ACTIVITY DIAGRAM FOR VOTING SYSTEM

Check if CSV File was Provided

Prompt User for Filename

[No] [Yes]

Check if File Exists in Program Directory

[Yes] [No]

Open File

Output Error Message to Terminal

[OPLV]

[IRV]

Retrieve Number of Candidates

Retrieve Candidates and Their Respective Party

Retrieve Number of Seats

Calculate Quota (# of Ballots / # of Seats)

Retrieve Number of Ballots

[Unassigned Ballot]

Assign Ballot to Candidate and Party

Record Assignment to Auditor

[No Unassigned Ballots]

Order Each Party's Candidates by Popular Vote (Randomly Resolving Ties)

Calculate Number of Seats Per Party (# of party votes / quota)

Allocate Remaining Seats to Parties With the Largest Remainder (Randomly Resolving Ties)

Fill Seats for Each Party Based on Popular Vote of Candidates

Record Seat Assignments to Auditor

Output Winner / Election Information to Terminal

<<system>>

Porting System

Auditor Creates Output File

Terminate Program

[Yes]

Record Winner of Election to Auditor

No

[Unprocessed Ballot in Voter Pool]

Assign Ballot to Candidate Based on N-ary Vote from Ballot.

Record Assignment to Auditor

Check if Candidate has Majority based on Quota

Retrieve Number of Candidates

Retrieve Number of Ballots

Determine Quota For Majority
Odd: [0.5 * # Ballots]
Even: [0.5 * # Ballots + 1]

[All Voter Pool Ballots Processed]

Record Elimination to Auditor

Update Voter Pool To that of Candidate with Least Number of Votes (Randomly Resolve Ties)