Donations for Votes

TCSS 445 A Summer

Algorithm Pseudocode for Donations for Votes to find connections between campaign donations and floor votes. This will be mostly high level pseudocode, and as the database takes shape we can turn it into low-level pseudocode and eventually Java and SQL language.

Keyword Table Design

Using a manually created list of politically useless words (e.g. “the”, “and”, “person”, “bill” etc.), compile from each bill’s topic/description a list of keywords [whitespace delimited string stripped of punctuation and lowercased] that don’t intersect with the politically useless words and put every bill : keyword combination into a new table—this is the keywords table. Time-permitting, we could implement smart string searching to better determine whether to include a particular bill : keyword pair.

Politician Voting Patterns

For every keyword, the list of bills it is paired with in the keywords table will be considered bills that pertain to this issue, or keyword (e.g., every bill with the word “abortion” in it is considered a bill about “abortion”). We will now need to compare all of the votes for each bill that pertain to the keyword. We can now create a matrix of politicians by bills pertaining to each keyword (dual matrices for house and senate to be exact). If we simplify the matrix to an 0-1 matrix (where absent, excused, or other odd statuses can be considered a “nay” vote), we can perform analysis using Boolean matrix algebra to determine patterns in the voting. The main result of this analysis will be to determine which politicians consistently vote in the same patterns as each other on the same bills—in general, two distinct patterns should emerge from any keyword that is politically divisive. From this, for each keyword we can create a few (usually two) pattern categories, which are lists of politicians who vote similarly on this issue a certain set threshold of the time (if we can establish beyond 75% similarity, we have a partisan pattern). Politicians who do not fit nicely into a category will be put into a special maverick category.

Donor-Politician-Keyword Connection

Now we can connect the donors. For each donor and each keyword, we can check if the donor gave much more to politicians in a particular category than another. If there is a clear tendency, then this donor can be marked as being in similar views as the category they gave a clear majority to. Thus, donations for votes.