| **Project Name: Project 1: Voting System Team#08** | |
| --- | --- |
| **Test Stage: Unit \_x\_ System \_ \_** | **Test Date: 3/23/2023** |
| **Test Case ID#: CPLElection\_11** | **Name(s) of Testers: Dheva Subramaniam** |
| **Test Description:**   * Testing the RunElection using DisplayResults to ensure correct output follows input into the object * This test uses the CPLElectionTest\_TieDuringSeatRedistribution.csv file, which contains an election that results in a party getting more seats than they have candidates to fill them and creates a tie during the process of reallocating those seats |  |
| **Automated: yes\_x\_ no \_\_\_ using Google Test** |  |
| **Results: Pass \_\_\_\_x\_\_\_ Fail\_\_\_\_\_\_\_\_** |  |
|  |  |
| **Preconditions for Test:**  CPLElectionTest\_TieDuringSeatRedistribution.csv must be in the same directory as the testing executable | |

| **Step**  **#** | **Test Step**  **Description** | **Test**  **Data** | **Expected**  **Result** | **Actual**  **Result** | **Notes** |
| --- | --- | --- | --- | --- | --- |
| 1 | Opens CPLElectionTest\_TieDuringSeatRedistribution.csv | CPLElectionTest\_TieDuringSeatRedistribution.csv | istream object | istream object | N/A |
| 2 | Call ignore() on istream object with inputs 256 and ‘\n’ | int 256, char ‘\n’ | N/A | N/A | First line is being skipped as it is already known what type of election is being read |
| 3 | Create CPLElection object | istream generated by step 2, date string: “05112001” | CPLElection object | CPLElection object | N/A |
| 4 | Call RunElection method on CPLElection object | CPLElection object from step3 | N/A | N/A | CPLElection’s private members should only be interacted with bypublic methods and so do not result in any direct output |
| 5 | Check that CPLElectionTest\_TieDuringSeatRedistribution.csv is closed using is\_open() | istream object | false | false | N/A |
| 6 | Run the DisplayResultsMethod | CPLElection object | See below Post condition(s)  \*Note, there are two possible options due to randomness so output varies\* | See below Post condition(s)  \*Note, there are two possible options due to randomness so output varies\* | Values are compared using Google Test |

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

N/A - \*Note, terminal output would normally result, but is captured by the testing framework for comparison purposes\*

Expected Result for Step 6:

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: 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

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

Actual Result for Step 6:

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: 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

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