

Team Name: Temporally Challenged Collaborators

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Project Title: Visualizing the lack of proper representation in the US Congress and Judicial system.

Project Abstract: With the US general election coming up shortly, there has been a lot of attention paid toward the federal government. In particular, the rushed appointment of Amy Barrett to the Supreme Court when compared to the refusal to consider Merrick Garland highlights failures of the governing systems. There are several points that we wish to make clear to the viewer. We want to make the viewer understand through vivid visuals how the apportionment of an equal number of senators to states regardless of population, how the ability for Congress to refuse to consider legislation, and the lack of term limits for judicial appointments and Congress members all serve to make legislation and judicial decisions extremely unrepresentative of the general public. We will also propose possible measures to address these issues based on the intuition afforded by the visuals.

The data we will use will include partisan lean data from 538, records of legislation from congress.gov, confirmation data from senate.gov and uscourts.gov, and supreme court biographical information from supremecourt.gov.

Week 9

Team Agreement

- Team members will communicate responsibly and show up to group meetings on time.
- Team members will take each other's ideas and suggestions into account and will be able to communicate freely at any point of the project.
- Work hours will be split as evenly as possible, and each member will be willing to work proactively on the project. We will delegate tasks in a logical manner that makes for efficient progress.
- Work will not necessarily be done together in person, but we will discuss general strategies before implementing them individually.
- Work will not be left until the last minute.
- Final design decisions will be discussed among all members; fair compromises will be made when necessary.
- We will use Github to store our work and coordinate between the versions.
- We will each do our best work, and we will also try to have some fun along the way.

Signatures: Avi Swartz, Elliot Parlin, Ralph Estanboulieh

Date: 11/1/20

Background, Motivation, Related Work: this project was inspired by the types of data analyses and visualizations performed on the FiveThirtyEight website. With the election near and the recent supreme court nomination, there have been many discussions about whether the structure of the government is just. There have been some intriguing articles on FiveThirtyEight on this topic, and many other discussions in the commentary sections of other newspapers, but surprisingly very poor visualizations to accompany the walls of text (I'm guessing FiveThirtyEight is too busy with their main election model), so we want to provide clear visualizations to accompany these topics.

Audience and Questions: the intended audience for our final project are voters, but the questions we are asking are readily accessible to anyone with a basic understanding of the US government. Although this will be too late for the upcoming general election, these topics will surely still be widely discussed afterward and we can hopefully provide context as to why they are important.

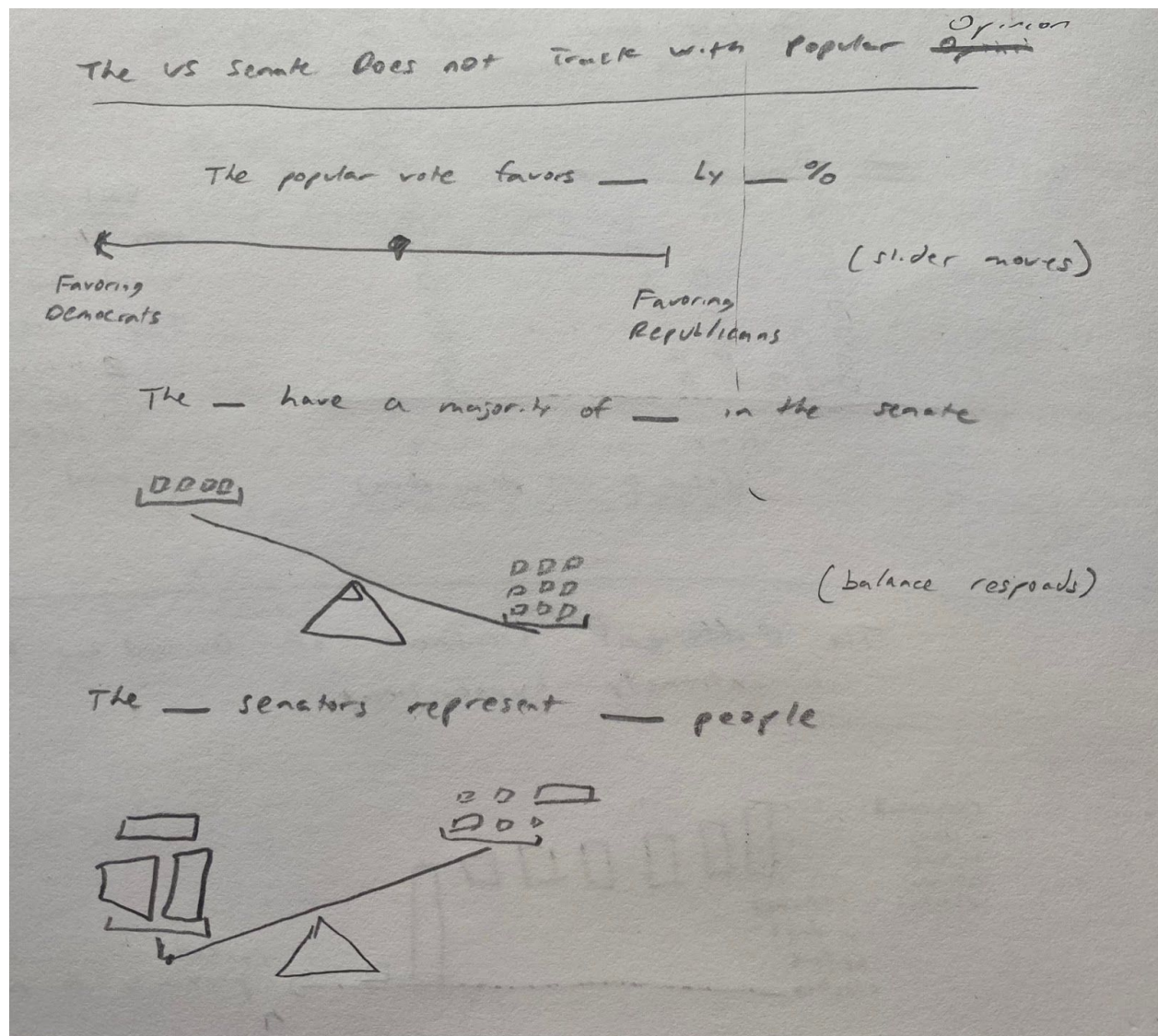
Here are some of the questions we plan to answer:

1. Is the Senate biased in its composition, i.e. does the body of U.S. Senators accurately reflect the political make-up of the American people? In particular, does the policy of two senators per state create a distortion in representation?
2. If there is a distortion, how extreme can the discrepancy get? To what extent is California underrepresented? To what extent is Wyoming overrepresented? How much does one party need to overperform to compensate?
3. Assuming the Senate is biased, does its failure to accurately reflect the political desires of the American people lead to political decisions that contradict popular opinion?
4. Does bias in the Senate lead to bias in the Supreme Court?
5. Was the refusal to vote on Merrick Garland due to the proximity of the election consistent with historical precedent?
6. Was the confirmation of Amy Barrett similar to previous confirmations or was it rushed to completion?
7. Does bias in the Senate lead to bias in lower level courts as well?
8. Has there been a decline in Senate willingness to consider opposite party nominations?
9. Has the lifetime appointment of Supreme Court justices led to longer terms now compared to in the 1800s?
10. If so, does this correspond to an increase in life expectancy over 200 years, or are the justices being appointed at a younger age, or both?

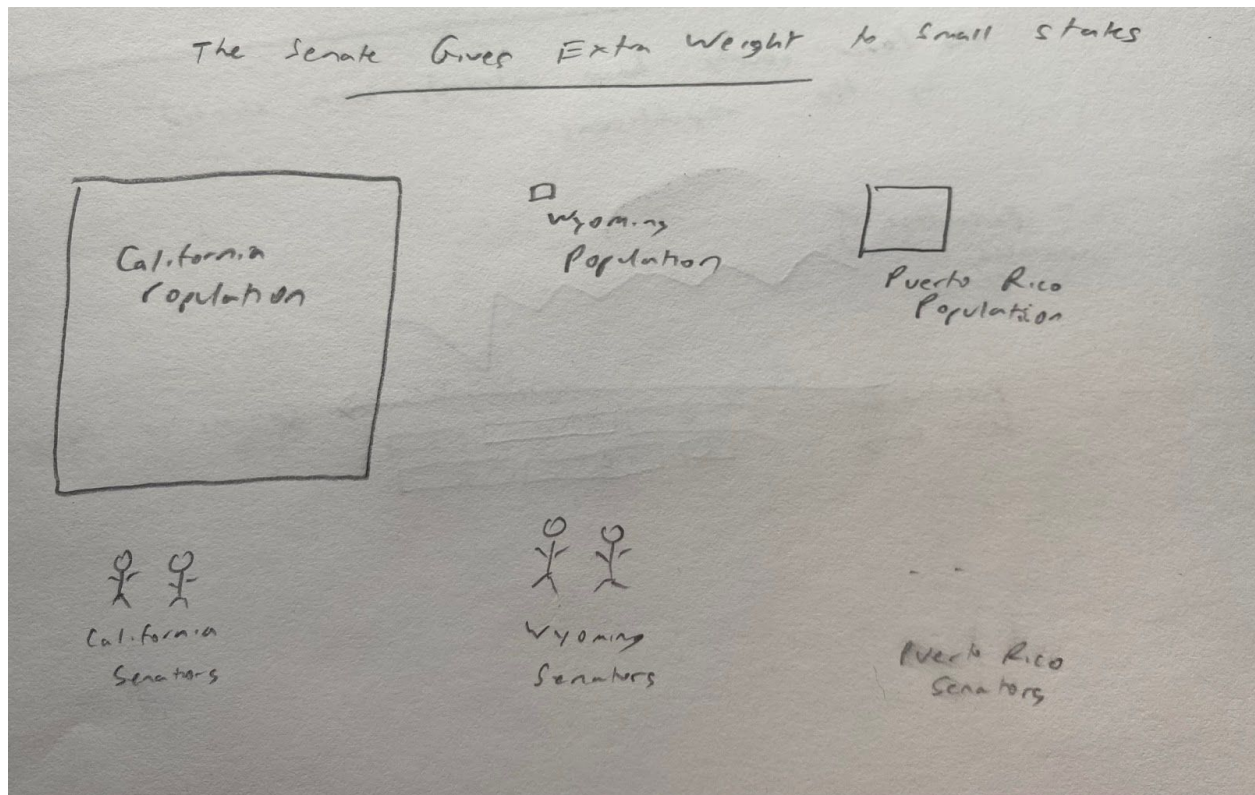
Data and Data Cleanup: Based on the questions we have in mind, we have these data sources. As we explore this data, we will find more data as necessary

- 538's state and district partisan lean data:
 - <https://github.com/fivethirtyeight/data/tree/master/partisan-lean>
 - This will tell us how biased each state and district is compared to the country as a whole
 - This data is already cleaned and stored in a CSV
- Supreme Court nomination history
 - <https://www.senate.gov/legislative/nominations/SupremeCourtNominations1789present.htm>
 - This data tells us when each Supreme Court justice was nominated and confirmed to study the patterns in confirmations dating back to George Washington
 - The data is presented in an HTML table, so it will take a bit of effort to port it into a CSV
- Senate Judiciary Committee confirmations
 - <https://www.congress.gov/search?searchResultViewType=expanded&q=%7B%22source%22%3A%22nominations%22%2C%22senate-committee%22%3A%22Judiciary%22%2C%22nomination-status%22%3A%22Confirmed+by+Senate%22%7D>
 - This data tells us how many judicial confirmations were passed by the Senate going back to 1981.
 - The www.congress.gov legislative search tool should be helpful in general to pull relevant data. However, we can only download 1000 results at a time, so it will probably be necessary to look at the breakdown of results in the filters to pull more data from there.
- Supreme Court Terms
 - https://www.supremecourt.gov/about/members_text.aspx
 - This data tells us how long each Supreme Court Justice has served
 - This data is presented in an HTML table, so it will take some effort to port into a CSV

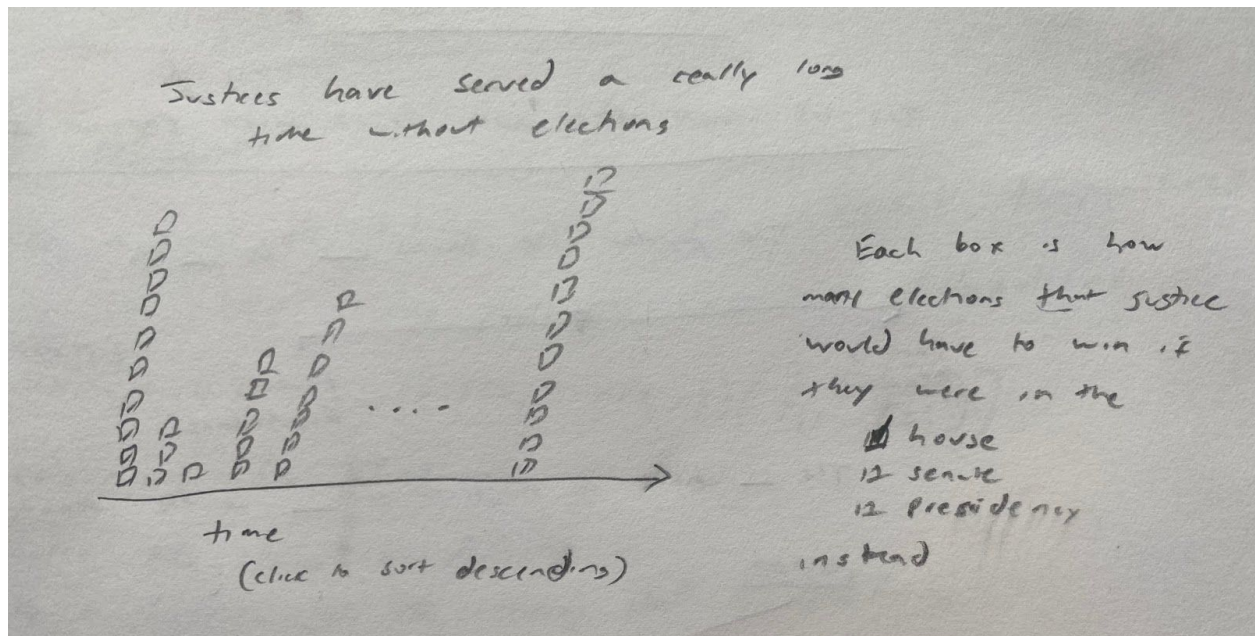
Week 10



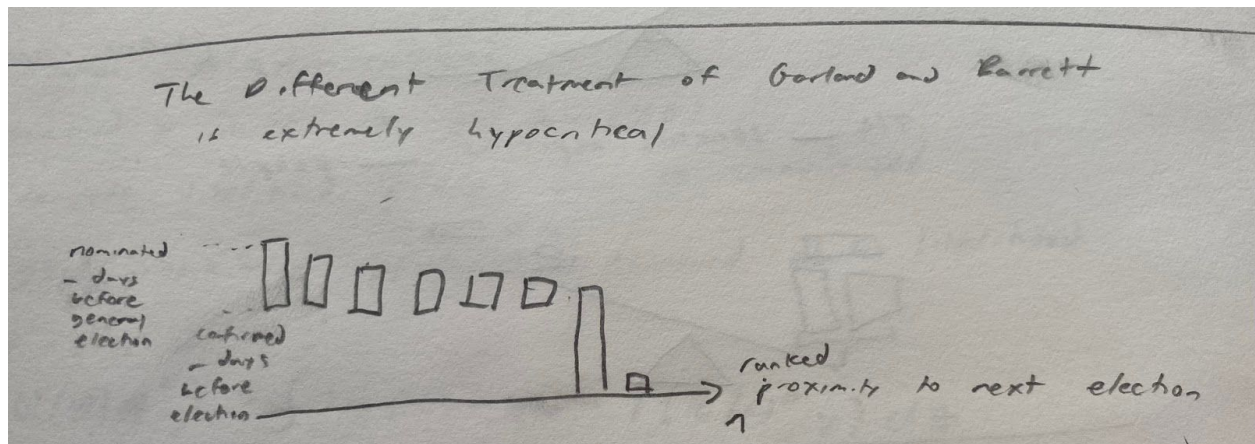
Avi 2



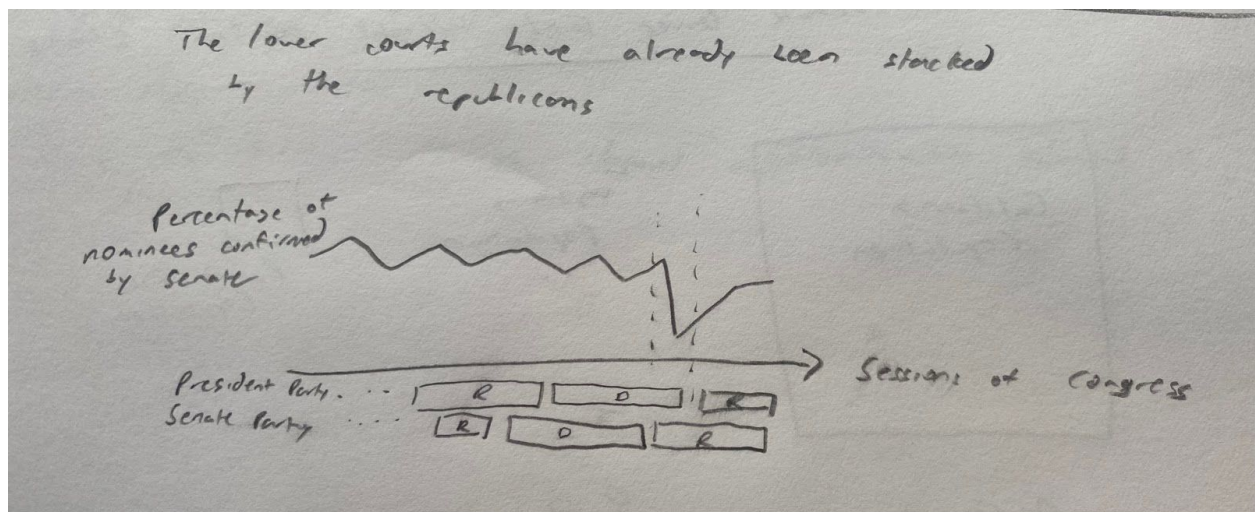
Avi 3



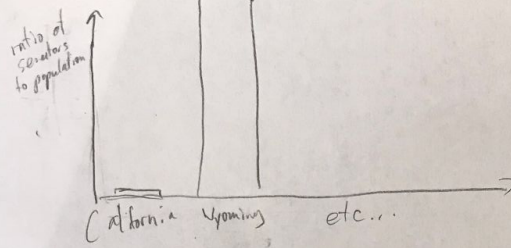
Avi 4



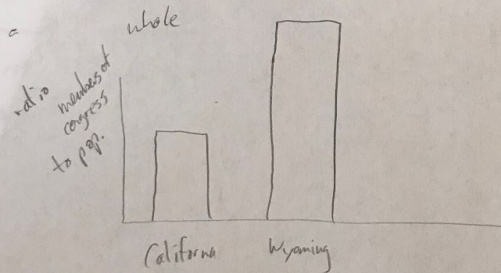
Avi 5



① Because of the Senate, different states have different levels of representation in the Senate



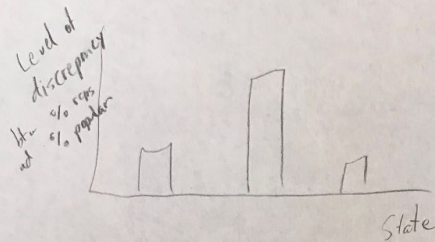
② This distortion is also reflected in Congress as a whole



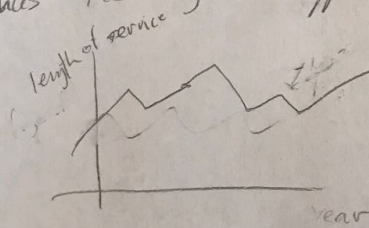
*Note: can combine ① + ② with a select Box.

Senate
House
Congress.

③ Because of gerrymandering, a state's representation does not always reflect its citizen's political beliefs

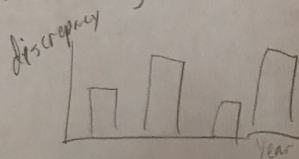


④ Have Supreme court appointments gotten longer? How has the age of appointment changed?



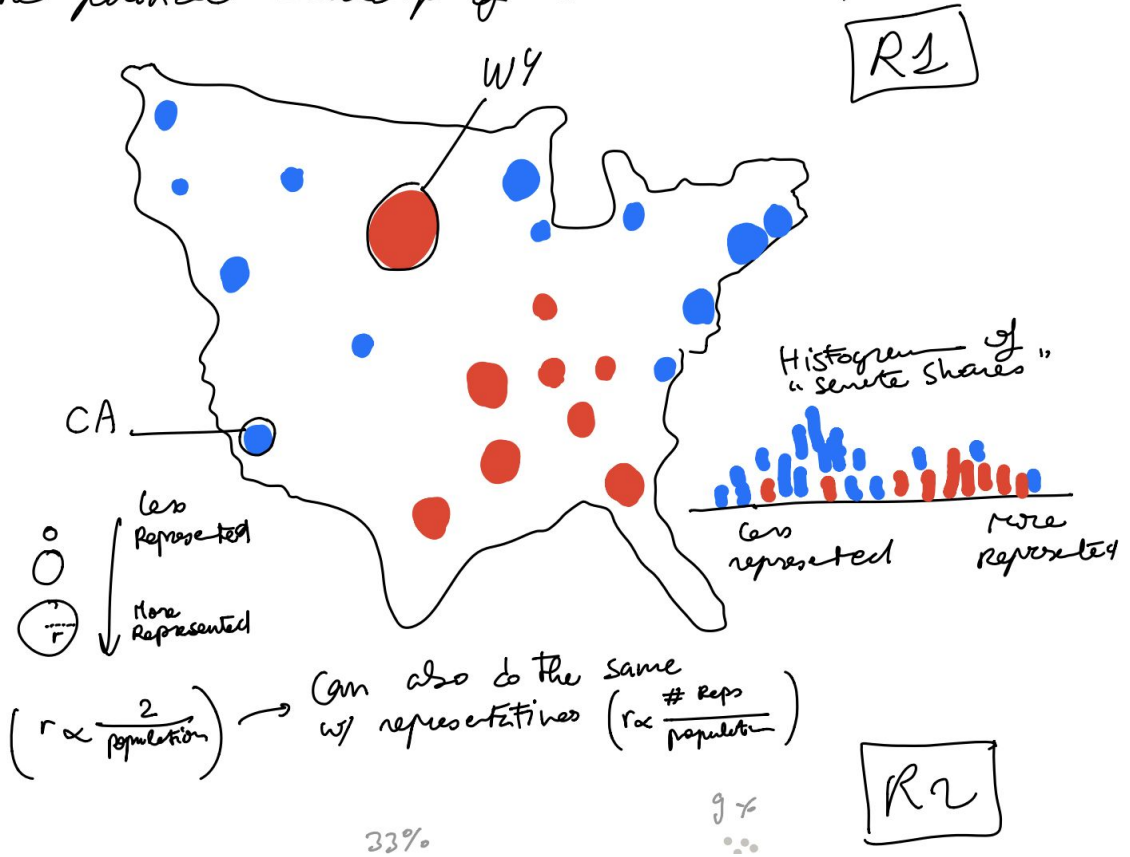
and lack of direct election

⑤ Because of long appointments, the SCOTUS might not reflect the people's beliefs

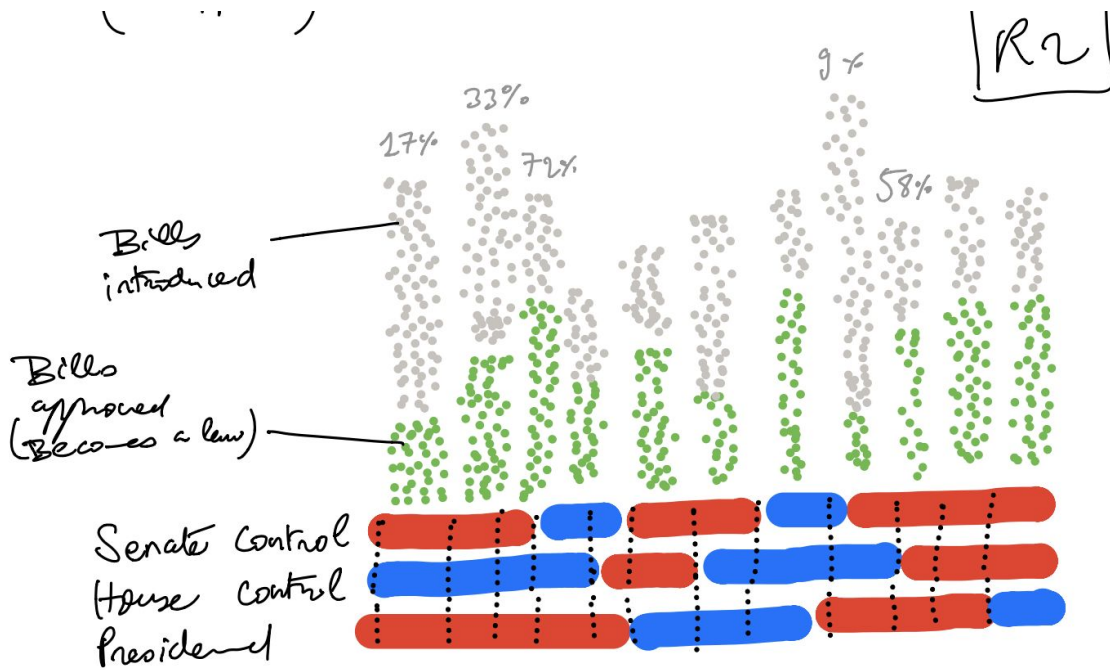


Ralph 1

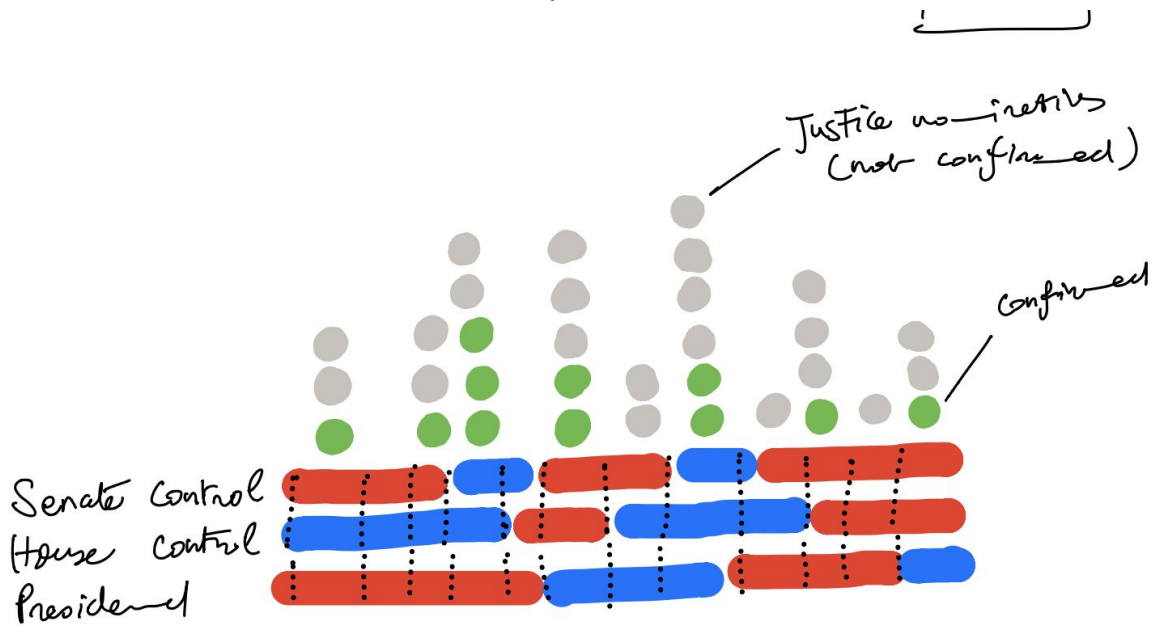
Does the Senate accurately reflect
the political makeup of the United States?



Ralph 2

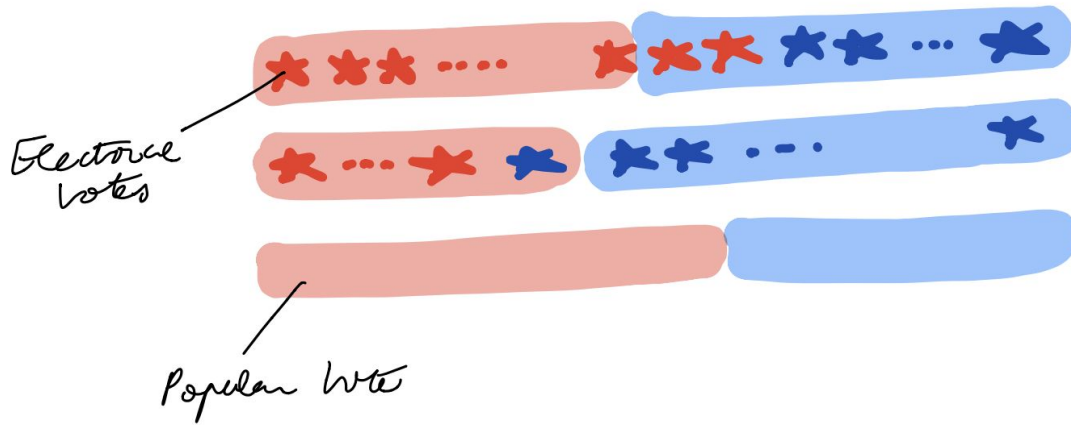


Ralph 3



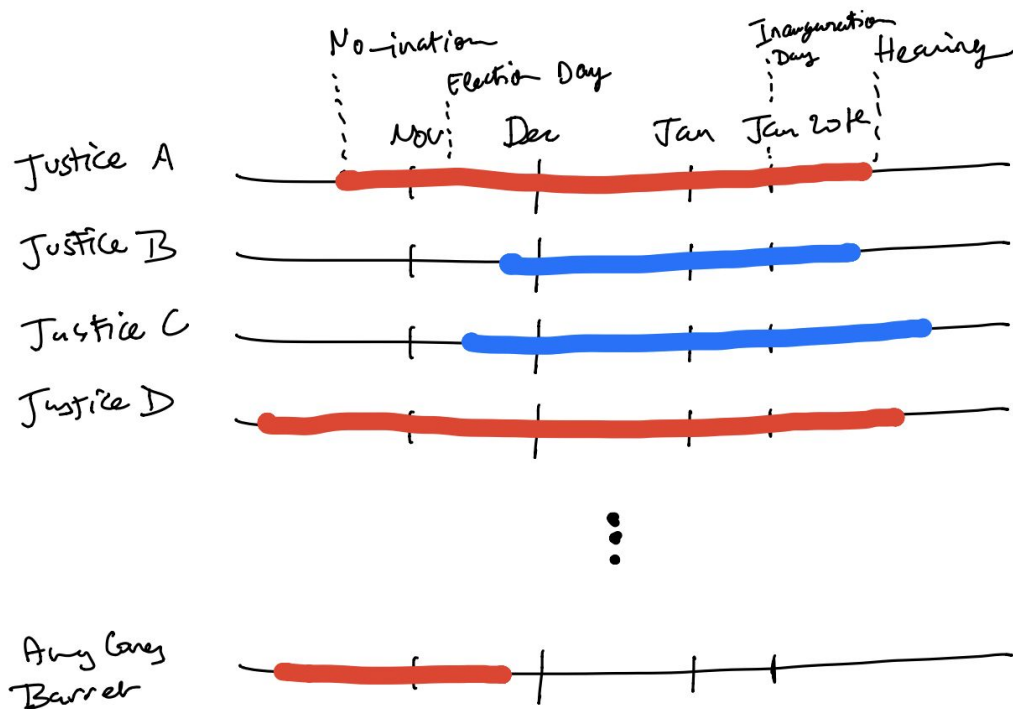
Ralph 4

RG



Ralph 5

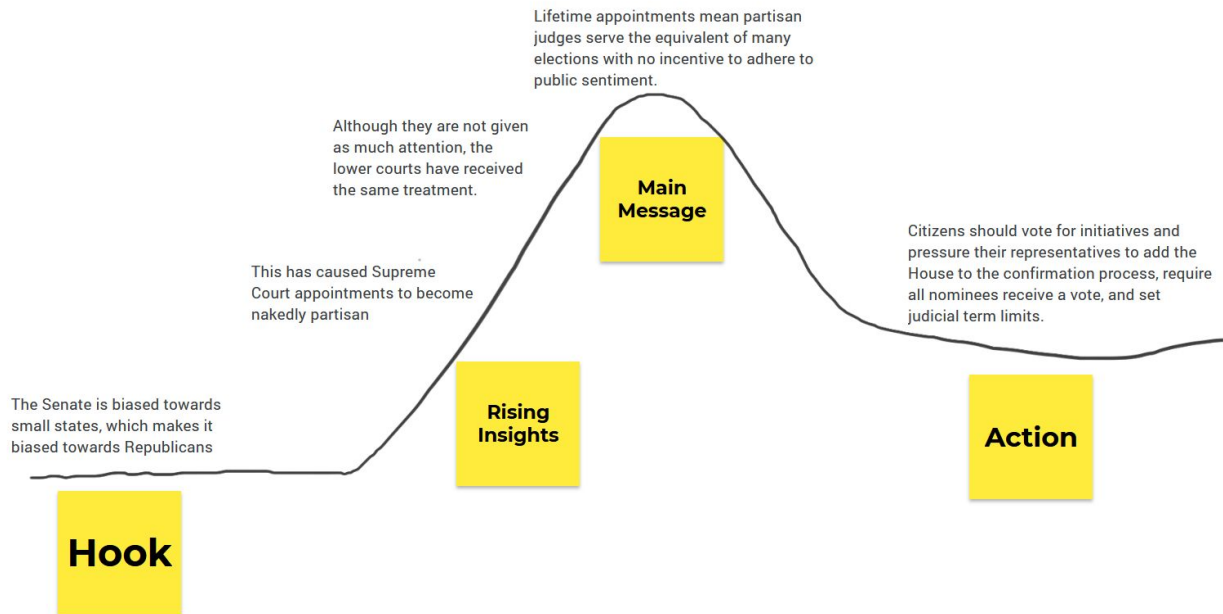
RS



Sketch	Avi Vote	Elliot Vote	Ralph Vote	Final
Senate Breakdown				
Avi 1	X	X	X	X
Avi 2	X (merge with Elliot 2)	X (ditto the merger)		X (add House toggle option)
Elliot 1				
Elliot 2	X	X		
Elliot 3				
Ralph 1		X	X	
Ralph 4				
Supreme Court Appointment Bias				
Avi 4	X (take the sort)	X		
Elliot 5				
Ralph 5	X (horizontal orientation probably better)	X	X	X (add the sort from Avi 4)
Lower Court Appointment Bias				
Avi 5	(All three are about the same with togglable settings)	X	X (merge with ralph's)	Make one and make it togglable to the other two
Ralph 2	X	X	X (merge with avi's)	
Ralph 3	X	X	X (all the same)	
Judicial Terms				
Avi 3	X (merge with	X		X

	Elliot 4)			
Elliot 4	X			

Storyboard:



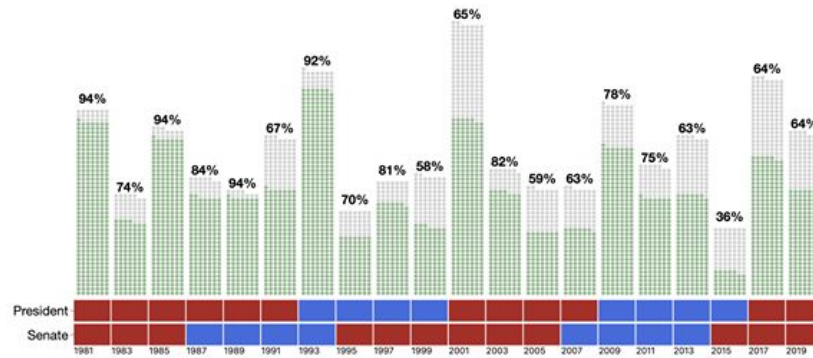
Main Message: the main message of the data story is roughly the same as it was before. We will show that the Senate is biased towards Republican representation. We will show that recent Senates that have been controlled by the Republicans due to the bias have added partisanship to the judicial system, both in the Supreme Court and below it. We will then show how the unlimited term lengths of judges allows them to stay for long periods of time after being partisanly appointed without needing to keep up with changing public opinion. Finally, we will give suggestions on how these problems could be addressed, and encourage the reader to act on them. The visualizations we have shown above are the ones we think best for showing these concerns, however, we will adjust them as necessary once we start building them.

Week 11

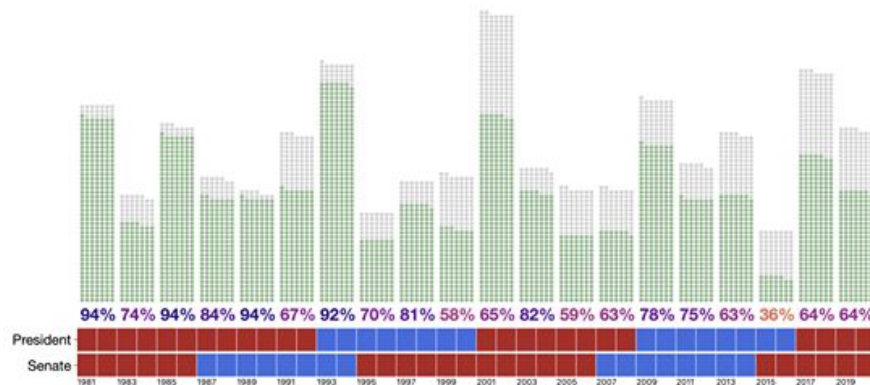
We have a frame for the overall website, where each visualization is given a page, title, and some navigation buttons are provided. The status of each page is as such:

- Page 1a
 - (Implemented by Elliot) So far, the visualization shows representation in the Senate for citizens in different states, i.e. $\text{Senators per person} = 2 \div \text{state population}$
 - The viewer is able to choose the year, as well as the desired y axis. One option is senators per person. The other option is number of senators exceeding allocation by population (this is negative for states that would be allocated more than two senators)
 - Right now, there are several things missing
 - The axes are not properly explained. I need to add units and explain how everything is calculated
 - I need to explain that for the historic data, I am ignoring the issue of slavery and also other historical complications, like Maine being part of Massachusetts.
 - I need to add a color scale. My idea is to use a diverging color scale that reflects the number of senators exceeding allocation by population, with the midpoint of the scale being 0
 - I might also add a tooltip giving state population, and party lean for 2020
 - This visualization corresponds to Elliot sketch 1
- Page 1b
 - (To be implemented by Elliot) Page 1a shows the extent to which smaller states are overrepresented in the Senate. Page 1b will show that this favors the Republican party, as smaller states tend to lean Republican.
 - We will show a scatter plot with party lean on the x-axis and degree of representation on the y-axis
 - We will also estimate the number of Senators the Republican party gains as a result of this distortion
 - This will segway nicely into the next visualization, which shows that the Democrats have to significantly outperform the Republicans in order to gain Senate control
- Page 2
 - (Implemented by Avi). So far, I have a visualization of the senate breakdown by party, with an interactive slider that determines the national partisan lean. There are also transitions so that the reader can track seats as they move from one side to the other.

- I still need to do a population weighted version, which would be the exact same visualization but where each square is sized by the number of people that each seat represents. I'm planning to put this on the right side of the screen, but it will take some time to figure out how to implement all the irregularly shaped boxes.
- I will have a tooltip for each square, so that the user can see which state each box corresponds to, the population of that seat, and the partisan lean of that state.
- I will also add a scale image that tilts to correspond to how much one side is bigger than the other (see the Avi 1 sketch), so that it is immediately obvious which side is bigger. This will also be responsive and will coordinate with the rest of the visualization.
- Page 3:
 - (To be implemented by Ralph)
 - This visualization aims to show the number of justice referrals and confirmations for judges in the Supreme Court and the lower courts throughout the years, as well as the POTUS' party affiliation and the party that controls the Senate. The President is responsible for nominating judges, the Senate is responsible for confirming (or rejecting) the nominations.
 - The point of this visualization is to emphasize (1) the remarkably low confirmation rates when the President and Senate are of different parties, and (2) show the decreasing confirmation rates as the country becomes more and more polarized.
 - I have already implemented the foundations for the visualization. It is composed of a lower 'tiles' part (with the party affiliation/control) and an upper 'dot-bar chart' part (gray dots represent referrals, green dots represent confirmed referrals). I have also added percentages at the bottom of the dot-bar chart for visual redundancy (and to make the percentages more obvious).
 - The screenshot below shows one iteration of the visualization. The percentages lie on top of the bars. I noticed that the fact the percentages don't align with their heights, which could confuse the viewer and introduces a significant lie factor.



- The screenshot below shows a better version of the visualization:



-
- The percentages now lie on the same row and the color scheme makes seeing the pattern quite easily.
- I might place the percentages into boxes and color the boxes instead with the color scheme
- Future directions:
 - Time slider: to specify a time range to display
 - Sort function to sort the years by referrals, confirmations, and fraction approved.
 - Do the same for supreme court
 - Make sure the visualization works for all screen sizes
- Page 4
 - (To be implemented by Ralph)
 - I have not started implementing this one, but it supposed to follow design R5.

- The purpose of this visualization is to show that Amy Coney Barrett was unfairly rushed through the process
- Page 5
 - (To be implemented by Elliot)
 - This final visualization will show the number of elections Supreme Court judges would have had to win to stay on the bench for as long as they did/have.
 - There is a select box saying if the judges were... senators/house reps/president because these positions have different election frequencies
 - This corresponds to Avi sketch 3

Week 12

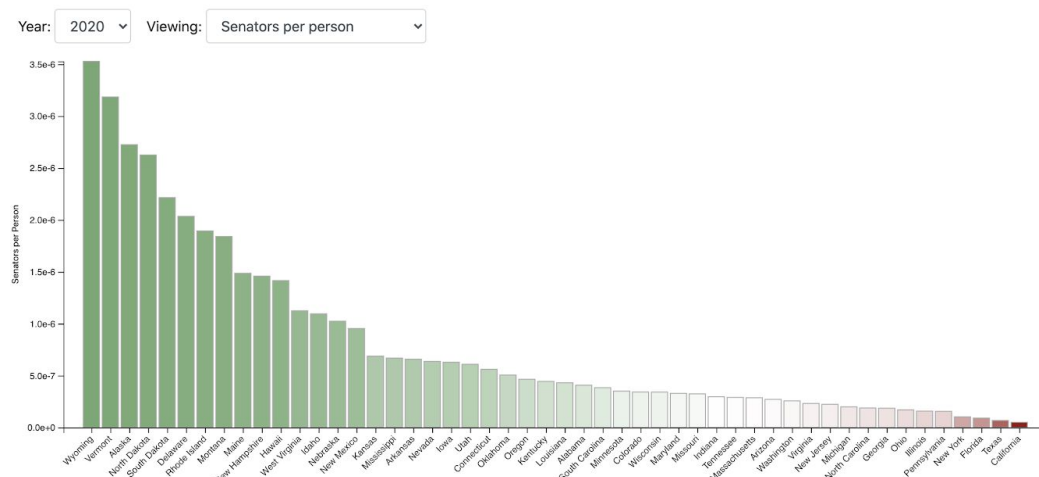
At this point, we have implemented the visualizations, and they are ready for testing with some small details remaining. Shown here are the visualizations before testing, as well as a description of what we have done since last week and what else we think needs to be done.

- Page 1

Screenshot 1:

U.S. citizens are represented unequally in the Senate across different states.

The policy of having two Senators per state regardless of population was part of the "Great Compromise" of the Constitutional Convention. This means that citizens in smaller states are more represented in the Senate than citizens in more populous states. The visualization below shows the results of this distortion across different states and different periods of time.*



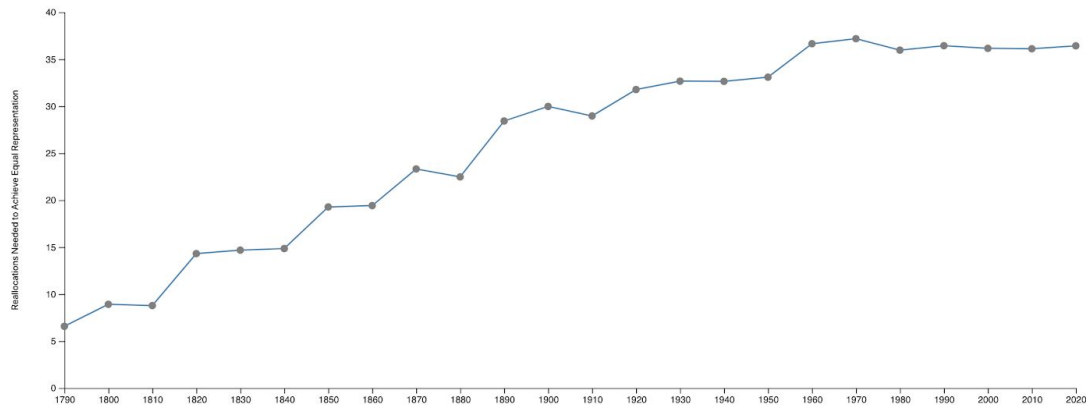
[Back](#)

To achieve equal representation for each citizen, we would need to reallocate **36.42** senators across states. U.S. citizens in **Wyoming** are represented in the Senate **70.43** times more than citizens in **California**.

[Next](#)

Screenshot 2:

*Note that for historical data, we have ignored historical issues of voting rights and are just taking total population into account, including children and members of the population who were denied right to vote. We are also ignoring other more minor historical issues, such as the fact that Massachusetts used to include Maine. These issues aside, this distortion has increased over time, as demonstrated by the graph below:



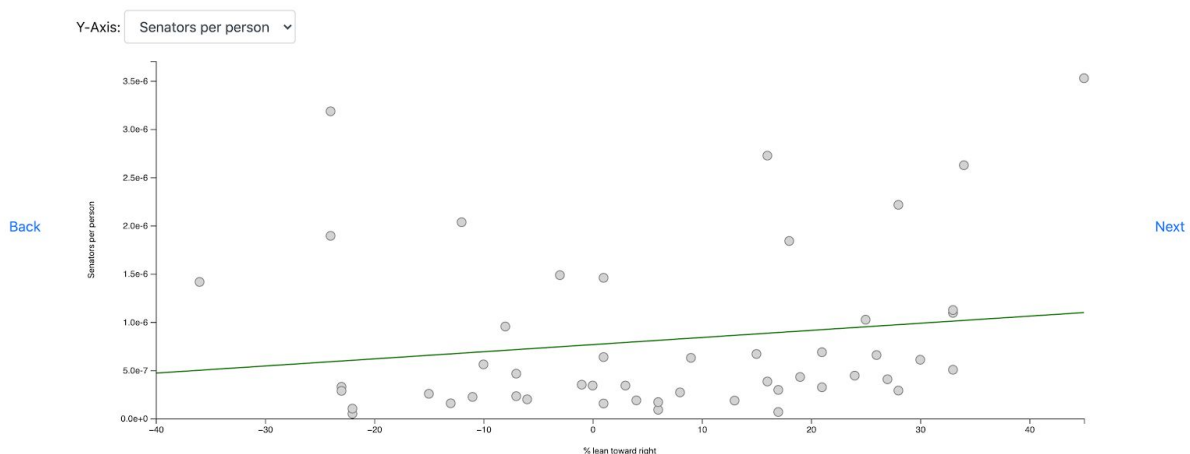
I added a color scheme to reinforce the data presented for the first graph. I should probably add a color scale to explain this. I also added more descriptions. I am curious to see whether our test subject finds them understandable and intuitive. I also added a second visualization showing the increase in distortion over time. I might want to implement a tooltip for the final version. (Also, I might want to make sure the back and next buttons are a bit higher.)

- Page 1b

Screenshot:

This distortion in the Senate favors Republicans, since small states tend to lean right.

In the visualization below, each dot represents a state. The x-axis is partisan lean in favor of the Republican party. For example, if a state has a rightward partisan lean of 5%, then this means that the popularity of the Republican party within that state is 5% higher than the national average. The y-axis is either state population or Senators per person in that state. The solid line is the line of best fit, and is colored according to the sign of its slope.



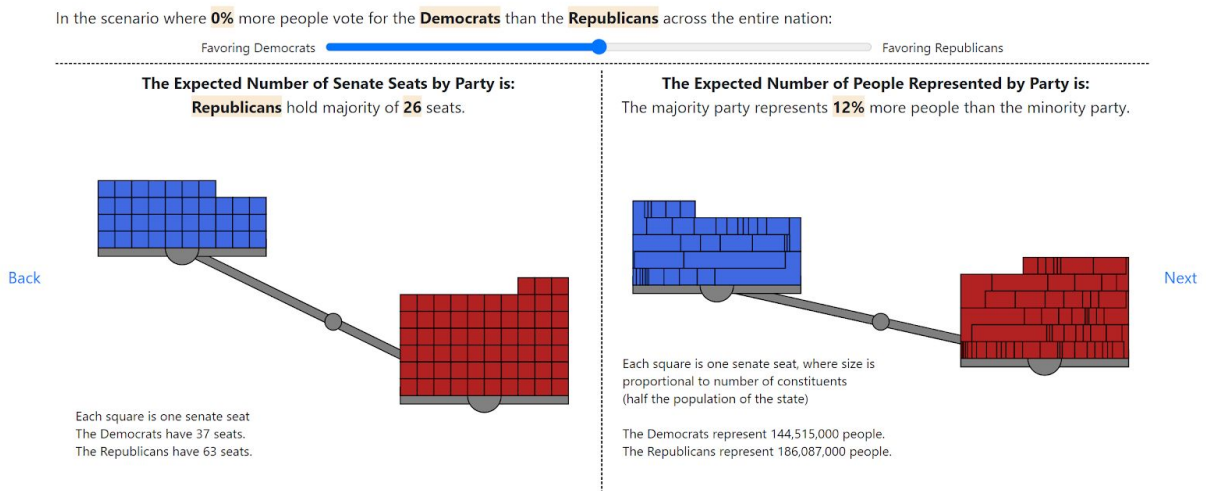
Because of the two Senator policy, left-leaning states are represented by **6.83 fewer** Senators than would be allocated by population, and right-leaning states are represented by **6.6 more** Senators than would be allocated by population. To see the effect this has on representation in the Senate, proceed to the next visualization.

I had not implemented this visualization last week. Originally, we thought that this would be part of visualization 1, but after my initial implementation, we decided this information part of our narrative would best be presented as its own visualization. The visualization is simple but effective, and sets up the user to view Avi's visualization with the two balances.

- Page 2

As of now, the visualization looks like this.

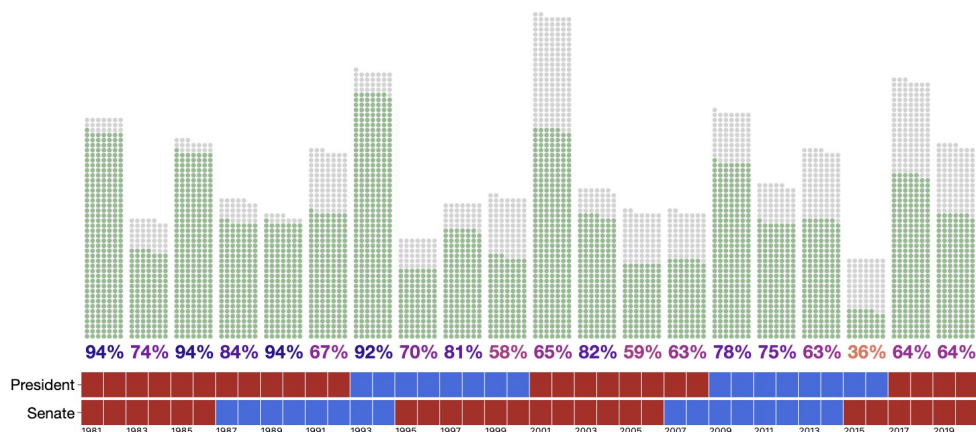
This means that Republicans can win control of the Senate without having to win a majority of votes or represent a majority of citizens.



It is fully functional. You can change the slider to indicate the popular vote lean, and you can see the senate and the population representation tilt between side to side. The boxes representing senate seats move from side to side, the legend moves from side to side, and there is a tooltip for the boxes. This visualization has everything I am thinking of, so now it's just waiting for a test!

- Page 3:

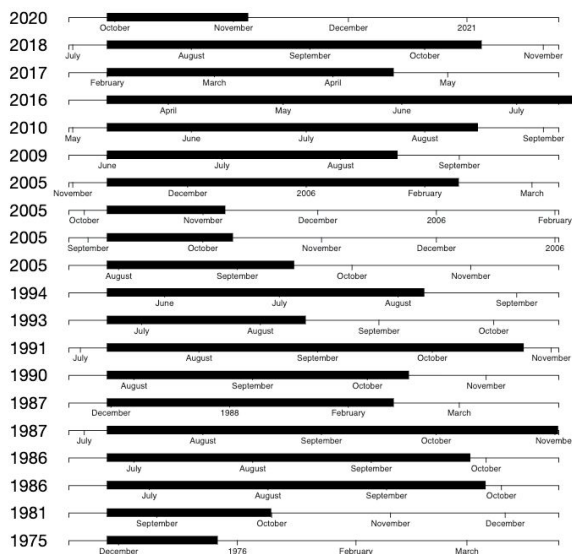
Still the same as last time!



- Page 4:

This week I worked on our fourth visualization, which is supposed to show the nomination to hearing dates for Supreme Court Justice appointments. It took a while to figure out having many time axes, but that worked fine eventually (there are still some bugs to fix). The issue now is mainly aesthetic. I need to:

- Display the names of the judges
- Add more data to color the horizontal bars according to the political affiliation of the President.
- Fix the column widths
- Add a sorting function
- Show the election times (in election years)
- Beautify. Prettify.



This visualization shows the timeline of a Supreme Court Justice's nomination and hearing. The horizontal bars start at the nomination date and end at the date of the hearing.

The topmost bar represents that of Amy Coney Barrett, who was rushed in the senate and approved just before the elections.

- Page 5

(Unimplemented so far.) Because of Visualization 1b, we are already at five visualizations. The basic idea behind this last visualization is to show just how long Supreme Court justices serve because of the lifetime policy. It would also be nice for this last visualization to tie our narrative together. Because of this we are currently discussing the best note to end on--what type of visualization would tie our message together, and show the lasting effects of these appointments. Once we have discussed and put our heads together, we will implement this final visualization.

Week 13

The website is hosted at https://azswartz.github.io/CS171_Final. *Note: the visualizations take a while to load and occasionally require refreshing to start loading.*

The link will stay the same for the final version, but I will turn it off while we make improvements in case we break something.

Patricia Lai tester - Elliot Testing

- Title page should have picture

Vis1

- On first vis, tester is confused by color
 - Not sure what it represents
- Tester does not like font, thinks that the note should be smaller font-size

Vis1b

- Tries to click on dots
- Again, tester thinks important info should be on top and grab attention
 - Most important info shouldn't be on bottom
 - Requires scroll

Vis2

- First reaction—very impressed: “How did you do that?”
- Likes this visualization a lot
- Doesn't notice tooltip at first
 - Suggests moving it closer to the mouse

Vis3

- Too crowded vertically, not enough space

- Elections are not clearly indicated
- No use of color

Vis 4

- Number loads on top of president bar
- Very confused by this one
- Not enough explanation
 - What are the dots
 - What are the green dots
 - What is the percentage
- Percentage colors are confusing

Final Takeaways

- Maybe make it shorter
- Shoot for 3-4 takeaways, or else people will skip

Tester: Helen Huang, Testing by Avi
 huangh@college.harvard.edu

Background and styling on the home page, make it more enticing

Vis 1a

- Looks like something out of a textbook. Make it less textbooky. Filter by years is cool. Lots of context is good for non gov people.
- Having different pages is interesting.
- The second visualization should? change with the first. Tester was wondering.
- Tester generally liked it. Wants the second chart to draw/animate when the user scrolls down.

Vis 1b

- Wants tooltips for the dots. Slope color is good.
- Extra context is good. But make it easier to understand. Right now the user just skips over the text descriptions.
- Either cut down on the text or just highlight important things better.

Vis 2

- User did not read the title. Did not read the text in detail.
- Tester really liked the visualization. Looks well laid out. Likes the tool tip, but found it accidentally.
- Try having a transparent popup box that describes what the visualization can do before the user gets on it. Or have a box that says "hover here for information"

- There is a bit of a clipping issue where the boxes on the right visualization were getting clipped a bit on the right and left edge of the canvas.

Vis 3

- Color here would be helpful. Looking for a hover with names of the nominees.

Vis 4

- Needs robustness on screen size.
- Visualization looks nice, but it needs a text explanation.
- Put the presidents names in the visualization.

Takeaway Slide

- Clear.
- Cut down on the text. Tester would skip it without a scroll feature, transitions, or some images.

Final comments

- Titles are helpful. Wants a better font for it.
- Needs more interactivity. Cut down on the text. There's enough content, but make it easier for the user to read what is already there.
- Visualizations look nice. Need some things to look more intuitive, need better CSS choices.

Tester: Gabriele Oliaro. Tested by Ralph

- Likes the general page layout
- Tester is international, need to make story more obvious

Vis1

- Jargon "great compromise"
- Aesthetics okay but could do better, graphs too wide
- Color scheme not obvious (green-red)
- Text does not grab attention

Vis 1b

- No tooltip, basically (what states are what dots?)
- No use of color
- Text is not exciting

Vis 2

- Super impressed
- Tooltip too small, not noticeable, too long
- Because tester not familiar with the story, didn't know what the slider meant

Vis 3

- Nice but a bit crowded

- Needs more text and explanations
- Also a legend (what are the percentages)

Vis 4

- Takes too long to figure out what's going on
- No use of color, no legends no tooltips

Final takeaways

- Make this story more obvious

Improvements to be made based on testing

- Vis 1a (Elliot)
 - Need to add color scale - explain what color means
 - Explain the second vis more clearly
 - For the textual information, create a hierarchy of importance
- Vis 1b (Elliot)
 - Make a tooltip for the dots, so you can see which state is which
 - Once again - less text and create a hierarchy of importance
 - Make important information prominent and attention-grabbing
- Vis 2 (Avi)
 - I will fix the small robustness issues where the boxes will get clipped at the edge of the visualization.
 - I need to draw better attention to the tooltip feature. The tooltip text should say something like "hover over a cell for more information" when inactive. Perhaps I should also move the text into a more central location, but I'm not sure where there is room for it
 - I might need to explain the slider a bit better, but I'm not sure what's the best way to do this.
- Vis 3 (Ralph):
 - I will need to fix screen size robustness issues
 - Add a tooltip
 - Add a legend
 - Add explanation text
 - Indicate election years
- Vis 4 (Ralph):
 - Will need to add color (blue for democrat, red for republican president)
 - Add a tooltip
 - Fix the time axis bugs
 - Turn this into a visualization that tells a story (aggrandize relevant timelines, make other ones smaller)
 - Add a sort feature

- Vis 5
 - We had not yet implemented this visualization on judicial term lengths. Based on the testing, it seems that we don't need any more content, so we will drop this one and focus on improving what we have.
- Conclusion Slide (Avi)
 - I will cut the text down to the essentials and see if adding transitions would make it easier for the reader to follow.
- Overall webpage (everyone)
 - Generally, we all need to make the webpage more intuitive and easier to read. There seems to be enough content, now we need to focus on making it easier to read the content that is already there.
 - We also need to make the CSS choices more aesthetically pleasing, especially the fonts.
 - The title page needs some content.

Week 14

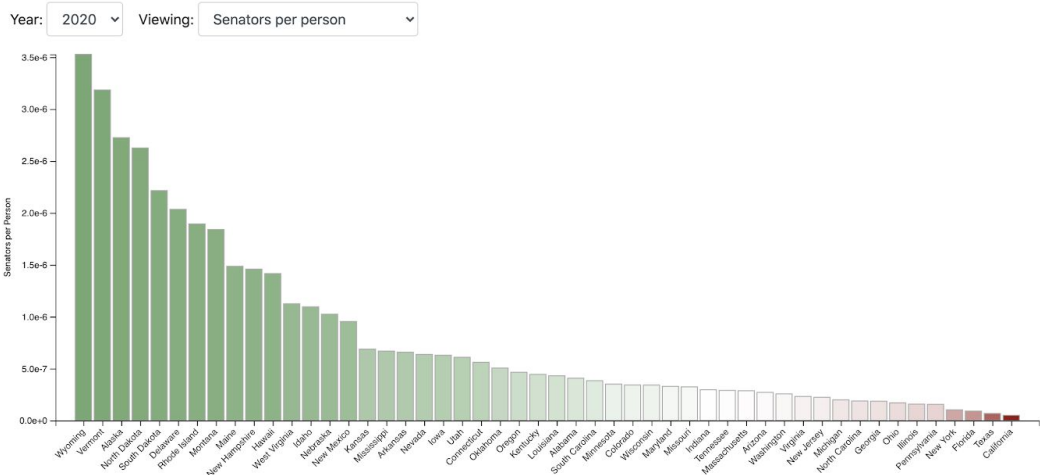
Here is what we improved on our code based on the testing, as well as a before/after comparison.

- Vis 1a (Elliot)
 - Added color scale to explain what color means
 - Defined distortion but made it collapsable
 - Explained the second vis more clearly; made details collapsable
 - Added tooltip to both visualizations
 - Added titles to the visualizations
 - For the textual information, created a hierarchy of importance

At testing screenshot 1:

U.S. citizens are represented unequally in the Senate across different states.

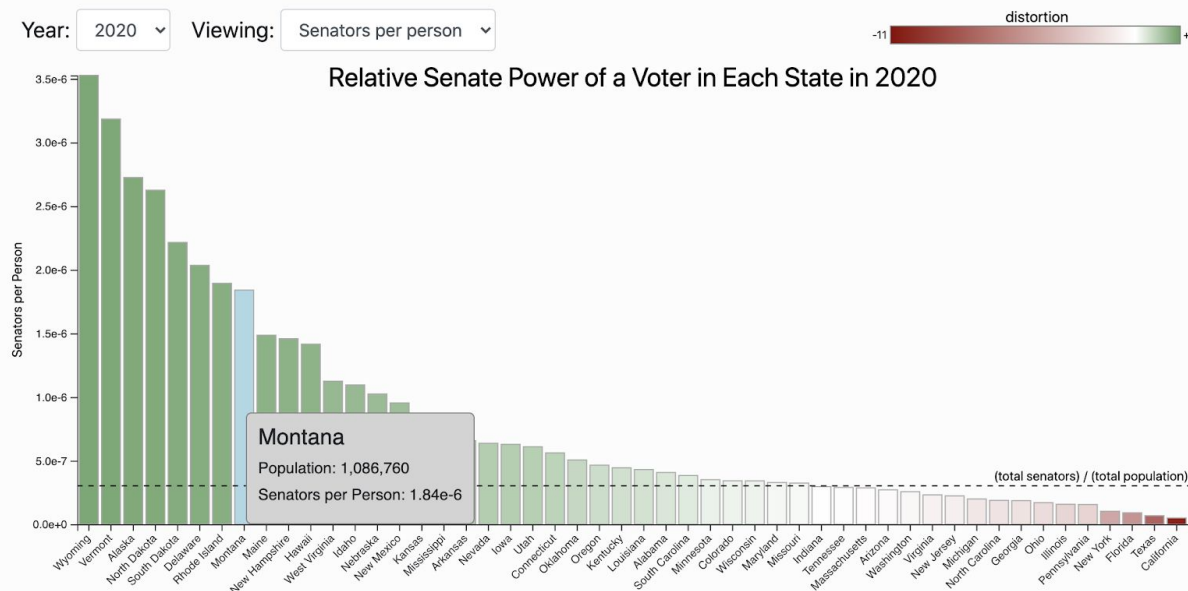
The policy of having two Senators per state regardless of population was part of the "Great Compromise" of the Constitutional Convention. This means that citizens in smaller states are more represented in the Senate than citizens in more populous states. The visualization below shows the results of this distortion across different states and different periods of time.*



[Back](#) To achieve equal representation for each citizen, we would need to reallocate **36.42** senators across states. [Next](#)
U.S. citizens in **Wyoming** are represented in the Senate **70.43** times more than citizens in **California**.

After testing screenshot 1:

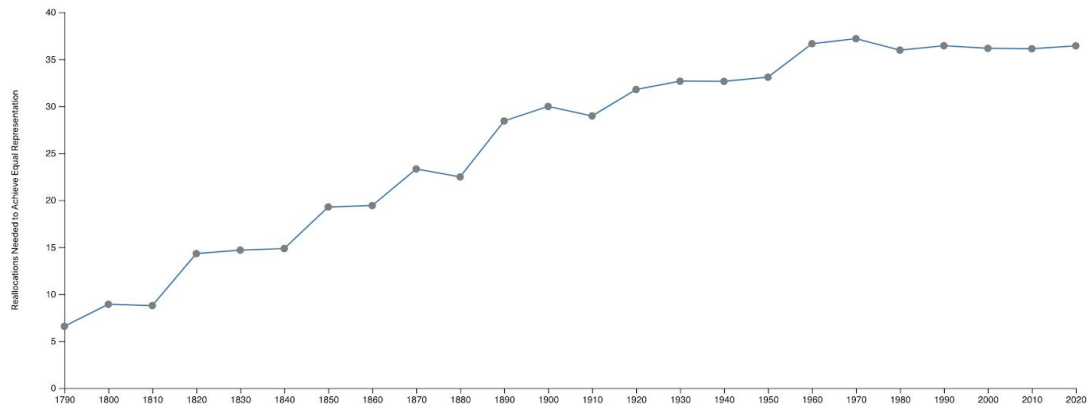
Note here we define **distortion** as a measure of how much each state benefits from the two senator flat rate as compared to giving each state power proportional to its population. [Click for details](#)



- To achieve zero distortion, we would need to reallocate **36.42** senators across states.
- U.S. citizens in **Wyoming** are represented in the Senate **70.43** times more than citizens in **California**.

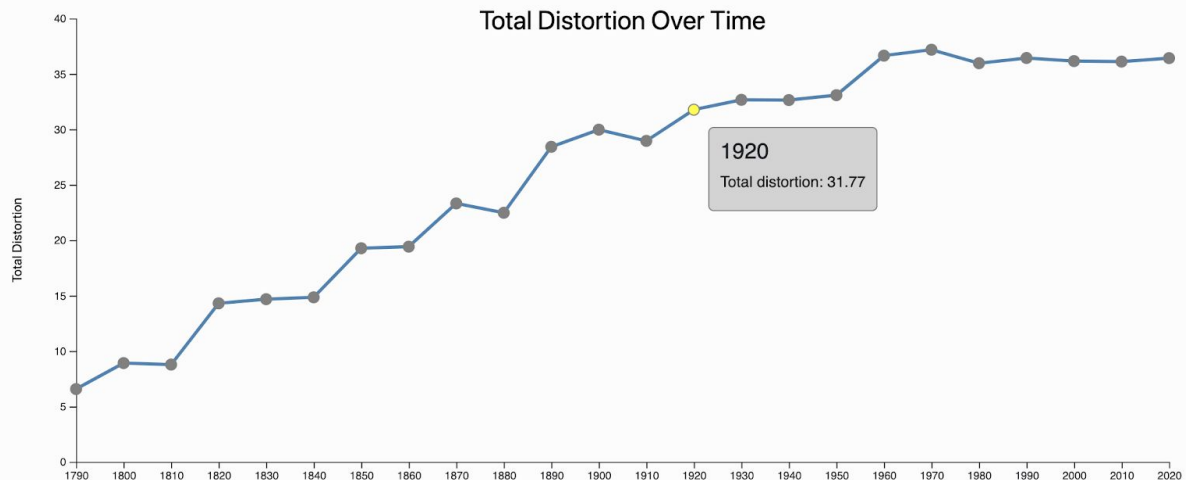
At testing screenshot 2:

*Note that for historical data, we have ignored historical issues of voting rights and are just taking total population into account, including children and members of the population who were denied right to vote. We are also ignoring other more minor historical issues, such as the fact that Massachusetts used to include Maine. These issues aside, this distortion has increased over time, as demonstrated by the graph below:



After testing screenshot 2:

As demonstrated by the graph below, total distortion has **increased** over time. [Click for details](#)



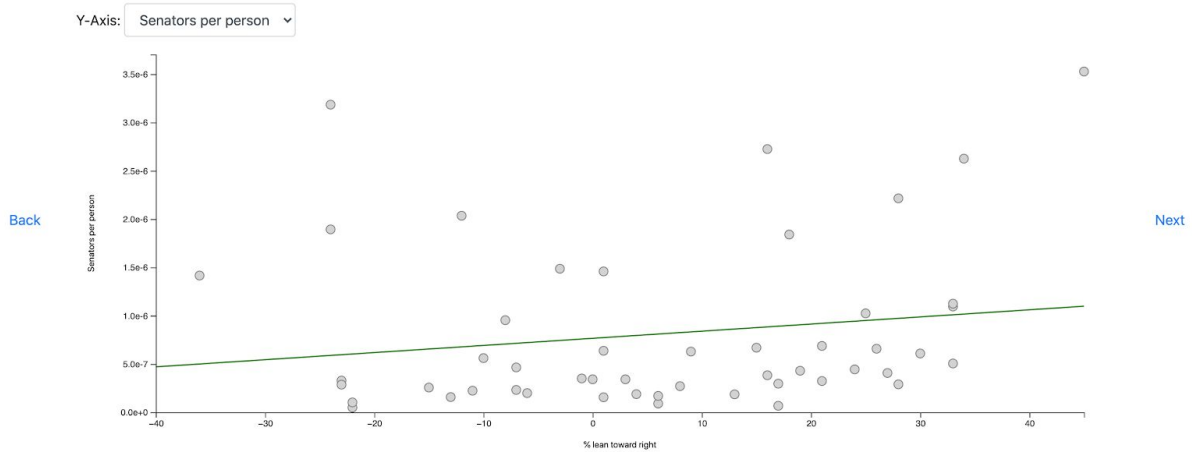
Note that for all data, we have ignored issues of voting rights and are simply taking into account total population, including children, women, slaves, and other members of the population who are/were denied the right to vote. We are also ignoring other more minor historical issues, such as the fact that Massachusetts used to include Maine.

- Vis 1b (Elliot)
 - Made tooltip for the dots, so you can see which state is which
 - Once again, reduced text and created a hierarchy of importance
 - Once again, utilized collapsible information to reduce clutter
 - Made important information prominent and attention-grabbing
 - Added color to reflect partisan lean

At testing:

This distortion in the Senate favors Republicans, since small states tend to lean right.

In the visualization below, each dot represents a state. The x-axis is partisan lean in favor of the Republican party. For example, if a state has a rightward partisan lean of 5%, then this means that the popularity of the Republican party within that state is 5% higher than the national average. The y-axis is either state population or Senators per person in that state. The solid line is the line of best fit, and is colored according to the sign of its slope.

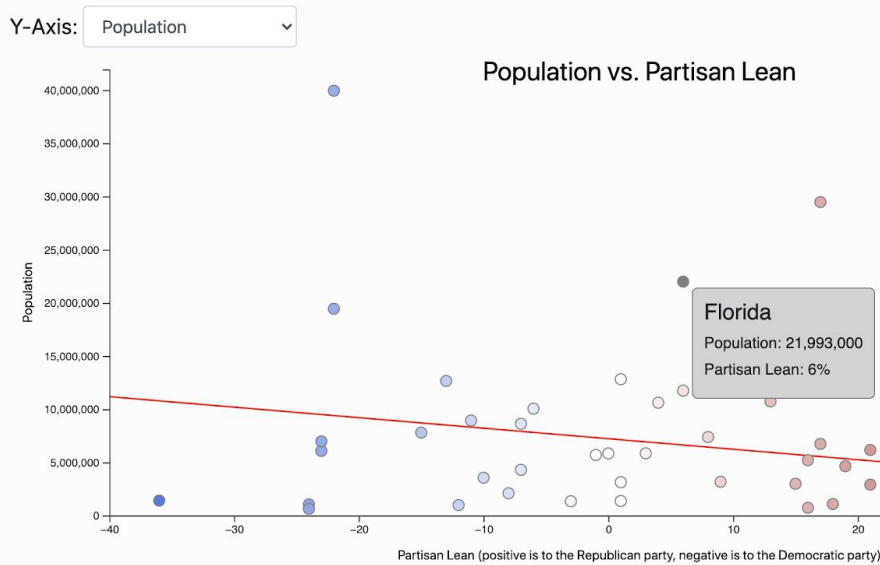


Because of the two Senator policy, left-leaning states are represented by **6.83 fewer** Senators than would be allocated by population, and right-leaning states are represented by **6.6 more** Senators than would be allocated by population. To see the effect this has on representation in the Senate, proceed to the next visualization.

After testing:

Each dot represents a state, and the solid line is the line of best fit. All data is from 2020.

[Click to explain partisan lean](#)

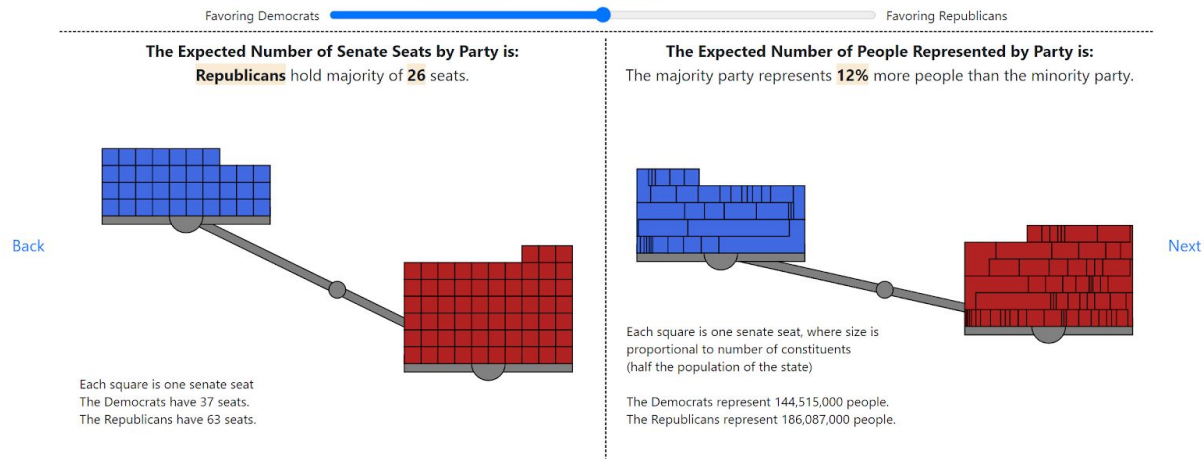


Because small states have greater Senate power and are more Republican leaning, this gives the Republicans an advantage in the Senate.

- Vis 2 (Avi)
 - Clipping fixed. Tooltip is easier to see and is more concise. Slider is explained better.
 - Before testing:

This means that Republicans can win control of the Senate without having to win a majority of votes or represent a majority of citizens.

In the scenario where **0%** more people vote for the **Democrats** than the **Republicans** across the entire nation:

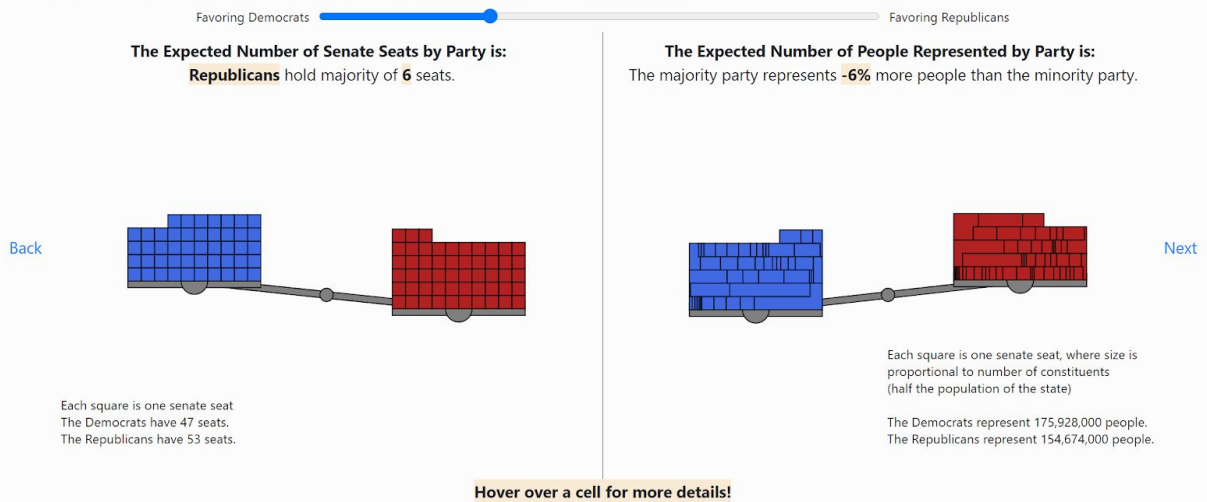


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○ After testing:

This means that Republicans can win control of the Senate without having to win a majority of votes or represent a majority of citizens.

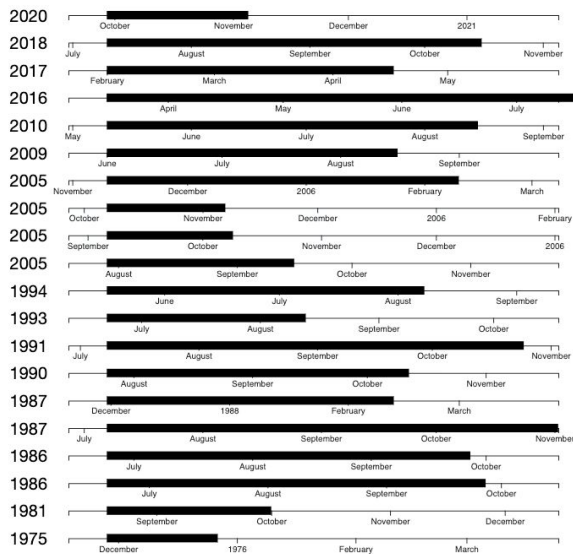
Suppose that nation wide, **4%** more people vote for the **Democrats** than the **Republicans**:



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- Vis 3 (Ralph):

At testing:



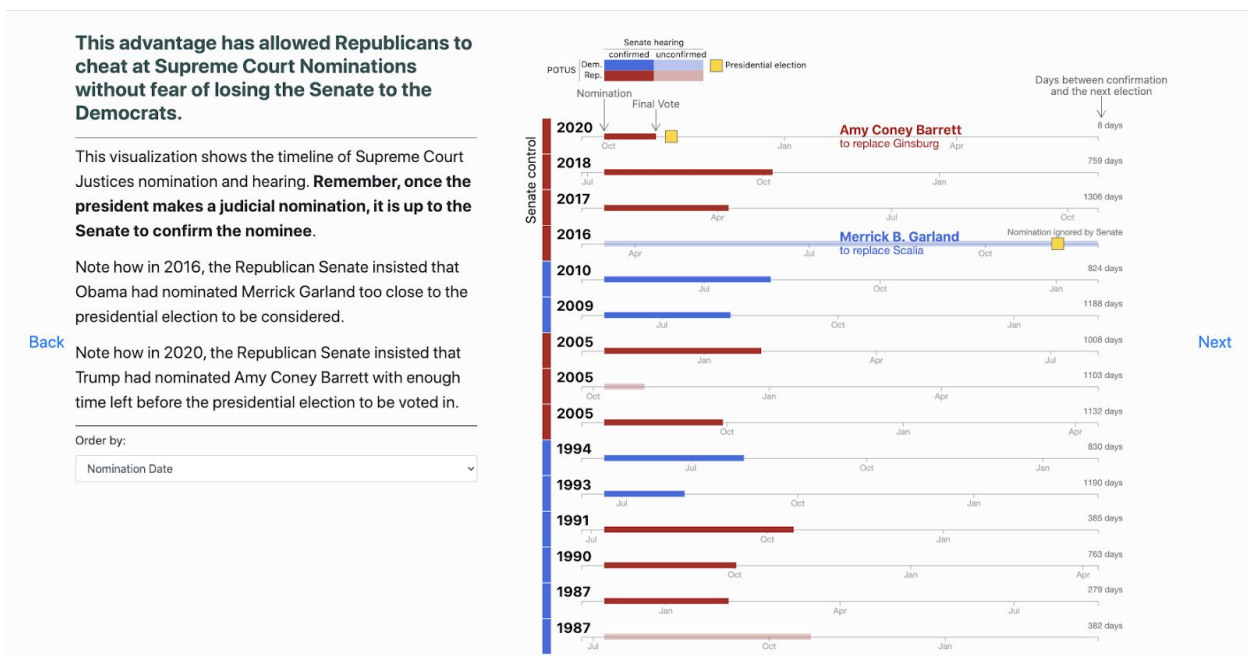
This visualization shows the timeline of a Supreme Court Justice's nomination and hearing. The horizontal bars start at the nomination date and end at the date of the hearing.

The topmost bar represents that of Amy Coney Barrett, who was rushed in the senate and approved just before the elections.

What I said I would like to do:

- I will need to fix screen size robustness issues
- Add a tooltip
- Add a legend
- Add explanation text
- Indicate election years

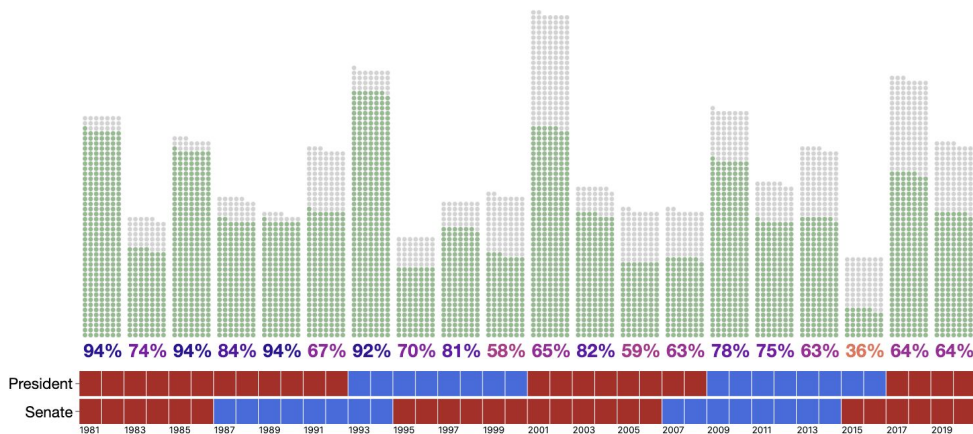
At submission:



As you can see, things got a lot better! Here's in short what I did:

- I added color to represent the senate majority party and the President's party, and using opacity I encoded the results of that nomination (confirmed unconfirmed)
- I added a tooltip (name of nominee and whom they are supposed to replace)
- I added text (Avi helped)
- I added sorting functionality (according to time of nomination, and the differences in days between nomination and hearing, and nomination and the closest upcoming elections)
- I added a legend
- I fixed the other time axis bugs and the screen size robustness issues
- Vis 4 (Ralph):

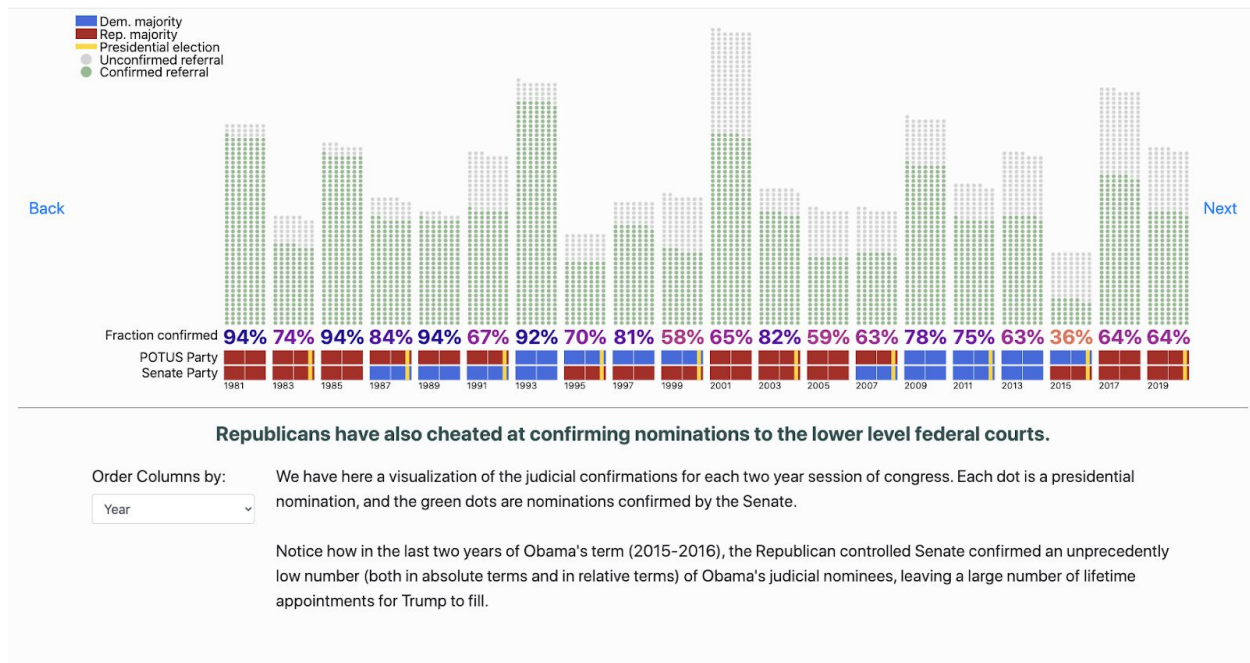
At testing:



What I said I will do;

- Will need to add color (blue for democrat, red for republican president)
- Add a tooltip
- Fix the time axis bugs
- Turn this into a visualization that tells a story (aggrandize relevant timelines, make other ones smaller)
- Add a sort feature

At submission:



What I did:

- I added a legend to explain things
- I added a sort functionality (to sort according to year, number of referrals, number of confirmations, and the fraction of referrals confirmed)
- I added labels to explain what the percentages are
- I added gold colored bars to indicate election years
- Avi and I (Avi primarily) added text and explanations
- I fixed the screen size robustness issues
- Vis 5
 - This visualization has been removed.
- Conclusion Slide (Avi)
 - The text is significantly cut down to make it easier to read.
 - Page before:

Final Takeaways

We thought that there are some problems with the way the US government is currently set up, and we have some proposals to help fix it. While you may disagree with our proposed solutions, we hope that after viewing the data, you agree that there is a problem. Please keep these in mind the next time you discuss politics and especially when you vote!

- The Senate favors small states. So much so that this puts the Democratic party and its concentration of supporters in large states at a massive disadvantage.
- However, this was intentional. That's why Congress is split between the House of Representatives and the Senate. Large states have the advantage in the House, small states have the advantage in the Senate. All legislation must pass both chambers as a compromise.
- *So why does the House not get a say in confirming judicial (and other) appointments? Confirmations should pass both chambers just like legislation.*
- Judge Garland was deemed nominated too close to the election to be voted on. Judge Barrett was deemed nominated early enough to be confirmed. This is inconsistent.
- *There needs to be an established legal definition of how close to the election a nominee can be voted on that can be consistently applied.*
- The Senate is supposed to reject a nominee if they find the nominee unsuitable. Refusing to even consider the nominee is extremely unusual.
- *If the Senate is unwilling to do its constitutional role of confirming or denying nominees within a reasonable time span, the nominee should be confirmed automatically to incentivize the Senate to act.*
- In President Obama's last term, the Republican controlled Senate confirmed an unprecedentedly small number of nominees, leaving many judicial positions with life time terms open for President Trump to fill.
- *There needs to be some way to better incentivize cross party cooperation. That is a problem all across the country though, so we don't have a quick suggestion here.*

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○ Page after:

Final Takeaways

Lessons from the visualizations to keep in mind when you talk politics or vote!

- The Senate favors small states by design. The House favors large states by design. Legislation must pass both chambers as a compromise. ***So why does the House not get a say in confirming judicial (and other) appointments?***
- ***There needs to be a consistent legal definition of how close to the election is too close to consider a nominee.***
- The Senate is supposed to reject a nominee if they find the nominee unsuitable. ***If the Senate is unwilling to do its constitutional role of voting on a nominee within a reasonable time span, the nominee should be confirmed automatically to incentivize the Senate to act.***
- If the Presidency and the Senate are held by opposite parties, they should find compromise candidates instead of leaving the spots open. ***Vote for representatives that are willing to compromise!***

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- Title Page and others

- We made the styles look a bit nicer, cut the text down, and made the visualizations cleaner. We also added a picture to the first page.
- We created a data source page.
- Title page before:

How the US Senate and Judiciary System is Broken

Avi Swartz, Elliot Parlin, Ralph Estantoulieh

[Start Here](#)

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- Title page after:

How the US Senate and Judiciary System is Broken

Avi Swartz, Elliot Parlin, Ralph Estantoulieh



[Start Here](#)

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- We also added a data source page

Data Sources

- [Front Page](#)
 - Image Source: [Wikimedia Commons](#).
- [Page 1](#)
 - State population data dating back to 1790 collected from the [Iowa Data Center](#) on November 9, 2020.
- [Page 2](#)
 - State populations collected from the [World Population Review](#) on November 5, 2020.
 - State partisan lean data collected from [538's data repository](#) on November 5, 2020. We used the 2020 values from the file.
- [Page 3](#)
 - State partisan lean data as above.
 - State populations collected from the [World Population Review](#).
- [Page 4](#)
 - Supreme Court Nomination Data from [Senate.gov](#). Data collected November 7, 2020.
- [Page 5](#)
 - Nominations taken from the [Congress.gov](#) search tool on November 5, 2020.
 - Search an empty string. Then filter on *Nominations*, *Senate Committee: Judiciary* and *Referred to Committee* for all nominations made or *Confirmed by Senate* for confirmed nominations.
 - Go to the filters on *Congress* to determine how many nominations or confirmations occurred in each session.

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The End

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Final Website: https://azswartz.github.io/CS171_Final/