

Object Oriented Programming Exercise: Parsing 2016 Election Results

The file *2016_US_County_Level_Presidential_Results.csv* contains a county by county listing of the 2016 presidential election results. This data was downloaded online and I make NO CLAIM as to the accuracy.

Your task is to define a class that will encapsulate a single record of the data described above. Define the class *ElectionResults2016.java*

ElectionResults2016	
- demVotes: double	
- gopVotes: double	
- totalVotes: double	
- percentDem: double	
- percentGOP: double	
- stateAbbreviation: String	
- county: String	
- fips: int	
+ ElectionResults2016(demV: double, gopV: double, totalV: double, perDem: double, perGOP: double, state: String, county: String, fips: int)	
+ getTotalVotes(): double	
+ getDemVotes(): double	
+ getGOPVotes(): double	
+ getPercentDifference(): double	
+ getState(): String	
+ getCounty(): String	
+ toString(): String	

Application: Define the class *ElectionDriver.java*

ElectionDriver
- results: ArrayList<ElectionResults2016>
+ fillList(): void
+ findLargestMargin(): ElectionResults2016
+ findLargestMargin(state: String): ElectionResults2016
+ getStateTotals(state: String): ElectionResults2016
+ static main(args: String[]): void

Method Descriptions

- **fillList():**
 - opens the file *2016_US_County_Level_Presidential_Results.csv*
 - For each line in the file, create an instance of **CountyResults2016** by calling the overloaded constructor.
 - This data is comma separated. This presents a challenge. How will you parse this data?
 - Add the instance to the list
- **CountyResults2016 findLargestMargin():** finds and returns the county record showing the largest margin of victory for the entire country
- **CountyResults2016 findLargestMargin(String state):** overloaded method that returns the county record showing largest margin of victory by state
- **String[] getStateTotals():** returns an array showing the total results per state. Each element will contain:
 - State, Total Dem Votes, Total GOP votes, Margin of Victory, Winning Party

Unit Tests: Write unit tests for the following methods

- findLargestMargin
- findLargestMargin(State)
- getStateTotals

- How will you determine what the correct output will be? Using a spreadsheet application to parse, filter, sort and otherwise process the file would be a good idea. **I do not know the answers to these questions. It is up to you to reliably figure this out. I am very willing to discuss testing approaches if you take the initiative to reach out.**
- Prove beyond a shadow of a doubt that your code functions correctly. I want to see intelligently designed output that is easy to read and understand. Simply dumping the entire output to the terminal is not a great idea. What could be done to enhance this?
- I want to see screen shots of your Unit Test results

Submission: Push *ElectionResults2016.java*, *ElectionDriver.java* and your screenshots and unit test files.

Extra Challenge (NOT REQUIRED): Use a charting API like JFreeChart to create chart graphics illustrating interesting views of the election results:
<http://www.jfree.org/jfreechart/>