

Spring 2022 Computer Science 2 Program #1: Politics

I may take some of our assignments from past programming contests, such as I am doing for this program. Since it is easiest, I will use the .pdf of the problem from the contest (separately posted) and then supplement it with a document like this, which explains what I would like students to submit and the format for students to use. This will usually be fairly consistent from assignment to assignment, but please do read the accompanying document for each assignment just in case there are some changes.

How To Read In Input

For this problem, please read in input using standard input via a Scanner object declared like this:

```
Scanner stdin = new Scanner(System.in);
```

Do NOT prompt the user to enter anything!!! Just read in the pieces of information as they come.

If a problem has more than one input case per test in the description like this one, declare all of the main variables you will use **INSIDE** your case loop. For example, in this problem, since the number of cases is unknown, your main method should look like this:

```
public static void main(String[] args) {

    Scanner stdin = new Scanner(System.in);
    int nCandidates = stdin.nextInt();
    int nSupporters = stdin.nextInt();

    while (nCandidates != 0) {

        // Declare other variables here.
        // Read input for one case.
        // Process information.
        // Output answer for one case.
    }

}
```

Printing Output

Please just use `System.out.print/System.out.println` to produce output. Also, output answers to a single case as soon as they are calculated. Do NOT wait until after you read in all the cases. Thus, follow the idea of the mold above, where you have a loop that processes multiple cases and output the results for a single case inside the loop towards the end of it, and then reads in the next case when continuing the next case loop iteration.

How to Test Your Code

1. Type up a sample input file. (Strongly suggested to type your own beyond what is provided.)
2. Test on the command line as follows:

```
>>java politics < myinput.in > myoutput.out
```

3. Either visually inspect the contents of myoutput.out to see if it matches the results you expect, or, if you know what the answers should be, store those in a separate file, say, correct.out and then use any file comparison tool to see if the files are the same or not. In windows, you can type fc at the command line:

```
fc myoutput.out correct.out
```

In a Unix system like Eustis, you can type:

```
diff -w myoutput.out correct.out
```

Note: The names of the files can be anything you want. Both fc and diff just compare the contents of the two files that are given to them as inputs.

4. If there are differences, inspect them more carefully using a tool such as WinMerge.

What To Submit

For this assignment, please submit a single Java program named politics.java which solves the posted problem. Since this program is relatively small, it's okay if all of the code is inside of the main method. However, you are welcome to add multiple classes and methods in the same file. The other classes other than politics can't be public though.