| **Project Name: Project 1: Voting System Team#08** | |
| --- | --- |
| **Test Stage: Unit \_x\_ System \_ \_** | **Test Date: 3/23/2023** |
| **Test Case ID#: CPLElection\_08** | **Name(s) of Testers: Dheva Subramaniam** |
| **Test Description:**   * Testing the ReadElection method using the WriteResultsToFile method * This test uses the CPLElectionTest\_TieDuringRemainder.csv file, which contains an election that uses vote remainders to allocate chairs left over after the initial allocation using the quota and runs into a tie while doing so |  |
| **Automated: yes\_x\_ no \_\_\_ using Google Test** |  |
| **Results: Pass \_\_\_\_x\_\_\_ Fail\_\_\_\_\_\_\_\_** |  |
|  |  |
| **Preconditions for Test:**  CPLElectionTest\_TieDuringRemainder.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\_TieDuringRemainder.csv | CPLElectionTest\_TieDuringRemainder.csv | ifstream object | ifstream 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: “05082001” | 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\_TieDuringRemainder.csv is closed using is\_open() | istream object | false | false | N/A |
| 6 | Run the WriteResultsToFile | CPLElection object from step 3 | 05082001CPL.txt file | 05082001CPL.txt file | File generated from auditFiler |
| 7 | Open 05082001CPL.txt | 05082001CPL.txt | ifstream object | ifstream object | N/A |
| 8 | Read contents | ifstream object | See below Post Conditions | See below Post Conditions | Contents are compared using Google Test |

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

05082001CPL.txt file containing auditor information

Expected results for step 8:

CPLElection

Number of Parties: 4

PartyA: A,B,C,D

PartyB: E,F,G

PartyC: H,I

PartyD: J,K

Number of seats: 6

Number of ballots: 12

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Ballot ID: 4 Ballot Info: 1,,,

Ballot ID: 5 Ballot Info: 1,,,

Ballot ID: 6 Ballot Info: 1,,,

Ballot ID: 7 Ballot Info: ,1,,

Ballot ID: 8 Ballot Info: ,1,,

Ballot ID: 9 Ballot Info: ,1,,

Ballot ID: 10 Ballot Info: ,1,,

Ballot ID: 11 Ballot Info: ,,1,

Ballot ID: 12 Ballot Info: ,,,1

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Party "PartyA" received ballot number 4

Party "PartyA" received ballot number 5

Party "PartyA" received ballot number 6

Party "PartyB" received ballot number 7

Party "PartyB" received ballot number 8

Party "PartyB" received ballot number 9

Party "PartyB" received ballot number 10

Party "PartyC" received ballot number 11

Party "PartyD" received ballot number 12

Quota determined to be: 2

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 2

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Tie during seat allocation between PartyC and PartyD

Awarded remainder seat to "PartyC"

Candidates receiving seats:

PartyA: A B C

PartyB: E F

PartyC: H

PartyD: None

OR

CPLElection

Number of Parties: 4

PartyA: A,B,C,D

PartyB: E,F,G

PartyC: H,I

PartyD: J,K

Number of seats: 6

Number of ballots: 12

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Ballot ID: 4 Ballot Info: 1,,,

Ballot ID: 5 Ballot Info: 1,,,

Ballot ID: 6 Ballot Info: 1,,,

Ballot ID: 7 Ballot Info: ,1,,

Ballot ID: 8 Ballot Info: ,1,,

Ballot ID: 9 Ballot Info: ,1,,

Ballot ID: 10 Ballot Info: ,1,,

Ballot ID: 11 Ballot Info: ,,1,

Ballot ID: 12 Ballot Info: ,,,1

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Party "PartyA" received ballot number 4

Party "PartyA" received ballot number 5

Party "PartyA" received ballot number 6

Party "PartyB" received ballot number 7

Party "PartyB" received ballot number 8

Party "PartyB" received ballot number 9

Party "PartyB" received ballot number 10

Party "PartyC" received ballot number 11

Party "PartyD" received ballot number 12

Quota determined to be: 2

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 2

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Tie during seat allocation between PartyC and PartyD

Awarded remainder seat to "PartyD"

Candidates receiving seats:

PartyA: A B C

PartyB: E F

PartyC: None

PartyD: J

Actual Result for step 8:

CPLElection

Number of Parties: 4

PartyA: A,B,C,D

PartyB: E,F,G

PartyC: H,I

PartyD: J,K

Number of seats: 6

Number of ballots: 12

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Ballot ID: 4 Ballot Info: 1,,,

Ballot ID: 5 Ballot Info: 1,,,

Ballot ID: 6 Ballot Info: 1,,,

Ballot ID: 7 Ballot Info: ,1,,

Ballot ID: 8 Ballot Info: ,1,,

Ballot ID: 9 Ballot Info: ,1,,

Ballot ID: 10 Ballot Info: ,1,,

Ballot ID: 11 Ballot Info: ,,1,

Ballot ID: 12 Ballot Info: ,,,1

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Party "PartyA" received ballot number 4

Party "PartyA" received ballot number 5

Party "PartyA" received ballot number 6

Party "PartyB" received ballot number 7

Party "PartyB" received ballot number 8

Party "PartyB" received ballot number 9

Party "PartyB" received ballot number 10

Party "PartyC" received ballot number 11

Party "PartyD" received ballot number 12

Quota determined to be: 2

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 2

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Tie during seat allocation between PartyC and PartyD

Awarded remainder seat to "PartyC"

Candidates receiving seats:

PartyA: A B C

PartyB: E F

PartyC: H

PartyD: None

OR

CPLElection

Number of Parties: 4

PartyA: A,B,C,D

PartyB: E,F,G

PartyC: H,I

PartyD: J,K

Number of seats: 6

Number of ballots: 12

Ballot ID: 1 Ballot Info: 1,,,

Ballot ID: 2 Ballot Info: 1,,,

Ballot ID: 3 Ballot Info: 1,,,

Ballot ID: 4 Ballot Info: 1,,,

Ballot ID: 5 Ballot Info: 1,,,

Ballot ID: 6 Ballot Info: 1,,,

Ballot ID: 7 Ballot Info: ,1,,

Ballot ID: 8 Ballot Info: ,1,,

Ballot ID: 9 Ballot Info: ,1,,

Ballot ID: 10 Ballot Info: ,1,,

Ballot ID: 11 Ballot Info: ,,1,

Ballot ID: 12 Ballot Info: ,,,1

Counting ballots:

Party "PartyA" received ballot number 1

Party "PartyA" received ballot number 2

Party "PartyA" received ballot number 3

Party "PartyA" received ballot number 4

Party "PartyA" received ballot number 5

Party "PartyA" received ballot number 6

Party "PartyB" received ballot number 7

Party "PartyB" received ballot number 8

Party "PartyB" received ballot number 9

Party "PartyB" received ballot number 10

Party "PartyC" received ballot number 11

Party "PartyD" received ballot number 12

Quota determined to be: 2

Party "PartyA" | Seats assigned using quota: 3

Party "PartyB" | Seats assigned using quota: 2

Party "PartyC" | Seats assigned using quota: 0

Party "PartyD" | Seats assigned using quota: 0

Tie during seat allocation between PartyC and PartyD

Awarded remainder seat to "PartyD"

Candidates receiving seats:

PartyA: A B C

PartyB: E F

PartyC: None

PartyD: J