

# **COMM101: Data Visualization with ggplot**

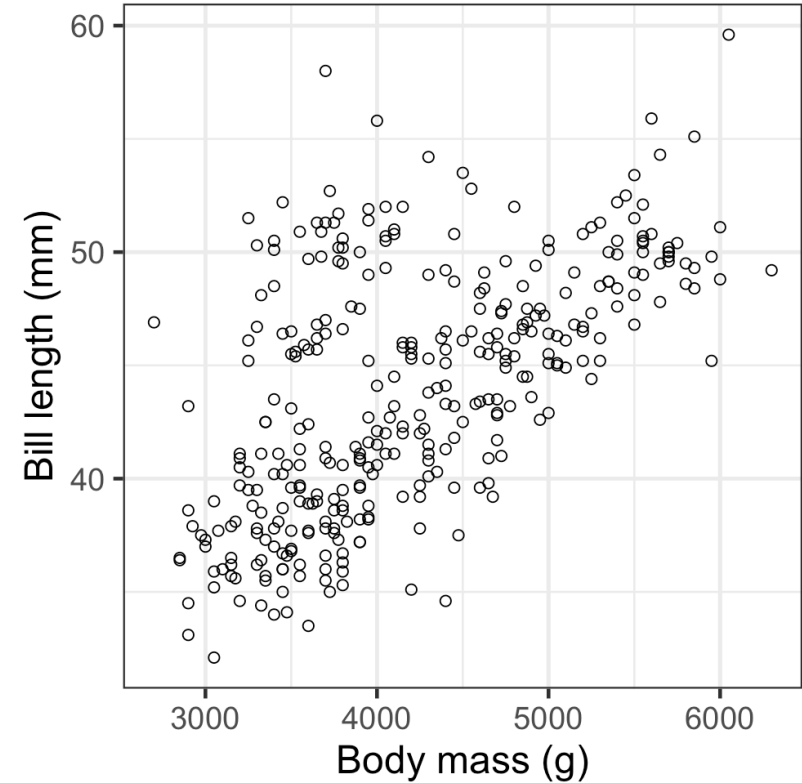
**Welcome to the grammar of graphics**

**MARINCS 100B | Intro to Marine Data Science | Winter 2025**

## **Key concepts**

# Data, mapping, and geometries

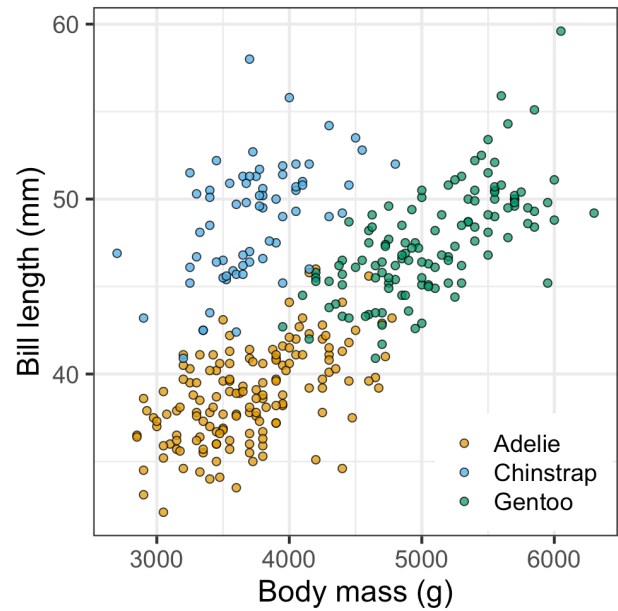
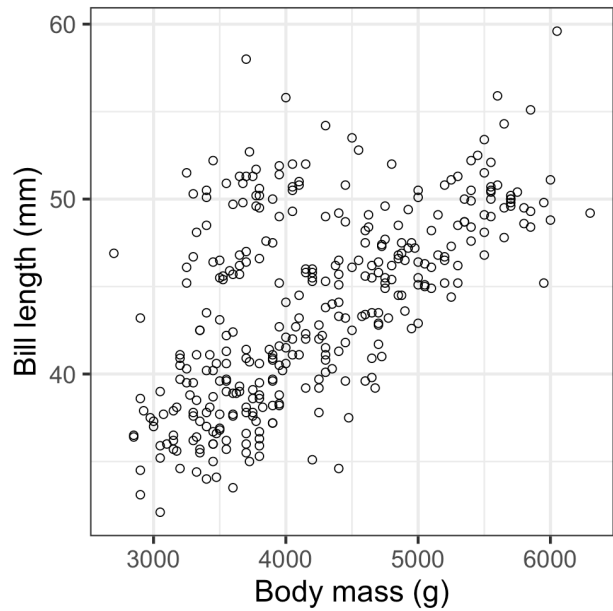
species	body_mass_g	bill_length_mm
Adelie	3750	39.1
Gentoo	5400	49.9
Chinstrap	3500	46.5



## **Data, mapping, and geometries**

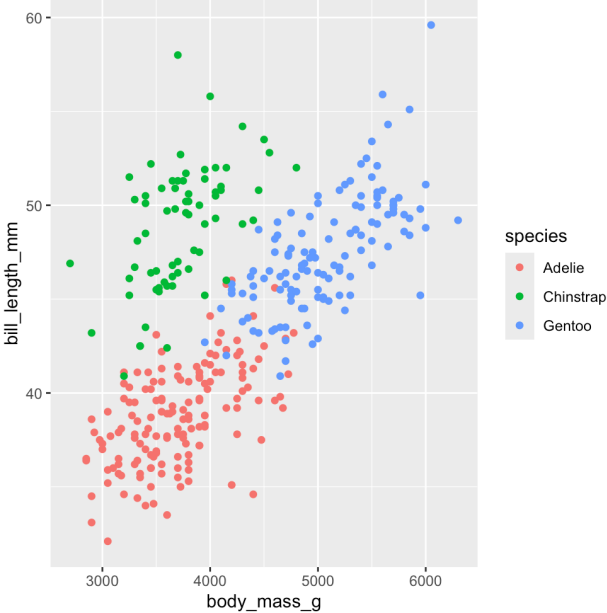
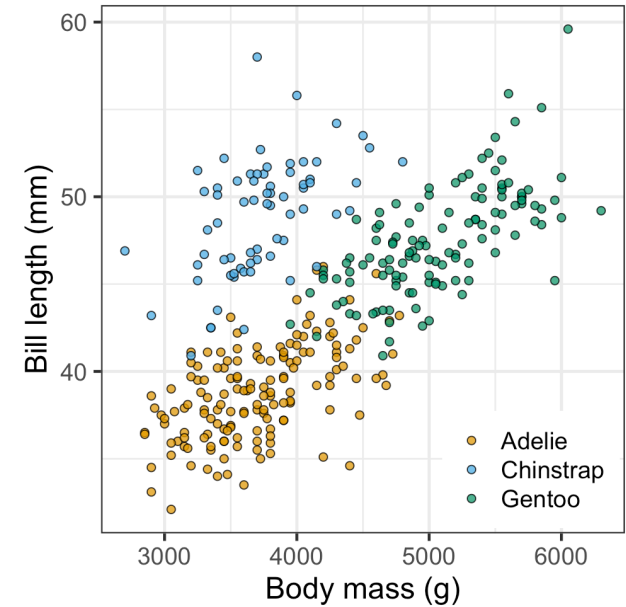
# Scales and themes

species	body_mass_g	bill_length_mm
Adelie	3750	39.1
Gentoo	5400	49.9
Chinstrap	3500	46.5



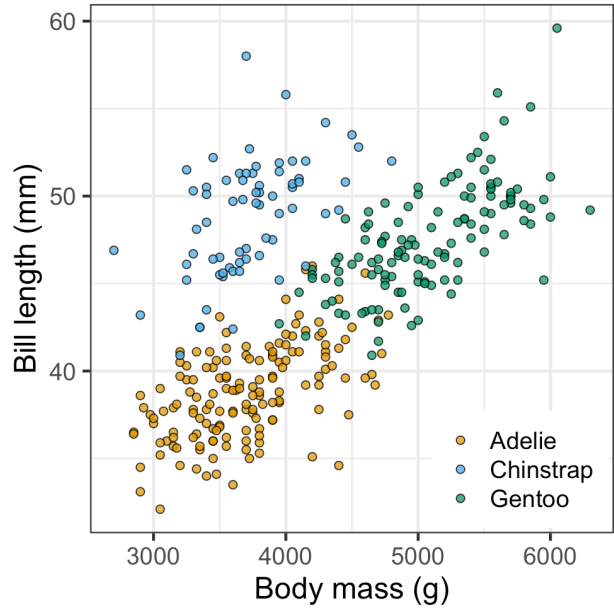
## **Scales and themes**

# Visualization best practices



# Recap

species	body_mass_g	bill_length_mm
Adelie	3750	39.1
Gentoo	5400	49.9
Chinstrap	3500	46.5





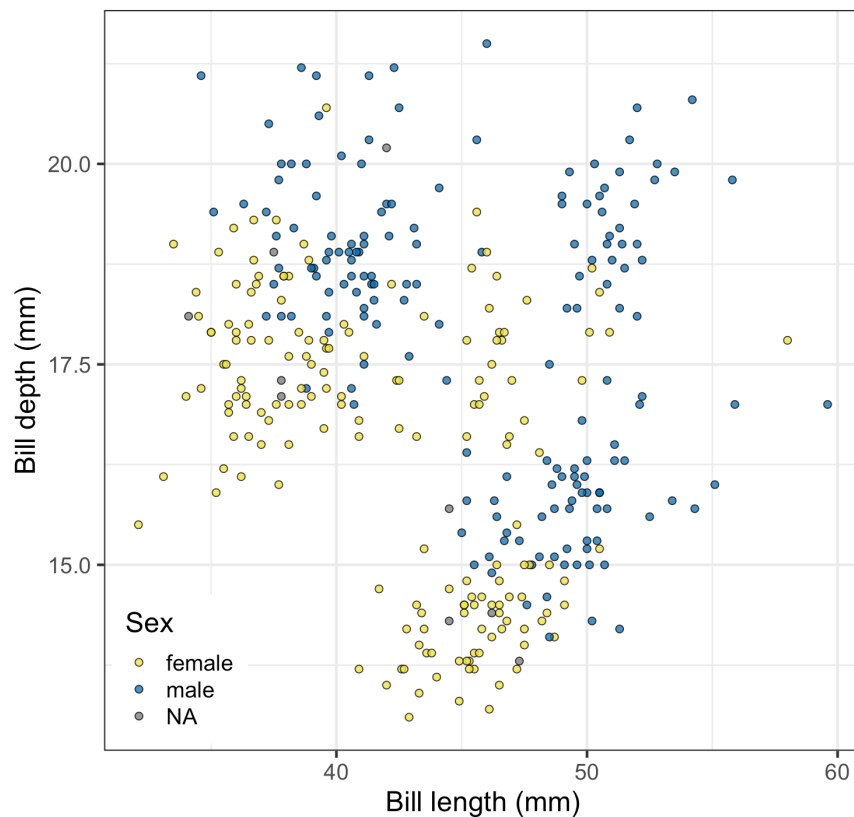
## **New vocabulary and lingering questions**

New vocabulary

Lingering questions

## Exercises

Describe the grammar of graphics components (data, geometries, mapping, scales, theme) in the figure below.



Data: the data is about the bill length and bill depth, categorized by sex.

Geometries: represented by dots showing individual data points.

Mapping: bill length and depth are x and y axis. Sex is shown by color of dots.

Scales: male and female clearly distinguished by blue versus yellow.

Theme: sex legend in negative space in corner, white background makes it easier to distinguish colors.

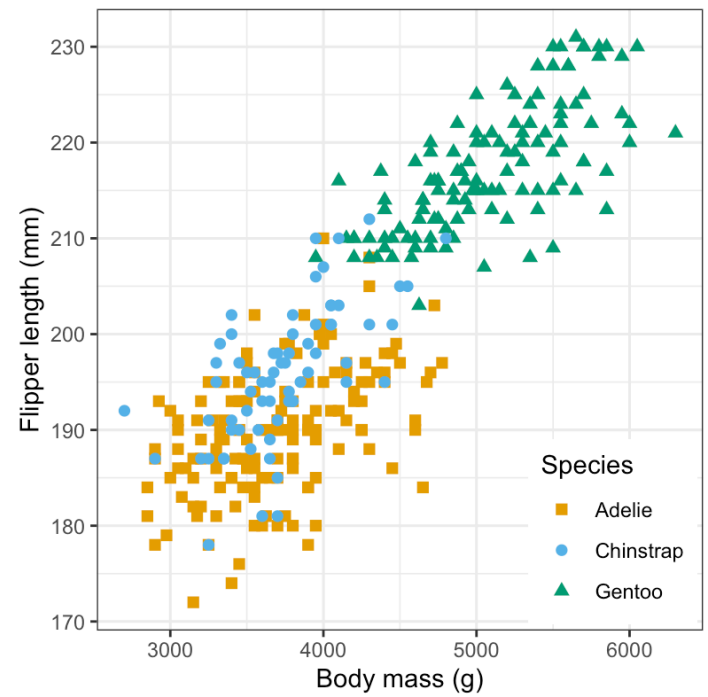
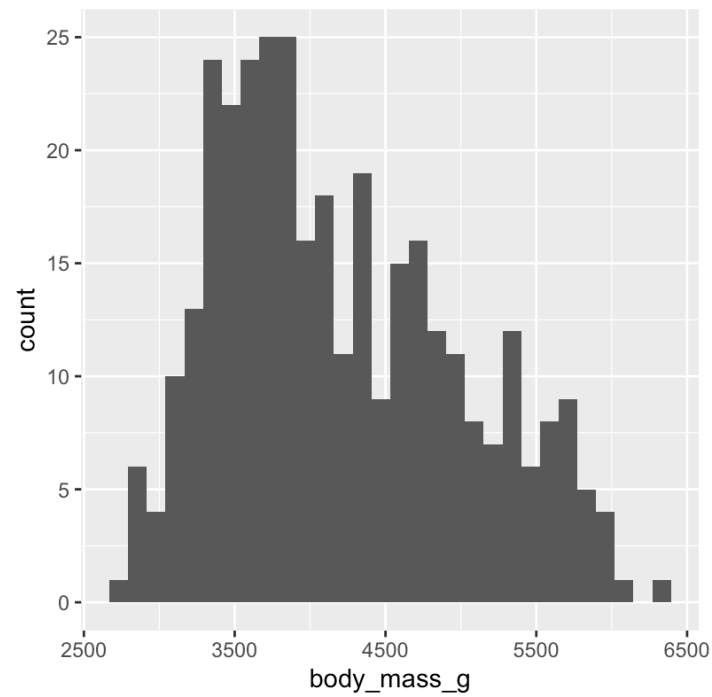
# **COMM101: Data Visualization with ggplot**

**Introducing ggplot**

**MARINCS 100B | Intro to Marine Data Science | Winter 2025**

## **Key concepts**

# Demo in R



## Recap

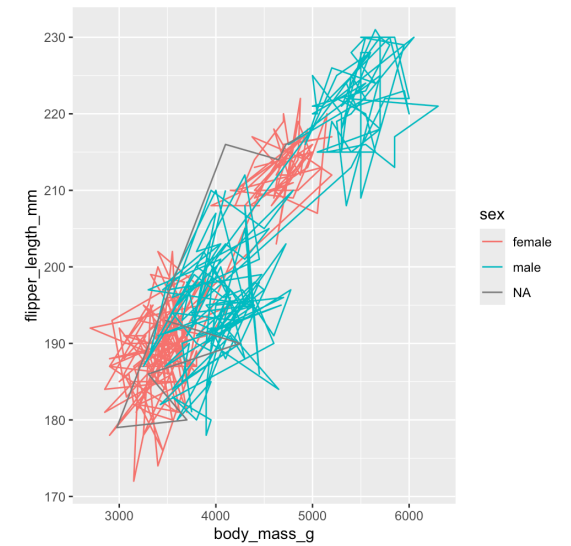
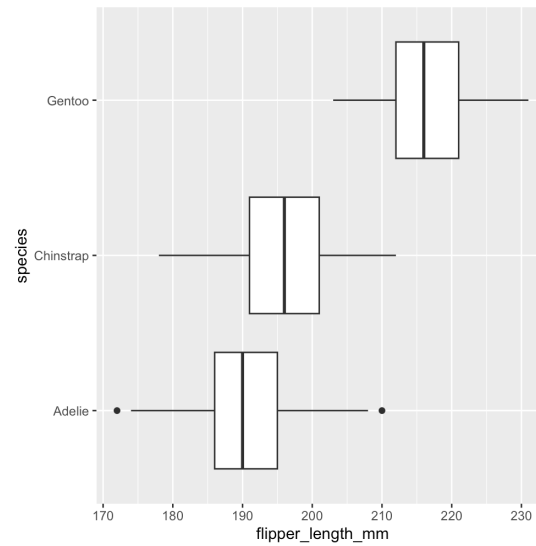
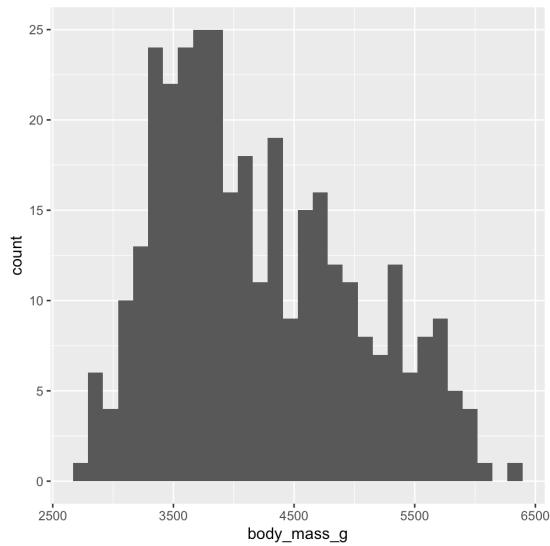
## **New vocabulary and lingering questions**

New vocabulary

Lingering questions

# Exercises

Here are three figures. Edit the code in comm101b.R so the outputs match the figures below.



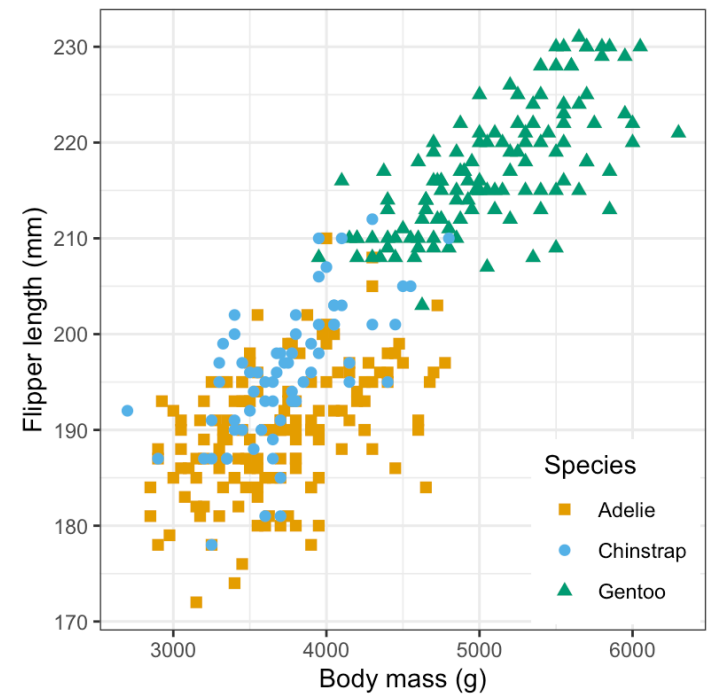
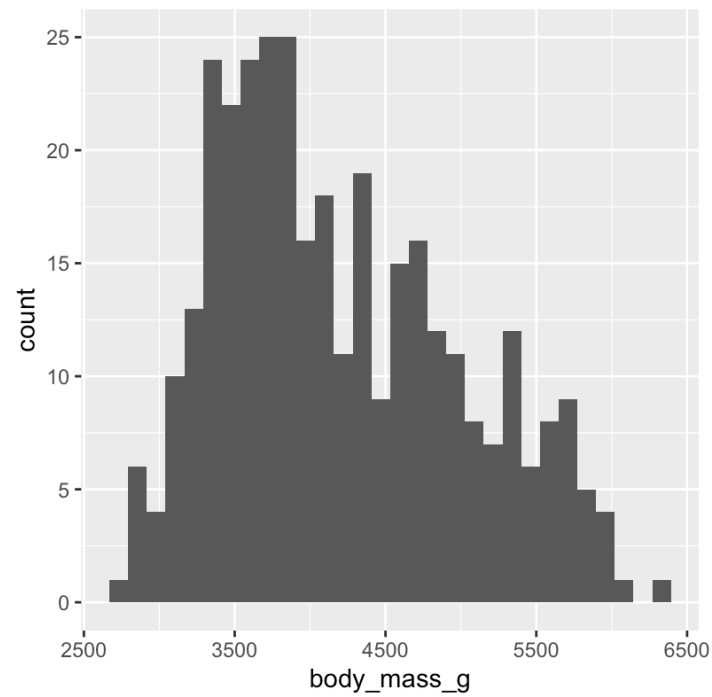


# **COMM101: Data Visualization with ggplot**

**Customization with scales and themes**

## **Key concepts**

# Demo in R



## Recap

## **New vocabulary and lingering questions**

New vocabulary

Lingering questions

## Exercises

comm101c.R contains the code to make the figure below. Edit the code to use scales and themes to improve the visual presentation.

