Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP1 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the CPLParty Constructor

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, ConstructorTest
Functions: CPLParty()

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test: Accurate types passed into constructor

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	test party name	->get_name()	Party 1	Party 1	
3	get the candidates vect	party->get_candidates()			
4	check size of each vector		3	3	
5	check equality of Candidate objects		all objects equal	all objects equal	

Post condition(s) for Test: party is properly instantiated

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP2 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the get_candidates function

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, GetCandidatesTest
Functions: get_candidates(), get_name

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	get the candidates vect	partyCandidates = party->get_candidates()			
3	check size of candidates vectors		3	3	
4	Check that candidate in party matches name of “Candidate 1”	partyCandidates	Candidate 1	Candidate 1	
5	Check that candidate in party matches name of “Candidate 2”	partyCandidates	Candidate 2	Candidate 2	
6	Check that candidate in party matches name of “Candidate 3”	partyCandidates	Candidate 3	Candidate 3	

Post condition(s) for Test: get_candidates properly returns candidate vector

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP3 **Name(s) of Testers: Grant Oie**

Test Description:
Tests get_name()

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, GetNameTest
Functions: get_name()

Automated: _yes X no

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	test party name	->get_name()	Party 1	Party 1	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP4 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the set_total_votes and get_total_votes function

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, GetSetTotalVotes
Functions: get_total_votes, set_total_votes

Automated: yes X no

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	set total votes to 5	party			
3	get total votes, check equal to 5	party	5	5	
4					
5					

Post condition(s) for Test: party is properly instantiated

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP5 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the assignseatwinner on party w/ 3 candidates, 2 seats

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, AssignSeatWinners_base
Functions: assign_seat_winners(seats)

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test: seats parameter >= 0

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	call assign seatwinners(2)				
3	check that first two candidates got winner designation		true	true	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP6 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the assignseatwinner on party w/ 3 candidates, 0 seats

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));
```

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, AssignSeatWinners_zero
Functions: assign_seat_winners(seats)

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test: seats parameter >= 0

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	call assign seatwinners(0)				
3	check that no candidates were assigned seat		true	true	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: CP7 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the assignseatwinner on party w/ 3 candidates, 4 seats

setup with:
std::vector<Candidate*> candidates;
candidates.push_back(new CPLCandidate("Candidate 1"));
candidates.push_back(new CPLCandidate("Candidate 2"));
candidates.push_back(new CPLCandidate("Candidate 3"));

Filename: CPLPartyUnitTest.cpp
Testname: CPLPartyTest, AssignSeatWinners_over
Functions: assign_seat_winners(seats)

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test: seats parameter >= 0

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new CPLParty object	party candidates			
2	call assign seatwinners(4)				
3	check that all candidates were assigned seat		true	true	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP1 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the OPLParty Constructor

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, ConstructorTest
Functions: OPLParty()

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: Accurate types passed into constructor

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new OPLParty object	party candidates			
2	test party name	->get_name()	Party 1	Party 1	
3	get the candidates vect	party->get_candidates()			
4	check size of each vector		3	3	
5	check equality of Candidate objects		all objects equal	all objects equal	

Post condition(s) for Test: party is properly instantiated

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP2 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the get_candidates function

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, GetCandidatesTest
Functions: get_candidates(), get_name

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new OPLParty object	party candidates			
2	get the candidates vect	partyCandidates = party->get_candidates()			
3	check size of candidates vectors		3	3	
4	Check that candidate in party matches name of “Candidate 1”	partyCandidates	Candidate 1	Candidate 1	
5	Check that candidate in party matches name of “Candidate 2”	partyCandidates	Candidate 2	Candidate 2	
6	Check that candidate in party matches name of “Candidate 3”	partyCandidates	Candidate 3	Candidate 3	

Post condition(s) for Test: get_candidates properly returns candidate vector

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP3 **Name(s) of Testers: Grant Oie**

Test Description:
Tests get_name()

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, GetNameTest
Functions: get_name()

Automated: yes X no

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new OPLParty object	party candidates			
2	test party name	->get_name()	Party 1	Party 1	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP4 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the set_total_votes and get_total_votes function

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, GetSetTotalVotes
Functions: get_total_votes, set_total_votes

Automated: yes X no

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	instantiate new OPLParty object	party candidates			
2	set total votes to 5	party			
3	get total votes, check equal to 5	party	5	5	
4					
5					

Post condition(s) for Test:

party is properly instantiated

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP5 **Name(s) of Testers: Grant Oie**

Test Description:
Tests the num_votes attribute, and calculate_total_votes, get_total_votes functions

calculate_total_votes is called in constructor and not immediately visible

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, GetTotalVotesTest
Functions: ->num_votes, get_total_votes, calculate_total_votes

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Assign num_votes to candidates in candidates vector	candidates			
2	instantiate new OPLParty object	party candidates			
3	check that party.get_total_votes == sum of votes assigned to candidates		60	60	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP6 **Name(s) of Testers: Grant Oie**

Test Description:
Tests assign_seat_winners with 1 seat and a clear winner and get_winner functions

setup with:
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest,AssignSeatWinners_singleSeat
Functions: assign_seat_winners, get_winner

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: XXX

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Assign num_votes to candidates in candidates vector: 30, 20, 10 respectively	candidates			
2	instantiate new OPLParty object	party candidates			
3	call party->assign_seat_winners(1)	party			
4	Assert_true(candidate[0]->get_winner())		true	true	
5	Assert_true(candidate[1]->get_winner())		false	false	
6	Assert_true(candidate[2]->get_winner())		false	false	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP7 **Name(s) of Testers: Grant Oie**

Test Description:
Tests assign_seat_winners with 2 seat and a clear winners and get_winner functions

setup with:
```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest,AssignSeatWinners_multipleSeats
Functions: assign_seat_winners, get_winner

Automated: _yes_X_ no_

Results: Pass X Fail

Preconditions for Test: XXX

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Assign num_votes to candidates in candidates vector: 30, 25, 20 respectively	candidates			
2	instantiate new OPLParty object	party candidates			
3	call party->assign_seat_winners(2)	party			
4	Assert_true(candidate[0]->get_winner())		true	true	
5	Assert_true(candidate[1]->get_winner())		true	true	
6	Assert_true(candidate[2]->get_winner())		false	false	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: OP8 **Name(s) of Testers: Grant Oie**

Test Description:

Tests the assign_seat_winners() function under a tie-breaker scenario. 3-way tie for 2 seats. Ran several times to verify that the same candidates are not being selected each time.

setup with:

```
std::vector<Candidate*> candidates;
candidates.push_back(new OPLCandidate("Candidate 1"));
candidates.push_back(new OPLCandidate("Candidate 2"));
candidates.push_back(new OPLCandidate("Candidate 3"));
```

Filename: FileOPLPartyUnitTest.cpp
Testname: OPLPartyTest, AssignSeatWinners_equalVotes
Functions: assign_seat_winner

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Assign num_votes to candidates in candidates vector: 30 for all	candidates			
2	instantiate new OPLParty object	party candidates			
3	call party->assign_seat_winners(2)	party			
4	sum number of winners in				

	candidate array				
5	check num winners		2	2	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP1 **Name(s) of Testers: Grant Oie**

Test Description:
test tokenize_lines against, base case

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, TokenizeLines_base
Functions: tokenize_lines

Automated: yes_X_ no ___

Results: Pass ___X_ Fail _____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	initialize string	"Token1,Token2,Token3"			
2	call tokenize_lines on string	vector<string>			
3	check size of vector		3	3	
4	check equality of vector[0]		“Token1”	“Token1”	
5	check equality of vector[1]		“Token2”	“Token2”	
6	check equality of vector[2]		“Token3”	“Token3”	

Post condition(s) for Test:

Project Name: Voting System — Team# 13

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP2 **Name(s) of Testers: Grant Oie**

Test Description:
test tokenize_lines with whitespaces added

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, TokenizeLines_whitespaces
Functions: tokenize_lines

Automated: yes_X_ no ___

Results: Pass ___ X_ Fail _____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	initialize string	"Token1 , Token2,Token3 "			
2	call tokenize_lines on string	vector<string>			
3	check size of vector		3	3	
4	check equality of vector[0]		“Token1”	“Token1”	
5	check equality of vector[1]		“Token2”	“Token2”	
6	check equality of vector[2]		“Token3”	“Token3”	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP3 **Name(s) of Testers: Grant Oie**

Test Description:
test tokenize_lines on a ballot example

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, TokenizeLines_ballots1
Functions: tokenize_lines

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	initialize string	",,1, "			
2	call tokenize_lines on string	vector<string>			
3	check size of vector		4	4	
4	check equality of vector[0]		“”	“”	
5	check equality of vector[1]		“”	“”	
6	check equality of vector[2]		“1”	“1”	
7	check equality of vector[3]		“”	“”	

Post condition(s) for Test:

Project Name: Voting System — Team# 13

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP4 **Name(s) of Testers: Grant Oie**

Test Description:
test tokenize_lines on a ballot example

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, TokenizeLines_ballots2
Functions: tokenize_lines

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	initialize string	"1,,, "			
2	call tokenize lines on string	vector<string>			
3	check size of vector		4	4	
4	check equality of vector[0]		“1”	“1”	
5	check equality of vector[1]		“”	“”	
6	check equality of vector[2]		“”	“”	
7	check equality of vector[3]		“”	“”	

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP5 **Name(s) of Testers: Grant Oie**

Test Description:
test tokenize_lines on a ballot example

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, TokenizeLines_ballots3
Functions: tokenize_lines

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	initialize string	",,,1 "			
2	call tokenize_lines on string	vector<string>			
3	check size of vector		4	4	
4	check equality of vector[0]		“”	“”	
5	check equality of vector[1]		“”	“”	
6	check equality of vector[2]		“”	“”	
7	check equality of vector[3]		“1”	“1”	

Post condition(s) for Test:

Project Name: Voting System

Team# 13

Test Stage: Unit _X_ System __

Test Date: 3/24/24

Test Case ID#: EDP6

Name(s) of Testers: Grant Oie

Test Description:

test the accuracy of create_OPL_candidates function

setup with:

```
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;
```

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, CreateOPLCandidates
Functions: create_OPL_candidates

Automated: yes X no

Results: Pass ___X_ Fail _____

Preconditions for Test: there are candidates in the csv file

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	open opltestfile				
2	check that file opened properly				
3	read first line into electionType	electionType			
4	read second line into numSeats	numSeats			
5	read third line into numBallots	numBallots			
6	read fourth line into numCandidates	numCandidates			
7	call create_OPL_candidates(file, numCandidates)	candidates = vector <tuple<partyname, candidate*>>			
8	check equality of numSeats, numBallots, numCandidates, candidates.size() against data in file		true	true	
9	check each partyname and candidate's name in the candidates vector, calling ->get_name() on each candidate and expect_eq'ing against the relevant name in the csv file		true	true	
10	delete allocated candidate memory				

Post condition(s) for Test:

Project Name: Voting System **Team# 13**

Test Stage: Unit _X_ System __ **Test Date: 3/24/24**

Test Case ID#: EDP7 **Name(s) of Testers: Grant Oie**

Test Description:

test the accuracy of assign_votes_to_candidates function

setup with:

```
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
```

```
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;
```

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, AssignVotesToCandidates
Functions: create_OPL_candidates,assign_votes_to_candidates

Automated: yes X no

Results: Pass ___X_ Fail_____

Preconditions for Test: there are candidates in the csv file, there are ballots in the csv file

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	open opltestfile				
2	check that file opened properly				
3	read first line into electionType	electionType			
4	read second line into numSeats	numSeats			
5	read third line into numBallots	numBallots			
6	read fourth line into numCandidates	numCandidates			
7	call create_OPL_candidates(file, numCandidates)	candidates = vector <tuple<partyname, candidate*>>			
8	extract just candidates from the vector<tuple>>	candidatesVec			
9	call assign_votes_to_candidates(file,candidatesVec)				
10	close file				
11	check equality of candidates[i]->get_num_votes() against the expected vote value		true	true	
12	delete allocated candidate memory				

Post condition(s) for Test:

Project Name: Voting System

Team# 13

Test Stage: Unit _X_ System __

Test Date: 3/24/24

Test Case ID#: EDP8

Name(s) of Testers: Grant Oie

Test Description:
test the accuracy of create_opl_parties function

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, CreateOPLParties
Functions: create_OPL_candidates,create_OPL_Parties

Automated: yes_X_ no ___

Results: Pass___X_ Fail_____

Preconditions for Test: there are candidates in the csv file

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	open opltestfile				
2	check that file opened properly				

3	read first line into electionType	electionType			
4	read second line into numSeats	numSeats			
5	read third line into numBallots	numBallots			
6	read fourth line into numCandidates	numCandidates			
7	call create_OPL_candidates(file, numCandidates)	candidates = vector <tuple<partyname, candidate*>>			
8	call create_OPL_parties(candidates)	parties			
9	call assign_votes_to_candidates(file,candidatesVec)				
10	check parties size		3	3	
11	check parties name and size of candidate vector against expected values		true	true	
12	delete allocated party and candidate memory				

Post condition(s) for Test:

Project Name: Voting System

Team# 13

Test Stage: Unit _X_ System __

Test Date: 3/24/24

Test Case ID#: EDP9

Name(s) of Testers: Grant Oie

Test Description:

test the accuracy of create_cpl_parties function

setup with:

```
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;
```

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, CreateCPLParties
Functions:create_CPL_Parties

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test: there are parties/candidates in the csv file

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	open cpltestfile				
2	check that file opened properly				
3	read first line into electionType	electionType			
4	read second line into numSeats	numSeats			
5	read third line into numBallots	numBallots			
6	read fourth line into numCandidates	numCandidates			
7	call create_CPL_parties(file, numCandidates)	parties = vector <Party*>			
8	close file				
9	check parties size		6	6	
10	check party name and size of candidate array against expected values		true	true	
11	delete allocated party memory				

Post condition(s) for Test:

Project Name: Voting System

Team# 13

Test Stage: Unit _X_ System __

Test Date: 3/24/24

Test Case ID#: EDP10

Name(s) of Testers: Grant Oie

Test Description:

test the accuracy of assign_votes_to_parties function

setup with:
oplTestFile = "../testing/test_data/sys_test1_opl.csv";
cplTestFile = "../testing/test_data/sys_test3_cpl.csv";
std::string oplTestFile;
std::string cplTestFile;
std::string election_type;
int numSeats;
int numBallots;
std::string line;
int numCandidates;
int numParties;

Filename: ElectionDataParserUnitTest.cpp
Testname: ElectionDataParserTest, AssignVotesToParties
Functions:create_CPL_parties, assign_votes_to_parties

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: there are parties and votes in the csv file

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	open cpltestfile				
2	check that file opened properly				
3	read first line into electionType	electionType			
4	read second line into numSeats	numSeats			
5	read third line into numBallots	numBallots			
6	read fourth line into numCandidates	numCandidates			
7	call create_CPL_parties(file, numCandidates)	parties = vector <Party*>			
8	call assign_votes_to_parties(file,parties)				
9	close file				
10	check parties vote counts		true	true	

	against expected values				
11	delete allocated party memory				

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit X System __

Test Date: 22/03/2024

Test Case ID#: OC 1

Name(s) of Testers: Michael Mulhall

Test Description: Tests OPLCandidate get_name() return value.

Repo-Team13/Project1/testing/OPLCandidateUnitTest.cpp

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: OPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Create Candidate object	OPLCandidate* joe = new OPLCandidate("Joe Schmo")	None	None	Candidate joe is initialized
3	Compare get_name to expected result	EXPECT_EQ("Joe Schmo", joe->get_name());	True	True	joe->get_name() returns Joe Schmo
4	Create Candidate object	OPLCandidate* sam = new OPLCandidate("Sam Politician")	None	None	Candidate sam is initialized
5	Compare get_name to expected result	EXPECT_EQ("Sam Politician", sam->get_name());	True	True	sam->get_name() returns Sam Politician

Post condition(s) for Test:

Get_name correctly outputs a Candidate's name. It can be used in the to_string function.

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: OC 2 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests OPLCandidate get_winner() return value.

repo-Team13/Project1/testing/OPLCandidateUnitTest.cpp

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: OPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Candidate steven initialized	OPLCandidate* steven = new OPLCandidate ("Steven Carter");	Candidate initialized	Candidate initialzed	Candidate initialized
3	Compare winner variable with default winner value of false	EXPECT_EQ(false, steven->get_winner());	True	True	Candidate initialized with a winner value of false
4	Set winner to true	steven->set_winner(true);	Winner set to true	Winner set to true	
5	Check to see if get_winner returns the correct value	EXPECT_EQ(true, steven->get_winner());	True	True	Get_winner returns correct value of winner

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: OC 3 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests OPLCandidate setWinnerTest () return value.

Repo-Team13/Project1/testing/OPLCandidateUnitTest.cpp

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: OPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1		OPLCandidate* jenna = new OPLCandidate("Jenna America");			
2	OPLCandidate jenna initialized				
3	Default get_winner value is checked	EXPECT_EQ(false, jenna->get_winner());	True	True	
4	Jenna set to winner as true	jenna->set_winner(true); EXPECT_EQ(true, jenna->get_winner());	True	True	
5	Jenna set to winner as false	jenna->set_winner(false); EXPECT_EQ(false, jenna->get_winner()); EXPECT_NE(true, jenna->get_winner());	True	True	

Post condition(s) for Test:

Set_winner correctly sets the winner status to the parameter that is entered.

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: OC 4 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests OPLCandidate toStringTest() return value.

Repo-Team13/Project1/testing/OPLCandidateUnitTest.cpp

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: OPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	OPLCandidate tom initialized	OPLCandidate* tom = new OPLCandidate("Tom Clancy");			
2	Tom's votes set to 5	Tom->set_num_votes(5);	Num_votes value set to 5	Num_votes value set to 5	
3	Expect to_string to output "5 Tom Clancy"	EXPECT_EQ("5 Tom Clancy", tom->to_string());	True	True	Using winner default value of 5
4	Tom set_winner(true)	Tom->set_winner(true);	Winner = true	Winner = true	
5	Tom to_string expected to return "5 Tom Clancy WINNER"	EXPECT_EQ("> 5 Tom Clancy - WINNER", tom->to_string()); EXPECT_NE("5 Tom Clancy", tom->to_string());	True	True	To_string returns the correct values
6					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: OC 5 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests OPLCandidate getandsetNumVotesTest() return value/ altered value.

Repo-Team13/Project1/testing/OPLCandidateUnitTest.cpp

Automated: yes X no __

Results: Pass X Fail

Preconditions for Test: OPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	OPLCandidate jerry initialized	OPLCandidate* jerry = new OPLCandidate("Jerry Seinfeld");	Jerry initialized	Jerry initialized	
3	Testing Jerry's expected default num_votes value of zero	EXPECT_EQ(0, jerry->get_num_votes());	True	True	Get_num_votes() returns correct default value of 0
4	Jerry's votes set to 6	jerry->set_num_votes(6);	Num_votes set to 5	Num_votes set to 5	Using winner default value of 5
5	Expect Jerry's votes to be 6	EXPECT_EQ(6, jerry->get_num_votes());	True	True	
6	Set Jerry's votes to new value 0	jerry->set_num_votes(0);	Num_votes set to 0	Num_votes set to 0	
7	Expect Jerry's votes to be 0	EXPECT_EQ(0, jerry->get_num_votes());	True	True	Set_votes correctly alters the num_votes value

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: CC 1 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests CPLCandidate get_name() return value.

Repo-Team13/Project1/testing/CPLCandidateUnitTest.cpp

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: CPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Create CPLCandidate object	CPLCandidate* joe = new CPLCandidate("Joe Schmo")	None	None	Candidate joe is initialized
3	Compare get_name to expected result	EXPECT_EQ("Joe Schmo", joe->get_name());	True	True	joe->get_name() returns Joe Schmo
4	Create CPLCandidate object	CPLCandidate* sam = new CPLCandidate("Sam Politician")	None	None	Candidate sam is initialized
5	Compare get_name to expected result	EXPECT_EQ("Sam Politician", sam->get_name());	True	True	sam->get_name() returns Sam Politician

Post condition(s) for Test:

Get_name correctly outputs a Candidate's name. It can be used in the to_string function.

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: CC 2 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests CPLCandidate get_winner() return value.

repo-Team13/Project1/testing/CPLCandidateUnitTest.cpp

Automated: yes X no __

Results: Pass X Fail

Preconditions for Test: CPLCandidate compiles and a CPLCandidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1		CPLCandidate* steven = new CPLCandidate ("Steven Carter");	Candidate initialized	Candidate initialzed	Candidate initialized
2	Candidate steven initialized	EXPECT_EQ(false, steven->get_winner());	True	True	Candidate initialized with a winner value of false
3	Compare winner variable with default winner value of false	steven->set_winner(true);	Winner set to true	Winner set to true	
4	Set winner to true	EXPECT_EQ(true, steven->get_winner());	True	True	Get_winner returns correct value of winner
5	Check to see if get_winner returns the correct value				

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: CC 3 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests CPLCandidate set_winner() return value.

Repo-Team13/Project1/testing/CPLCandidateUnitTest.cpp

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: CPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1		CPLCandidate* jenna = new CPLCandidate("Jenna America");			
2	OPLCandidate jenna initialized				
3	Default get_winner value is checked	EXPECT_EQ(false, jenna->get_winner());	True	True	
4	Jenna set to winner as true	jenna->set_winner(true); EXPECT_EQ(true, jenna->get_winner());	True	True	
5	Jenna set to winner as false	jenna->set_winner(false); EXPECT_EQ(false, jenna->get_winner()); EXPECT_NE(true, jenna->get_winner());	True	True	

Post condition(s) for Test:

Set_winner correctly sets the winner status to the parameter that is entered.

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: CC 4 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests CPLCandidate toStringTest() return value.

Repo-Team13/Project1/testing/CPLCandidateUnitTest.cpp

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: CPLCandidate compiles and a Candidate object is initialized correctly.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	CPLCandidate tom initialized	CPLCandidate* tom = new CPLCandidate("Tom Clancy");			
3	Tom's votes set to 5	Tom->set_num_votes(5);	Num_votes value set to 5	Num_votes value set to 5	
4	Expect to_string to output "5 Tom Clancy"	EXPECT_EQ("5 Tom Clancy", tom->to_string());	True	True	Using winner default value of 5
5	Tom set_winner(true)	Tom->set_winner(true);	Winner = true	Winner = true	
6	Tom to_string expected to return "5 Tom Clancy WINNER"	EXPECT_EQ("> 5 Tom Clancy - WINNER", tom->to_string()); EXPECT_NE("5 Tom Clancy", tom->to_string());	True	True	To_string returns the correct values

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit X System __ **Test Date: 22/03/2024**

Test Case ID#: E1 **Name(s) of Testers: Michael Mulhall**

Test Description: Tests ElectionData break_tie return value.

Repo-Team13/Project1/testing/ElectionDataUnitTest.cpp

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: ElectionData object is initialized. Break tie is between at least two candidates.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Integer num1 to be set equal to break_tie(5)	int num1 = ElectionData::break_tie(5);	Num1 should be a random integer in a range of 0 to 4		
3	Expect num1 to be in a range of 0 to 4	EXPECT_GE(num1, 0); EXPECT_LE(num1, 4);	True	True	
4	Expect num2 to be set equal to break_tie(72)	int num2 = ElectionData::break_tie(72);	Num2 should be a random integer between 0 and 71		
5	Expect num2 to be in a range of 0 to 71	EXPECT_GE(num2, 0); EXPECT_LE(num2, 71);	True	True	
6	Integer num3 to be set equal to break_tie(2)	int num3 = ElectionData::break_tie(2);	Num3 should be a random integer between 0 and 1 inclusive.		
	Expect num3 to be in a range of 0 to 1	EXPECT_GE(num3, 0); EXPECT_LE(num3, 1);	True	True	

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team# 13**

Test Stage: Unit _x_ System __ **Test Date: March 22nd**

Test Case ID#: AL1 **Name(s) of Testers: Khalid Qasim**

Test Description:

This test verifies the Audit Log constructor initializes the log with an empty string

Filename: AuditLogUnitTest.cpp
Testname: AuditLogTest, ConstructorTest
Functions: AuditLog()

Automated: yes X no

Results: Pass __X___ Fail_____

Preconditions for Test: Audit Log object instantiated and test directory exists

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call write_to_file method without adding any content to the log	Filename = "ConstructorTest.txt"	N/A	N/A	
2	Construct a path to the file	testDirectory and Filename = "ConstructorTest.txt"	N/A	N/A	
3	Read the file content to a string	Path to "ConstructorTest.txt"	N/A	N/A	
4	Compare file results with expected results	"ConstructorTest.txt" file content	"" (empty string)	"" (empty string)	

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team# 13**

Test Stage: Unit _x_ System __ **Test Date:** March 22nd

Test Case ID#: AL2 **Name(s) of Testers:** Khalid Qasim

Test Description:

This test verifies if the add_line method correctly adds a line to the log

Filename: AuditLogUnitTest.cpp
Testname: AuditLogTest, AddLineTest
Functions: add_line()

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: Audit Log object instantiated and test directory exists

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call add_line method with testLine	testLine = "Test line for AddLineTest";	N/A	N/A	
2	Write the log content to a file	Filename = "AddLineTest.txt"	N/A	N/A	
3	Construct a path to the file	testDirectory and Filename = "AddLineTest.txt"	N/A	N/A	
4	Read the file content to a string	Path to "AddLineTest.txt"	N/A	N/A	
5	Compare file results with expected results	"AddLineTest.txt" file content	"Test line for AddLineTest\n"	"Test line for AddLineTest\n"	

Post condition(s) for Test:

Project Name: Project 1: Voting System Team# 13

Test Stage: Unit _x_ System __ **Test Date:** March 22nd

Test Case ID#: AL3 **Name(s) of Testers:** Khalid Qasim

Test Description:

This test verifies if the clear_log method correctly clears the logs content to an empty string

Filename: AuditLogUnitTest.cpp
Testname: AuditLogTest, ClearLogTest
Functions: clear_log()

Automated: yes X no

Results: Pass __X___ Fail_____

Preconditions for Test: Audit Log object instantiated and test directory exists

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call clear_log method with the test line	"Test line for ClearLogTest"	N/A	N/A	
2	Write the log content to a file	Filename = "ClearLogTest.txt"	N/A	N/A	
3	Construct a path to the file	testDirectory and Filename = "ClearLogTest.txt"	N/A	N/A	
4	Read the file content to a string	Path to "ClearLogTest.txt"	N/A	N/A	
5	Compare file results with expected results	"ClearLogTest.txt" file content	"" (no content)	"" (no content)	Verify no content in the file

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team# 13

Test Stage: Unit _x_ System __

Test Date: March 22nd

Test Case ID#: AL4

Name(s) of Testers: Khalid Qasim

Test Description:

This test verifies if the add_allocation_table method correctly formats and adds the allocation table to the log for a CPL election with a tie, this is a visual test

Filename: main.cpp
Testname: NA
Functions: add_allocation_table()

Automated: yes___ no _X__

Results: Pass __X___ Fail_____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Run the program from main on 3_person_tie_cpl.csv and add to the AuditLog				
2	select 'y' to generate audit file				
3	Review the data written to audit file against expected outputs for match		True	True	

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team# 13

Test Stage: Unit _x_ System __ **Test Date: March 22nd**

Test Case ID#: AL5 **Name(s) of Testers: Khalid Qasim**

Test Description:

This test verifies if the add_allocation_table method correctly formats and adds the allocation table to the log for an OPL election with ties, this is a visual test

Filename: main.cpp
Testname: NA
Functions: add_allocation_table()

Automated: yes___ no _X__

Results: Pass __X__ Fail_____

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Run the program from main on sys_test2_opl.csv and add to the AuditLog				
2	select 'y' to generate audit file				
3	Review the data written to audit file against expected outputs for match		True	True	
4					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team# 13

Test Stage: Unit _x_ System __ **Test Date:** March 22nd

Test Case ID#: AL6 **Name(s) of Testers:** Khalid Qasim

Test Description:

This test verifies if the tie breaker data is properly sent to the audit log for a CPL election, this is a visual test

Filename: main.cpp
Testname: NA
Functions: add_line(), calculate_seats_per_party()

Automated: yes no X

Results: Pass X Fail

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Run the program from main on 3_person_tie_cpl.csv and add to the AuditLog				
2	select 'y' to generate audit file				
3	Review the data written to audit file against expected		True	True	

	outputs for match				
4					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team# 13

Test Stage: Unit _x_ System __ **Test Date:** March 22nd

Test Case ID#: AL7 **Name(s) of Testers:** Khalid Qasim

Test Description:

This test verifies if the tie breaker data is properly sent to the audit log for a OPL election, this is a visual test

Filename: main.cpp
Testname: NA
Functions: add_line(), calculate_seats_per_party()

Automated: yes___ no _X__

Results: Pass Fail X

Preconditions for Test:

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Run the program from main on sys_test2_opl.csv and add to the AuditLog				
2	select 'y' to generate audit file				
3	Review the data written to audit file against expected outputs for match		True	False	See buglist, we are currently unable to send our opl tie-breaker data to the auditlog
4					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team# 13**

Test Stage: Unit _x_ System __ **Test Date: March 22nd**

Test Case ID#: AL8 **Name(s) of Testers: Khalid Qasim**

Test Description:
This test verifies if the write_to_file method correctly write the current log to a specified file

Filename: AuditLogUnitTest.cpp
Testname: AuditLogTest, WriteToFileTest
Functions: write_to_file()

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: Audit Log object instantiated and test directory exists

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call add_line method with testLine	testLine = "Test line for WriteToFileTest";	N/A	N/A	
2	Write the log content to a file	Filename = "WriteToFileTest.txt"	N/A	N/A	
3	Construct a path to the file	testDirectory and Filename = "WriteToFileTest.txt"	N/A	N/A	
4	Read the file content to a string	Path to "WriteToFileTest.txt"	N/A	N/A	
5	Compare file results with expected results	"WriteToFileTest.txt" file content	testLine + "\n"	testLine + "\n"	

Post condition(s) for Test:

Test Stage: Unit _X_ System __

Test Date: 3/26/24

Test Case ID#: OPL_ED_Display1

Name(s) of Testers: Connell Hagen

Test Description:
Tests the display() function

setup with:
ElectionData* std_case_1 =
ElectionDataParser::create_election("testing/test_data/2_party_opl.csv");
std_case_1->display();

Filename: OPLElectionDataUnitTest.cpp
Testname: OPLElectionDataUnitTest, Display
Functions: display()

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up an OPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create OPLElectionData Object	testing/test_data/2_party_opl.csv	std_case_1 != nullptr	std_case_1 != nullptr	
2	Display Election results	terminal output	6 Republican: > 4 Alawa - WINNER 2 Etta 3 Democrat: > 2 Pike - WINNER 1 Lucy 0 Beiye	6 Republican: > 4 Alawa - WINNER 2 Etta 3 Democrat: > 2 Pike - WINNER 1 Lucy 0 Beiye	

Post condition(s) for Test:

`display()` outputs all `to_string()` representations of its aggregated `Party`s to the terminal. All `Candidate`s within the same party are also sorted by number of votes received.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: OPL_ED_Display2 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the display() function's performance

setup with:
clock_t t = clock();
ElectionData* opl_100000 =
ElectionDataParser::create_election("testing/test_data/100000_votes_opl.csv");
opl_100000->display();
const double work_time = (clock() - t) / double(CLOCKS_PER_SEC);

Filename: OPLElectionDataUnitTest.cpp
Testname: OPLElectionDataUnitTest, Display
Functions: display()

Automated: yes_X_ no ___

Results: Pass ___X_ Fail _____

Preconditions for Test: The ElectionDataParser create_election() function properly sets up an OPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Start Timer				
2	Create CPLElectionData Object	testing/test_data/100000_votes_opl.csv	opl_100000 != nullptr	opl_100000 != nullptr	The data will be corrupt if an election is created before this current election is, as it is in the test file. This is a bug currently in the buglist.

3	Display Election results	terminal output	69997 Republican: > 49995 Alawa - WINNER 20002 Etta 29994 Democrat: > 19993 Pike - WINNER 10001 Lucy 0 Beiye	69997 Republican: > 49995 Alawa - WINNER 20002 Etta 29994 Democrat: > 19993 Pike - WINNER 10001 Lucy 0 Beiye	
4	Check Timer	work_time	work_time <= 4 * 60	work_time <= 4 * 60	

Post condition(s) for Test:

`display()` outputs all `to_string()` representations of its aggregated `Party`s to the terminal. A 100,000 vote election can be completely tabulated within 4 minutes.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: OPL_ED_AuditLog1 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the generate_audit_log() function

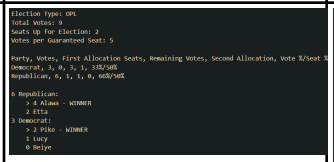
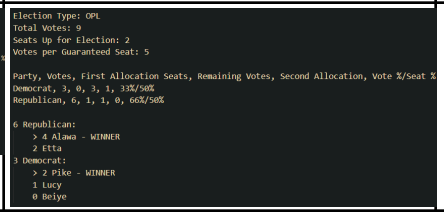
setup with:
ElectionData* test =
ElectionDataParser::create_election("testing/test_data/2_party_opl.csv");

Filename: n/a
Testname: OPLElectionDataUnitTest, AuditLog
Functions: generate_audit_file()

Automated: yes__ no _X_

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up an OPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create OPLElectionData Object	testing/test_data/2_party_opl.csv	test != nullptr	test != nullptr	
2	Generate Audit File	file output			

Post condition(s) for Test:

`generate_audit_file()` outputs a header including the type of election and basic statistics relating to it, all ties that were broken during the calculations, a table with a breakdown of the calculation of seat awarding, and all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: OPL_ED_AuditLog2 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the generate_audit_log() function

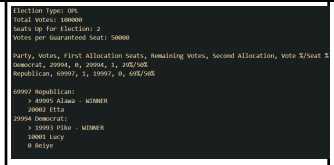
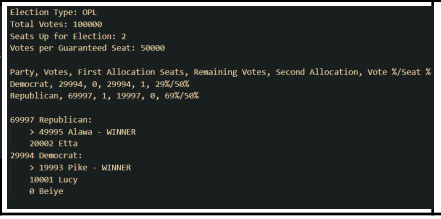
setup with:
ElectionData* test =
ElectionDataParser::create_election("testing/test_data/100000_opl.csv");

Filename: n/a
Testname: OPLElectionDataUnitTest, AuditLog
Functions: generate_audit_file()

Automated: yes__ no _X_

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up an OPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create OPLElectionData Object	testing/test_data/100000_opl.csv	test != nullptr	test != nullptr	
2	Generate Audit File	file output			

Post condition(s) for Test:

`generate_audit_file()` outputs a header including the type of election and basic statistics relating to it, all ties that were broken during the calculations, a table with a breakdown of the calculation of seat awarding, and all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System

Team #13

Test Stage: Unit _X_ System __

Test Date: 3/26/24

Test Case ID#: CPL_ED_Display1

Name(s) of Testers: Connell Hagen

Test Description:
Tests the display() function

setup with:
ElectionData* cpl_1p =
ElectionDataParser::create_election("testing/test_data/1_person_cpl.csv");
cpl_1p->display();

Filename: CPLElectionDataUnitTest.cpp
Testname: CPLElectionDataUnitTest, Display
Functions: display()

Automated: yes_X_ no ___

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create CPLElectionData Object	testing/test_data/1_person_cpl.csv	cpl_1p != nullptr	cpl_1p != nullptr	

2	Display Election results	terminal output	2 Democratic: > Gary - WINNER	2 Democratic: > Gary - WINNER	

Post condition(s) for Test:

`display()` outputs all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: CPL_ED_Display2 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the display() function

setup with:
ElectionData* std_case_1 =
ElectionDataParser::create_election("testing/test_data/sys_test3_cpl.csv");
std_case_1->display();

Filename: CPLElectionDataUnitTest.cpp
Testname: CPLElectionDataUnitTest, Display
Functions: display()

Automated: yes_X_ no ___

Results: Pass ___ X_ Fail _____

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create CPLElectionData Object	testing/test_data/sys_test3_cpl.csv	std_case_1 != nullptr	std_case_1 != nullptr	

2	Display Election results	terminal output			

Post condition(s) for Test:

`display()` outputs all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: CPL_ED_Display3 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the display() function's performance

setup with:
clock_t t = clock();
ElectionData* cpl_100000 =
ElectionDataParser::create_election("testing/test_data/100000_votes_cpl.csv");
cpl_100000->display();
const double work_time = (clock() - t) / double(CLOCKS_PER_SEC);

Filename: CPLElectionDataUnitTest.cpp
Testname: CPLElectionDataUnitTest, Display
Functions: display()

Automated: yes_X_ no ___

Results: Pass ___X_ Fail_____

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Start Timer				
2	Create CPLElectionData Object	testing/test_data/100000_votes_cpl.csv	cpl_100000 != nullptr	cpl_100000 != nullptr	

3	Display Election results	terminal output	30257 Republican: > Allen - WINNER Nikki Taihui 29664 Democratic: > Joe - WINNER Sally Ahmed 20022 Reform: > Xinyue - WINNER Nikita 10516 Independent: Mike 10029 Green: Bethany 0 New Wave: Sarah	30257 Republican: > Allen - WINNER Nikki Taihui 29664 Democratic: > Joe - WINNER Sally Ahmed 20022 Reform: > Xinyue - WINNER Nikita 10516 Independent: Mike 10029 Green: Bethany 0 New Wave: Sarah	
4	Check Timer	work_time	work_time <= 4 * 60	work_time <= 4 * 60	

Post condition(s) for Test:

`display()` outputs all `to_string()` representations of its aggregated `Party`s to the terminal. A 100,000 vote election can be completely tabulated within 4 minutes.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: CPL_ED_AuditLog1 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the generate_audit_log() function

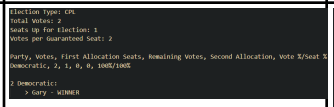
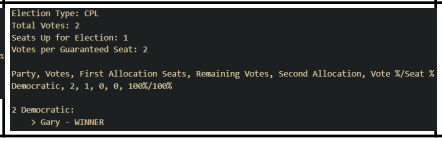
setup with:
ElectionData* test =
ElectionDataParser::create_election("testing/test_data/1_person_cpl.csv");

Filename: n/a
Testname: CPLElectionDataUnitTest, AuditLog
Functions: generate_audit_file()

Automated: yes__ no _X_

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create CPLElectionData Object	testing/test_data/1_person_cpl.csv	test != nullptr	test != nullptr	
2	Generate Audit File	file output			

Post condition(s) for Test:

`generate_audit_file()` outputs a header including the type of election and basic statistics relating to it, all ties that were broken during the calculations, a table with a breakdown of the calculation of seat awarding, and all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: CPL_ED_AuditLog2 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the generate_audit_log() function

setup with:
ElectionData* test =
ElectionDataParser::create_election("testing/test_data/sys_test3_cpl.csv");

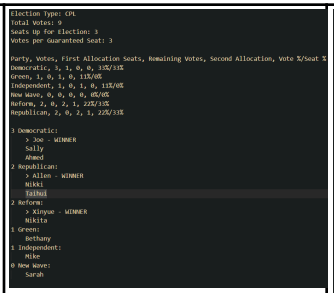
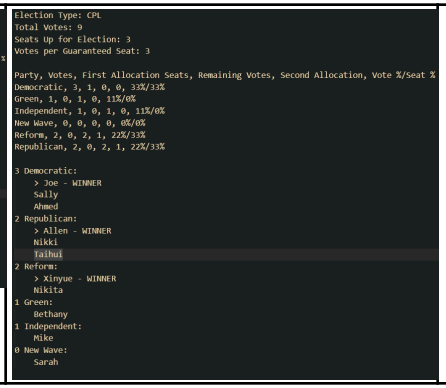
Filename: n/a
Testname: CPLElectionDataUnitTest, AuditLog
Functions: generate_audit_file()

Automated: yes__ no _X_

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create CPLElectionData Object	testing/test_data/sys_test3_cpl.csv	test != nullptr	test != nullptr	

2	Generate Audit File	file output			

Post condition(s) for Test:

`generate_audit_file()` outputs a header including the type of election and basic statistics relating to it, all ties that were broken during the calculations, a table with a breakdown of the calculation of seat awarding, and all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Voting System **Team #13**

Test Stage: Unit _X_ System __ **Test Date: 3/26/24**

Test Case ID#: CPL_ED_AuditLog3 **Name(s) of Testers: Connell Hagen**

Test Description:
Tests the generate_audit_log() function

setup with:
ElectionData* test =
ElectionDataParser::create_election("testing/test_data/100000_votes_cpl.csv.csv"
);

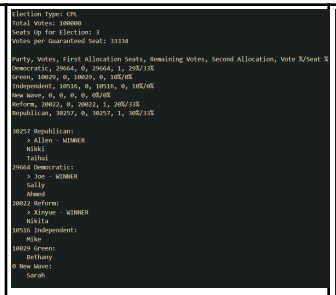
Filename: n/a
Testname: CPLElectionDataUnitTest, AuditLog
Functions: generate_audit_file()

Automated: yes__ no _X__

Results: Pass X Fail

Preconditions for Test: The ElectionDataParser create_election() function properly sets up a CPL election according to all of its pre- and post-conditions. The winners of the election were properly calculated, and set within the Candidate objects.

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create CPLElectionData Object	testing/test_data/100000_votes_cpl.csv.csv	test != nullptr	test != nullptr	

2	Generate Audit File	file output			

Post condition(s) for Test:

`generate_audit_file()` outputs a header including the type of election and basic statistics relating to it, all ties that were broken during the calculations, a table with a breakdown of the calculation of seat awarding, and all `to_string()` representations of its aggregated `Party`s to the terminal.

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 1

Test Description: Ballot file with 1 person for a CPL election.

repo-Team13/Project1/testing/testing_data/1_person_cpl.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("1_person_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 2

Test Description: Ballot file with 1 person for a OPL election.

repo-Team13/Project1/testing/testing_data/1_person_opl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("1_person_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 3

Test Description: Ballot file with 2 parties and multiple candidates for an OPL Election

repo-Team13/Project1/testing/testing_data/2_party_opl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes
2	Election is created with correct file name	Election _Data e = Create_Election("2_party_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 4

Test Description: Ballot file with 2 people, one in each party, and they tied.

repo-Team13/Project1/testing/testing_data/2_people_cpl_tie.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes

2	Election is created with correct file name	Election _Data e = Create_Election("2_people_cpl_tie.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 5

Test Description: Ballot file with 3 people, all in different parties, and they tied

repo-Team13/Project1/testing/testing_data/3_person_tie_cpl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("3_person_tie_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					

5					

Post condition(s) for Test:

Project Name: Project 1: Voting System Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 6

Test Description: Ballot file with 100,000 votes for a CPL Election.

repo-Team13/Project1/testing/testing_data/100000_votes_cpl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election_Data e = Create_Election("100000_votes_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024
Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 7
Test Description: Ballot file with 100,000 votes for a OPL Election.

repo-Team13/Project1/testing/testing_data/100000_votes_opl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election_Data e = Create_Election("100000_votes_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024
Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 8

Test Description: Ballot file with 3 parties, 6 candidates, and no ties

repo-Team13/Project1/testing/testing_data/sys_test1_opl.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test1_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 9

Test Description: Ballot file with 3 parties, 8 candidates, and no ties

repo-Team13/Project1/testing/testing_data/sys_test2_opl.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test2_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 10

Test Description: Ballot file with 6 parties, 9 votes, and a quota of 3.

repo-Team13/Project1/testing/testing_data/sys_test3_cpl.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step	Test Step	Test	Expected	Actual	

# 1	Description	Data	Result	Result	Notes
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test3_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 11

Test Description: Ballot file with 4 candidates, 4 parties, and no ties

repo-Team13/Project1/testing/testing_data/sys_test4_cpl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test4_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	

4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 12

Test Description: Ballot file with a quota of 3, 2 parties, 13 votes, and all but 1 vote go to one party.

repo-Team13/Project1/testing/testing_data/sys_test5_overload_cpl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes
2	Election is created with correct file name	Election_Data e = Create_Election("sys_test5_overload_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 13

Test Description: Ballot file with 4 candidates, 4 parties, and tying for OPL

repo-Team13/Project1/testing/testing_data/sys_test6_opl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test6_overloadseats_opl.csv")			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System **Team#13**

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 14

Test Description: Ballot file with a quota of 4, 8 votes, and 3 parties where every vote goes to the same party for CPL

repo-Team13/Project1/testing/testing_data/sys_test7_votesforsingleparty_cpl.csv

Automated: yes X no

Results: Pass X Fail

Preconditions for Test: None

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1					
2	Election is created with correct file name	Election _Data e = Create_Election("sys_test7_votesforsingleparty_cpl.csv")			
3	Election results are displayed into the terminal	e.display()	CPL Display test passes	CPL Display test passes	
4					
5					

Post condition(s) for Test:

Project Name: Project 1: Voting System — Team#13

Test Stage: Unit __ System X

Test Date: 22/03/2024

Name(s) of Testers: Michael Mulhall, Grant Oie, Connell Hagan, and Khalid Qasim

Test Case ID#: S 15

Test Description: Ballot file with a quota of 4, 8 votes, and 3 parties where every vote goes to the same party for OPL

repo-Team13/Project1/testing/testing_data/sys_test8_votesforsinglecandidate_opl.csv

Automated: yes X no ___

Results: Pass X Fail

Preconditions for Test: None

Step # 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes
2	Election is created with correct file name	Election _Data e = Create_Election(“sys_test8_votesforsinglecandidate_opl.csv”)			
3	Election results are displayed into the terminal	e.display()	OPL Display test passes	OPL Display test passes	
4					
5					

Post condition(s) for Test: