

Product Backlogs

1:

As the product owner, I want both Plurality and Droop algorithms to be fully implemented and working correctly so that I can run the results of the election through either algorithm.

Acceptance Criteria:

- Prompt user input: 1 for Plurality, or 2 for Droop
- Validate that user input is an integer, and is either 1 or 2. Any other input will exit the program.
- Inform user of choice and generate either a new Plurality or STV class based on their choice
- Generate success/failure message if the classes cannot be generated/initialized
- Generate error message if error occurs during execution
- Generate error message if the report can not be created or exported.
- Both algorithms fully implemented and working properly

Effort: Small

2:

As a developer, I want to be able to toggle the shuffling of ballots to be on or off so that I can test the functionality of the system and so that users aren't prompted for shuffling.

Acceptance Criteria:

- Ballots are randomly shuffled by default
- The developer can turn on/off the shuffle option through an argument in command line
- The election officials don't need to decide whether the ballots need to be shuffled

Effort: Small/Medium

3:

As a user, I want all election information (seats, ballots, candidates, algorithm) stored in the CSV file so that I don't have to input it manually.

Acceptance Criteria:

- The only (potential, see other PBI on file reading) input should be the file name
- Program is able to read election criteria from CSV file
- Program ensures that all information exists and is valid
 - If not, program informs user and prompts them for missing input
- Program store all input into classes and variables successfully

Effort: Small/Medium

4:

As a user, I want to either supply a filename as a command line argument or be prompted for the filename if nothing is supplied so that I have two ways to input the file.

Acceptance Criteria:

- User can run the program with an additional argument which is the name of the CSV file
- Validate if the file is existed and opened successfully
- Prompt the user to input filename if no argument supplied, or filename supplied is invalid
- Generate success message when the file is opened successfully
- Read file contents successfully, or generate error message if an error occurs

Effort: Small

5:

As an election official, I want ballots to be discarded if less than half of the candidates are ranked when using droop so that we can ensure the validity of the ballots.

Acceptance Criteria:

- Only run these checks when using Droop Quota, and not Plurality
- Check how many candidates are ranked for each ballot when processing the ballot information
- Discard the ballot if the number of rankings are less than half of the number of candidates

Effort: Medium

6:

As an election official, I want to have an additional short report containing pertinent information regarding the program's execution and results so that I can verify the results and program execution.

Acceptance Criteria:

- The program generates a report with important information regarding execution flow and results
- File includes information such as date/time, number of ballots and seats, candidate names, ballot assignments, etc.
- Generate failure message if the file can not be created or opened
- Generate error message when error occurs during creating the report

Effort: Small

7:

As an election official, I want the program to be able to run in a timely manner so that it can quickly find the results of an election with a large number of ballots to be read.

Acceptance Criteria:

- The program can run as quickly and efficiently as possible.
- The program can handle processing a large number of ballots, up to the hundreds of thousands.
- The program should be able to generate and export results in a reasonable amount of time (let's say less than a minute, ideally around 10 seconds max).

Effort: Medium/Large

8:

As an election official, I want to see the progress of election as well as the election result, so that I can track the process of election.

Acceptance Criteria:

- The program prints election information to the screen in each iteration
- For plurality algorithm, the program should output the tallies for each candidate as the election goes
- For droop algorithm, the program should output the updated information on winners and losers list for each pass

- Generate error message if error occurs during execution

Effort: Small

9:

As an election official, I want a GUI that allows me to input ballots into the voting system directly so that eventually the ballot information can be sent straight to the system without the external medium of a CSV file.

Acceptance Criteria:

- The user is able to manually add ballot information to the voting machine through a graphical user interface.
- The system has some way of checking and storing the input ballot information.
- The added ballot can be used in the same way as other ballots which are read in from the CSV file.
- The GUI is nice and easy to use, and user friendly.
- Generate error message when error occurs during adding the ballot, or if ballot information is incorrect.
- Ballots can either be manually input through the GUI, read from a CSV file, or a combination of both.

Effort: Extra Large