| **Project Name: Project 1: Voting System Team#08** | |
| --- | --- |
| **Test Stage: Unit \_\_ System \_\_X** | **Test Date: 3/24/2023** |
| **Test Case ID#: SystemCPL\_06** | **Name(s) of Testers: Dheva Subramaniam** |
| **Test Description:**Testing the whole system with a CPL election input ballot “CPLElectionTest\_TieDuringSeatRedistribution.csv”. This csv is an instance of a CPL election with that runs into a tie during the process of redistributing seats from a party that was awarded more seats than they have candidates to fill them. | When running this test all files are in the same working directory which can be found in Project1/src. The csv files can be found in Project1/testing. The csv file used in this specific test is called CPLElectionTest\_TieDuringSeatRedistribution.csv |
| **Automated: yes\_\_\_ no \_X\_\_** |  |
| **Results: Pass \_\_\_\_X\_ Fail\_\_\_\_\_\_\_\_** |  |
|  |  |
| **Preconditions for Test:**  The executable has already been compiled using the make file and CPLElectionTest\_TieDuringSeatRedistribution.csv is found in the testing directory | |

| **Step**  **#** | **Test Step**  **Description** | **Test**  **Data** | **Expected**  **Result** | **Actual**  **Result** | **Notes** |
| --- | --- | --- | --- | --- | --- |
| 1 | Running the system using  ./2-TypeElection.exe with the file ../testing/CPLElectionTest\_TieDuringSeatRedistribution.csv as an input | ../testing/CPLElectionTest\_TieDuringSeatRedistribution.csv | N/A | N/A | Running without command line argument. |
| 2 | Entering the date of the IR election in format MMDDYYYY | date string “06062001” | N/A | N/A | Sets the date used for the audit file. |
| 3 | Compare the outputs provided by the system (terminal and audit file) |  | Expected results can be found below for both the terminal and the audit file | Actual results matched one of the expected results (all were matched at some point during reruns). Checked manually | The system automatically processes the election and so once the date is provided as in step 3, the system will output the results. The expected results and the actual results were manually checked and matched. Additionally, due to the randomness of ties, it was manually observed that each potential option did occur during reruns |

**Post condition(s) for Test:**



Audit file “06062001CPL.txt” is created and results of the Election are printed to the terminal.

Test Passed

Expected output for display:

Election type: CPL

Number of seats: 3

Number of ballots cast: 3

Party results:

PartyA:

Number of votes: 3 (100.00%)

Number of seats: 2 (66.67%)

PartyB:

Number of votes: 0 (0.00%)

Number of seats: 1 (33.33%)

PartyC:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

PartyD:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

Candidates receiving seats:

PartyA: A B

PartyB: C

PartyC: None

PartyD: None

OR

Election type: CPL

Number of seats: 3

Number of ballots cast: 3

Party results:

PartyA:

Number of votes: 3 (100.00%)

Number of seats: 2 (66.67%)

PartyB:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

PartyC:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

PartyD:

Number of votes: 0 (0.00%)

Number of seats: 1 (33.33%)

Candidates receiving seats:

PartyA: A B

PartyB: None

PartyC: None

PartyD: F

OR

Election type: CPL

Number of seats: 3

Number of ballots cast: 3

Party results:

PartyA:

Number of votes: 3 (100.00%)

Number of seats: 2 (66.67%)

PartyB:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

PartyC:

Number of votes: 0 (0.00%)

Number of seats: 1 (33.33%)

PartyD:

Number of votes: 0 (0.00%)

Number of seats: 0 (0.00%)

Candidates receiving seats:

PartyA: A B

PartyB: None

PartyC: E

PartyD: None

Expected output for audit file:

CPLElection

Number of Parties: 4

PartyA: A,B

PartyB: C,D

PartyC: E

PartyD: F

Number of seats: 3

Number of ballots: 3

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Quota determined to be: 1

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 0

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Party "PartyA" has 3 seat(s) but only 2 candidate(s)- redistributing 1 seat(s)

Tie during seat reallocation between PartyB PartyC and PartyD

Party "PartyB" given one seat from "PartyA"

Candidates receiving seats:

PartyA: A B

PartyB: C

PartyC: None

PartyD: None

OR

CPLElection

Number of Parties: 4

PartyA: A,B

PartyB: C,D

PartyC: E

PartyD: F

Number of seats: 3

Number of ballots: 3

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Quota determined to be: 1

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 0

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Party "PartyA" has 3 seat(s) but only 2 candidate(s)- redistributing 1 seat(s)

Tie during seat reallocation between PartyB PartyC and PartyD

Party "PartyD" given one seat from "PartyA"

Candidates receiving seats:

PartyA: A B

PartyB: None

PartyC: None

PartyD: F

OR

CPLElection

Number of Parties: 4

PartyA: A,B

PartyB: C,D

PartyC: E

PartyD: F

Number of seats: 3

Number of ballots: 3

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Quota determined to be: 1

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 0

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Party "PartyA" has 3 seat(s) but only 2 candidate(s)- redistributing 1 seat(s)

Tie during seat reallocation between PartyB PartyC and PartyD

Party "PartyC" given one seat from "PartyA"

Candidates receiving seats:

PartyA: A B

PartyB: None

PartyC: E

PartyD: None