

SchoolNova Computer Science 202
Homework 27
Due 5/8/2021 on Google Classroom

In class, we started creating a simple (dynamic) virtual world, in which there are only two types of people (for now): voters and politicians. There is also no physical structure. There are only basic “institutions” (rules of the game) that govern voters’ behavior, politicians’ behavior, and how the electoral outcomes are determined.

Task 1

Finish `.choose_policy()` method for the candidate class. Use your imagination: feel free to use your own assumptions but try to stick to the logic outlined in the code comments (i.e., win=>move closer to the ideal, lose=>move closer to the center). Do not allow your politicians to go below 0 and above 1. After you finish, the following code should work:

```
if t > 0:  
    LC.choose_policy(votesL, votesR)  
    RC.choose_policy(votesR, votesL)
```

Task 2

Create a “history” dictionary, which will store all historical data for both candidates (hint: “left” and “right” could be the keys, while lists of policy values over time for each candidate could be the corresponding dictionary values). Make sure to save candidates’ policies in each round (that is, after you call the `.choose_policy()` methods above).

Task 3

Add voting decisions to the for loop. Notice that we already created all necessary methods for this step. You just need to call them inside the loop. Notice that before choosing between the two politicians, each voter should first decide whether or not to vote at all. That is, make sure to call the `.turnout()` method before calling the `.vote()` method.

Task 4

Calculate the election results (`votesL` and `votesR`): the politicians will need this information to choose their new policies in the next round (time period).

Task 5

Create a simple figure plotting the two politicians’ policies over time. It may look like this:

