

Problem Set 4

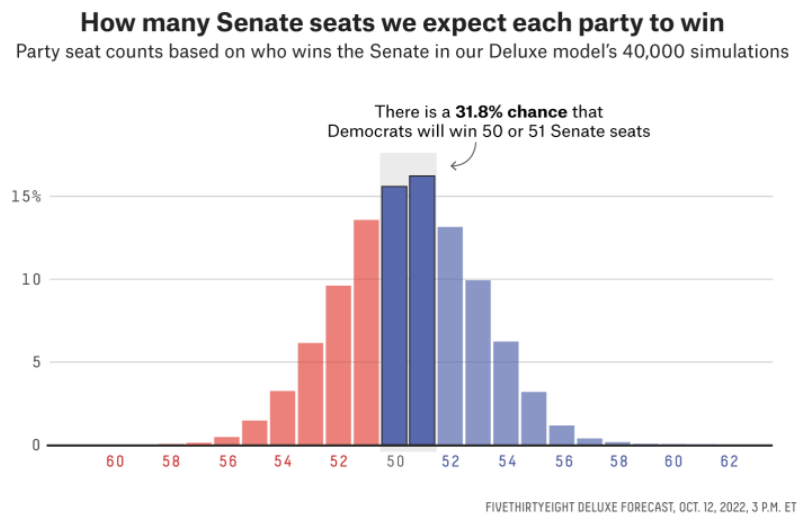
Due 6 March, 2024

Instructions

Replicate the plots below to the best of your ability. Try to match *every* element exactly. Please **echo** all code chunks. The chunks must show every step you took and option you specified to generate the plots. Submit in hard copy by March 6.

Senate projections

Forecasters at FiveThirtyEight.com published the plot below in a piece describing their simulations and predictions in advance of the 2022 U.S. midterm elections.



1. Use the `senate_seat_distribution_2022.csv` data to replicate the plot exactly. The *one exception*: ignore the text grob, arrow, and shading about the chance of Democrats winning 50 or 51 seats. You can read more about the data at the FiveThirtyEight github repository for their forecast. Your printed plot should be 5 inches wide and 3.5 inches tall.

Blue Jay data

I love birds. If I could start over, I might choose to study bird behavior instead of human behavior. The plot below shows the relationship between head length and body mass for blue jays.

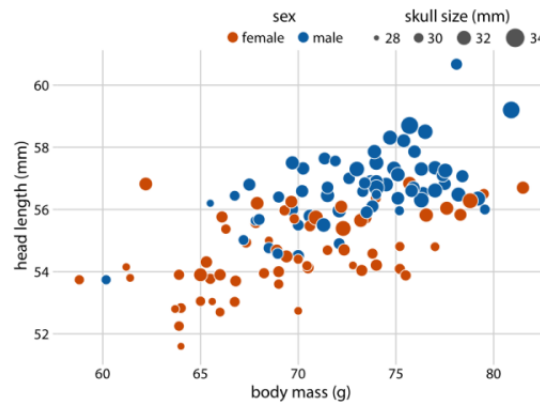


Figure 1: Head length versus body mass for 123 blue jays. The birds' sex is indicated by color, and the birds' skull size by symbol size. Head-length measurements include the length of the bill while skull-size measurements do not. Data source: Keith Tarvin, Oberlin College.

2. Use the `blue_jays.rda` data to replicate the plot in full, including the note describing the plot. The final output plot should be 4 inches wide and 3 inches tall.