

Team Dragon: Fantasy Senate Project

Goal:

To analyse the interconnectedness of sponsors of bills in the Senate and determine who the most 'important' players are, using a criteria based on the number of bills they sponsor, number of co-sponsors on their bills, the number of other 'important' sponsors that they work with and the legislative success of each of their bills. We may also look at other factors, such as campaign finance, election results and perhaps the content of the bills (depending on if we can get text files of the bills from our data source).

We hope to develop this into a weekly power ranking of Senators and allocate points based off of legislative activity. This could potentially be the basis of a 'Fantasy Senate' game, based off of Fantasy Football.

In addition, though our initial attempt will be based on the Senate, we may expand to the House of Representatives. We selected the Senate as it has only 100 members and the members are distributed equally throughout the United States.

Furthermore, we could expand our analysis on particular factors that increase the likelihood of a bill being introduced, voted on, passed and becoming law. For example, we hypothesize that bills related to the Postal Service, are far more likely to pass than bills related to Internal Revenue Code). This probability could also be tied to specific legislators, to calculate the odds of success with different pairings of bill topics and sponsors. For example, how likely is a bill on Energy to pass if it is proposed by Bernie Sanders? What if it is proposed by Chuck Grassley?

Finally, there is plenty of data on campaign and PAC contributions available online, which we could use to determine a rating for each Senator to see which one gives you the most 'bang for your buck' if you were to donate to their campaign.

Data source:

We will get our data from **GovTrack.us** (<https://www.govtrack.us/developers>), a website that allows 'ordinary citizens find and track bills in the U.S. Congress and understand their representatives' legislative record. We will pull data regarding bills, sponsors and co-sponsors. This is easily accessible through their public API.

In addition, we can tie the actions of legislators to their campaign donations through the use of data from the Sunlight Foundation (<http://sunlightfoundation.com/api/>) This API contains information on public campaign donation records from the Federal Elections Commission

New technologies:

- **Django:** We hope to present our data through a webapp, such that it can be easily accessible to voters and reporters. Django will serve as our web framework such that our data analysis is actually usable by a less tech-savvy consumer.
- **Network centrality algorithm (degree centrality):** This is “central” to our plan to analyse and quantify the inter-connectedness of Senators sponsoring each other’s bills and identify who the leaders and followers are. We plan to present graphs of our analysis using the NetworkX package.
- **JavaScript/D3:** We hope to use this to build our web page that will be the interface for the consumers of our Fantasy Senate product. We plan to use the D3 library such that the results of our graph can be presented interactively.
- Other technologies we’re considering will most likely be algorithms that may expand on network centrality to take into account campaign finance statistics, some way of forecasting leadership scores, or some way to quantify legislative ‘effort’ that can be used to calculate the ‘Bang for your Buck’ rating.

Timeline:

1. Gather data (if data is being gathered over a period of time, write a script to automate this)
2. Format and store data in a usable way so we can run the degree centrality analysis on it
3. Implement analysis
4. If forecasting, come up with a forecasting method at least three weeks before project is due so we can check that the forecasts aren’t wildly different from the actual rankings
5. Build webpage interface
6. Connect webpage to data using Django