Socio-Informatics 348
Practical 1

Submission Instructions

- Submit your completed practical as `studentnumber.qmd` on SocSciLearn.
- Submissions are checked for completeness, not correctness.
- At least 80% of exercises must be attempted to receive 1% towards AF assessment.
- Attendance of at least one practical session per week is required to earn the 1% for that week's practical.

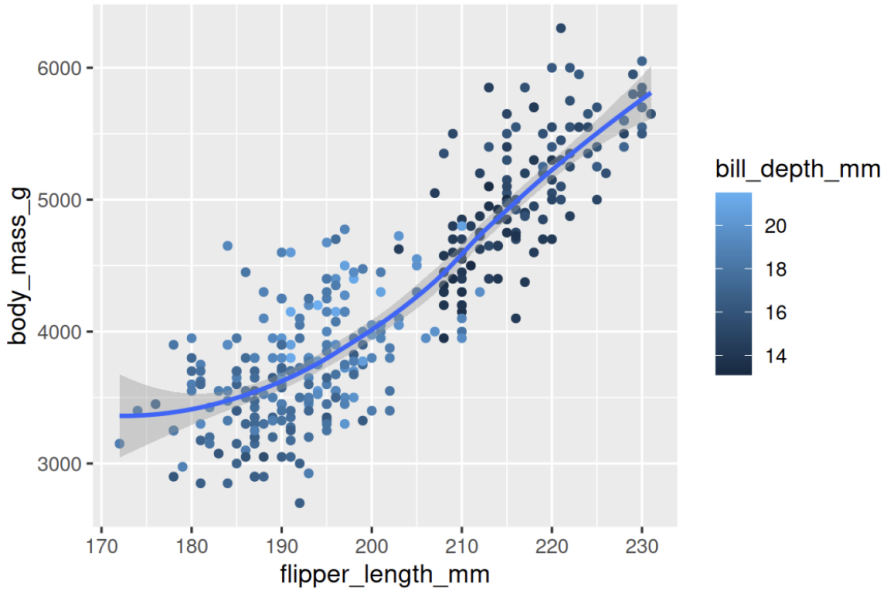
Deadline

Friday 15 August, 17:00 (submit on SocSciLearn)

Exercises

Section 1: Palmer Penguins (using `palmerpenguins`)

1. How many rows are in penguins? How many columns?
2. Make a scatterplot of `bill_depth_mm` vs. `bill_length_mm`. That is, make a scatterplot with `bill_depth_mm` on the y-axis and `bill_length_mm` on the x-axis.
3. Add the following caption to the plot you made in the Question 2: "Data come from the palmerpenguins package."
4. Try a scatterplot of `species` vs. `bill_depth_mm`. What would be a better geom to use instead?
5. Recreate the given visualisation using the geom you have suggested in Question 4.
6. Recreate the following visualisation:



Section 2: Diamonds Dataset (from `ggplot2`)

7. Create a histogram of `carat`. Try different bin widths. Which binwidth provides the most insightful patterns?

Section 3: MPG Dataset (from `ggplot2`)

8. Use the `mpg` dataset. Make a scatterplot of `hwy` vs. `displ`. Then map:

   - a numerical variable to color
   - a numerical variable to size
   - a numerical variable to both color and size
   - a categorical variable to shape

   How do these aesthetics behave differently for categorical vs. numerical variables?

Section 4: NYC Flights (from `nycflights13`)

9. Write separate pipelines to find flights that:

   - Had an arrival delay of two or more hours
   - Went to Houston (IAH or HOU)
   - Were operated by United, American, or Delta
   - Departed in July, August, or September
   - Arrived 2+ hours late, but left on time
   - Were delayed by at least 1 hour, but gained over 30 mins in air

10. Was there at least one flight every day of 2013?

11. Which flights traveled the farthest?