# Module 3 Challenge - [PYTHON-CHALLENGE](https://github.com/MichaelELeonard/python-challenge)

GOAL

For the Module #3 Challenge we were tasked with creating Python code to handle two potential real-world situations involving a Banking Institution and a Small Rural Town modernizing its election processes.

PyPoll Project

For the PyPoll project we needed the read in data from a .csv file and create code that will determine:

* The total number of votes cast
* A complete list of candidates who received votes
* The percentage of votes each candidate won
* The total number of votes each candidate won
* The winner of the election based on popular vote

The output results should display:

Election Results

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Total Votes: 369711

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Charles Casper Stockham: 23.049% (85213)

Diana DeGette: 73.812% (272892)

Raymon Anthony Doane: 3.139% (11606)

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Winner: Diana DeGette

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THE CODE

For this project I imported the os & csv libraries and initialized my initial variables. A List (Candidate\_Info\_List) was utilized to store the candidates Name, Total Voted Received, and the Percentage of the Total Votes Received. Two functions were created for this project. Convert\_to\_Percent was utilized to calculate the candidate’s percentage of the overall vote and to store the variable in the in the Candidate\_Info\_List. A second function Who\_Won was used to determine who won the elections popular vote and return the name of the victorious candidate. To gather the needed data, a FOR Loop was established to traverse the provided .csv datafile. A variable Total\_Votes was incremented to track the total votes cast in the election. In each row of the file the name of the candidate that received the vote was read into the variable Candidate\_Name and then that variable was compared the candidates’ names in the Candidate\_Info\_List and their vote total was then incremented in the list. The Convert\_To\_Percent function was called for each candidate and their Percentage of Votes received was updated in the Candidate\_Info\_List. The Who\_Won function was called to determine the name of the winner of the election and that result was stored in Winner\_Name. Finally, the results were printed out to the Visual Studio Terminal and a Text file (Election\_Results.txt) as outlined in the project rubric.

RESULTS

The results of the code were able to replicate the desired output laid out in the project rubric. The results showed that 369,711 votes were cast in the election. Charles Casper Stockham received 85,213 votes representing 23.049% of total votes cast. Diana DeGette received 272,892 votes representing 73.812% of total votes cast. Raymon Anthony Doane received 11,606 votes representing 3.139% of total votes cast. Finally, the code determined that Diana DeGette had won the election based off the popular vote totals received by each candidate. The code executes efficiently, traversing a .csv file containing 369,712 lines of data and producing results in approximately 2.58 seconds.