Our model calculates state-specific Trump vote shares by leveraging weighted historical data from presidential election and polling datasets .It defines calculate_trump_vote_share() to filter each dataset by year, group by state, and compute Trump's vote share as a percentage of total votes, then dynamically renames columns to reflect the election year. We merged the 2016 and 2020 Trump vote shares with state-level polling data for Trump to create a weighted average, applying poll_weight and election_weight variables for custom control over historical influence in the prediction. Finally, it computes the difference between Trump's weighted vote share and Republican Senate candidates' polling rates, highlighting any deviations in support across state lines using mutate to append calculated vote-share differences. Our models for calculating the presidential turnout as well as Trump's overall vote share used very similar methodology.

In each model, we combined 2016 election data, 2020, election data, and polling data. We thought extensively about how to weight each of these datasets. For turnout, we made sure to consider how unprecedented the turnout rate in 2020 was, making note of the fact that COVID-19 restrictions allowed more people than ever the opportunity to vote-by-mail. Similarly, we considered past discrepancies between polling and actual election results when deciding how much to weight poll results when calculating various averages. In both 2016 and 2020, polls on average over-estimated democratic support. Thus, we decided to weight polls a bit lower, as they tend to underestimate republican turnout/support (unless they have gotten significantly better since 2020).

As for call times, we created a CSV with data from AP News which described when each state was called in 2016 and 2020. However, given the incredibly unique circumstances under which the 2020 election took place, it did not seem practical to make estimates based on an average of these two elections. We made a best guess instead, being informed by these past elections.