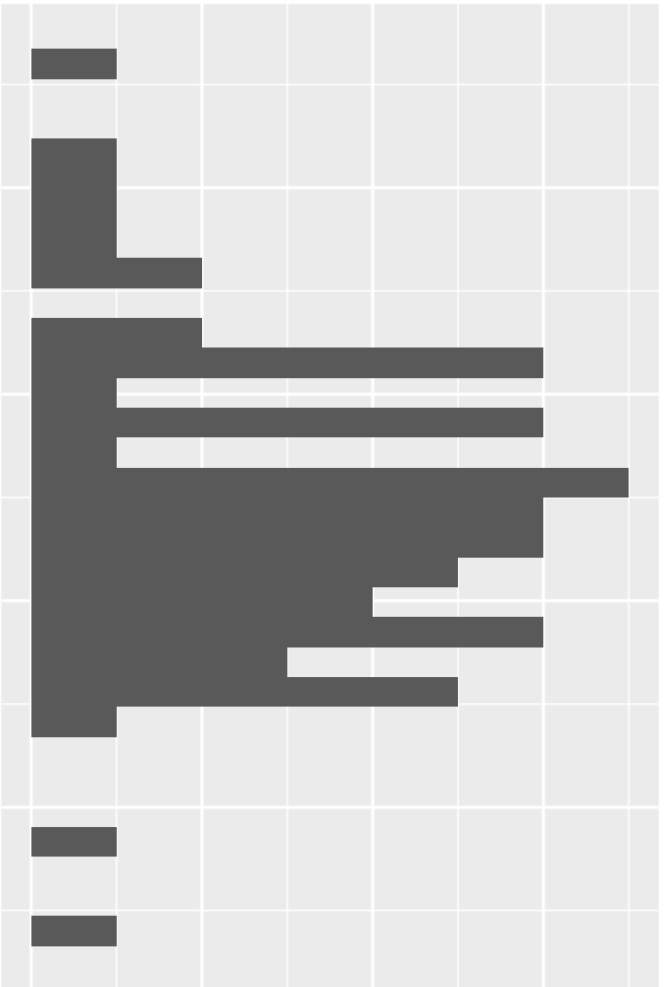
Drei oder mehr Variablen

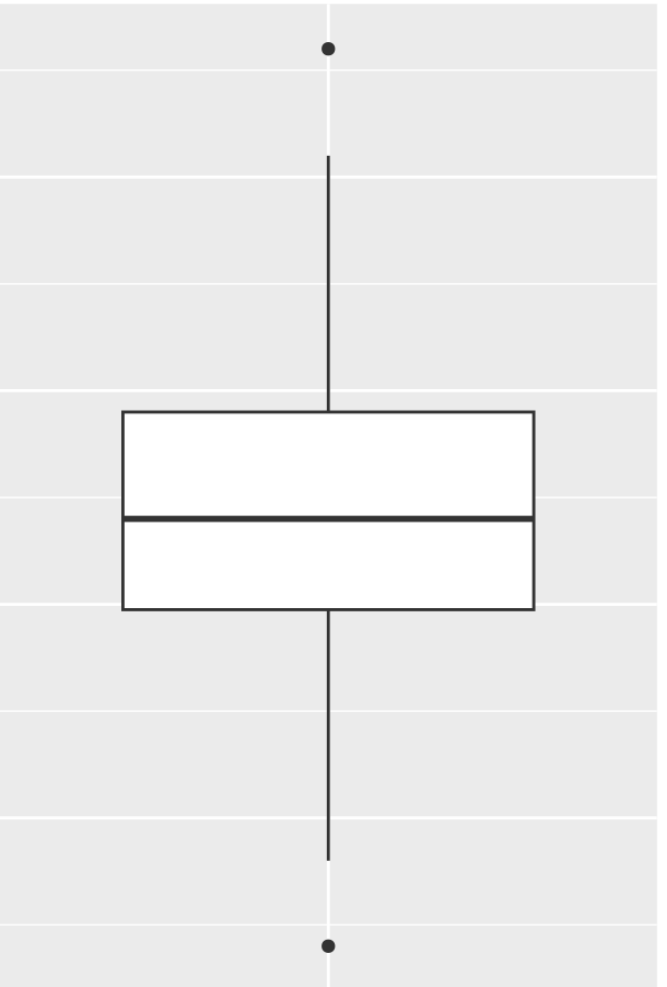
```
1  ggplot(penguins, aes(x = flipper_length_mm, y = body_mass_g)) +
2    geom_point(aes(colour = species, shape = island)) +
3    facet_wrap(~island) +
4    guides(shape = "none")
```



Eine numerische und eine kategoriale Variable

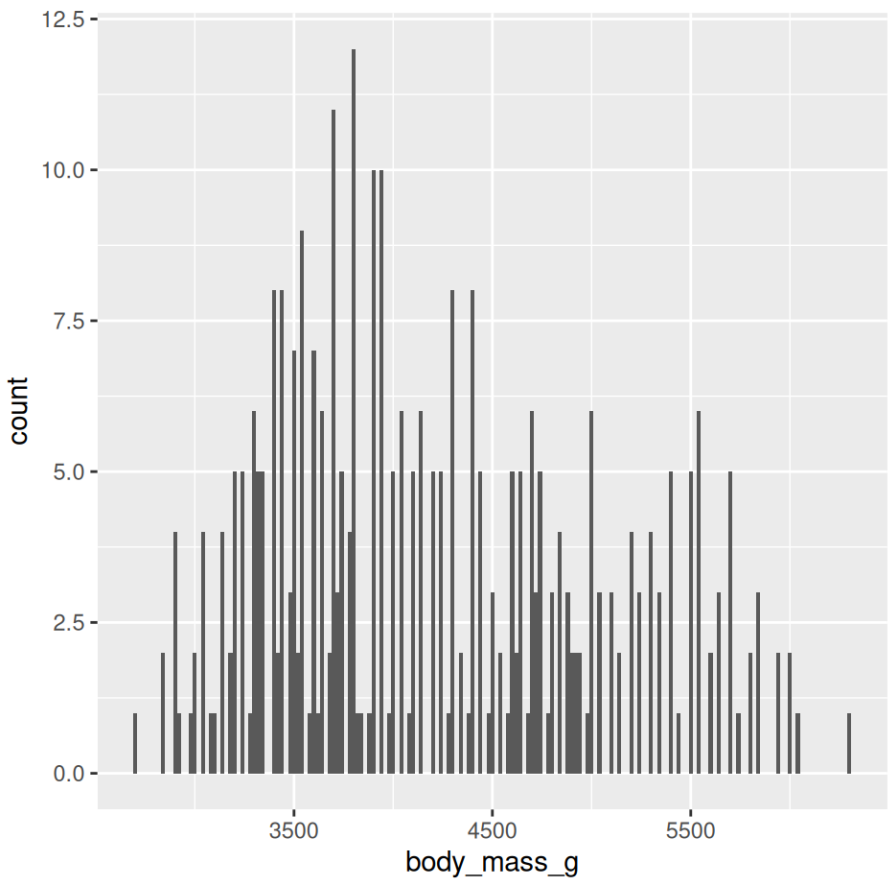


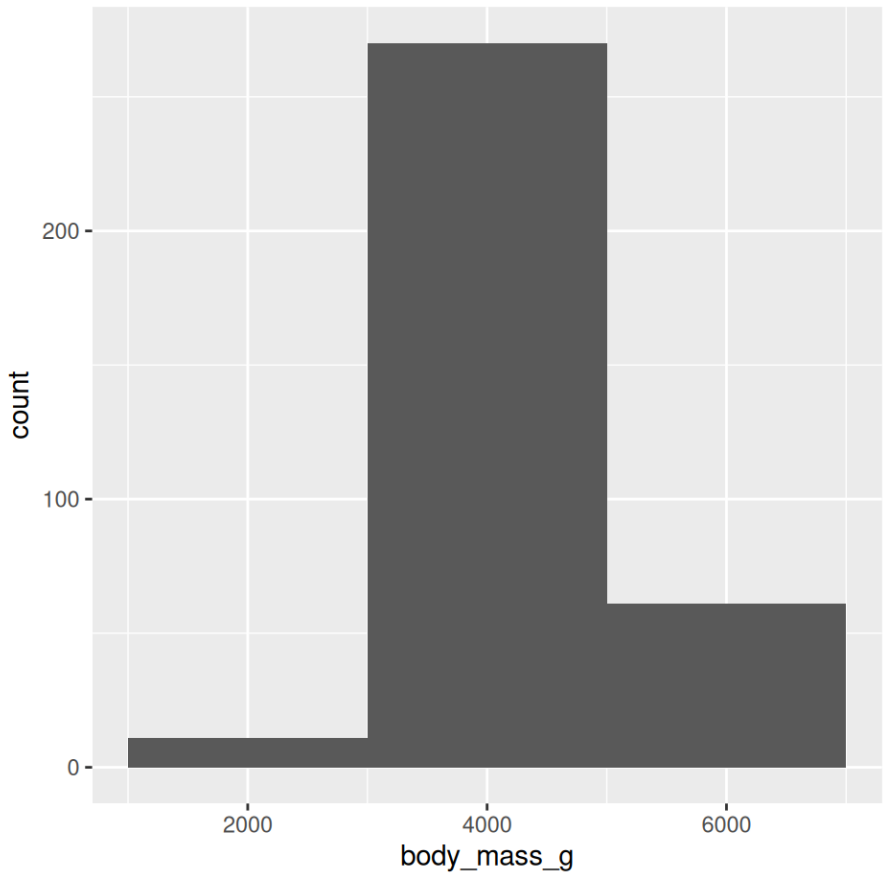




Numerische Variable

```
ggplot(penguins, aes(x = body_mass_g)) +
  geom_histogram(binwidth = 20) +
ggplot(penguins, aes(x = body_mass_g)) +
  geom_histogram(binwidth = 2000)
```





Kategoriale Variable

```
1 ggplot(penguins, aes(x = fct_infreq(species))) +
2   geom_bar()
```