

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ARV_1A

Name(s) of Testers: Derrick, Bethany

Test Description: Testing a valid index to ensure method properly updates remainingVotes array

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, index01, which will be a valid index to modify within the created CPL object's remainingVotes array	index01 = 1	int was created successfully	int was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will represent the ArrayList that should result	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Dem", new int[] { 0, 0 }))); expected1.add(new ArrayList<>(Arrays.asList("Rep", new int[] { 1, 0 }))); expected1.add(new ArrayList<>(Arrays.asList("Green", new int[] { 0, 0 }))); expected1.add(new ArrayList<>(Arrays.asList("Lib", new int[] { 0, 0 })));	Object was created successfully	Object was created successfully	
3	Call the adjustRemainingVotes method on the cpl01 at index01	cpl01.adjustRemainingVotes(index01);	remainingVotes was successfully modified	remainingVotes was successfully modified	
4	Assert that the cpl01 object's remainingVotes field has been properly updated	assertEquals(cpl01.remainingVotes, expectedA);	True	True	

Post condition(s) for Test:

The CPL object has a correctly updated remainingVotes field, which equals the
ArrayList<ArrayList<Object>> expectedA

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_ARV_1B

Name(s) of Testers: Derrick

Test Description: Testing an invalid (negative) index to ensure method does not alter the cpl01's remainingVotes array

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, index02, which will be an invalid index that will be used to test whether the remainingVotes array gets incorrectly modified or not	index02 = -1	int was created successfully	int was created successfully	
3	Call the adjustRemainingVotes method on the cpl01 at index02	assertThrows(IOException.class, () -> cpl01.adjustRemainingVotes(index02));	IOException	IOException	

Post condition(s) for Test:

An IOException is thrown

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ARV_1C

Name(s) of Testers: Derrick

Test Description: Testing an invalid (too large) index to ensure method does not alter the cpl01's remainingVotes array

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, index03, which will be an invalid index that will be used to test whether the remainingVotes array gets incorrectly modified or not	index03 = 15	int was created successfully	int was created successfully	
2	Call the adjustRemainingVotes method on the cpl01 at index03	assertThrows(IOException.class, () -> cpl01.adjustRemainingVotes(index03));	IOException	IOException	

Post condition(s) for Test:

An IOException is thrown

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ARV_1D

Name(s) of Testers: Derrick

Test Description: Testing a valid index to ensure method subtracts the correct amount from the remainingVotes array at the given index

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, index04, which will be a valid index to modify within the created CPL object's remainingVotes array	index04 = 3	int was created successfully	int was created successfully	
2	Define a new int, expectedVal, which will represent the value that the cpl01's remainingVotes array at index04 should be	expectedVal = (int)cpl01.remainingVotes.get(index04).get(1) - ((int)cpl01.fileData.getNumberBallots()/((int)cpl01.fileData.getNumberSeats()));	Object was created successfully	Object was created successfully	
3	Call the adjustRemainingVotes method on the cpl01 at index04	cpl01.adjustRemainingVotes(index04);	remainingVotes was successfully modified	remainingVotes was successfully modified	
4	Assert that the cpl01 object's remainingVotes field at index04 matches the expected result	assertEquals(cpl01.remainingVotes.get(index04).get(1), expectedVal);	True	True	

Post condition(s) for Test:

The CPL object properly updates the remainingVotes field, and the value of cpl01.remainingVotes[index04] equals the expected value

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_DCV_2A

Name(s) of Testers: Derrick

Test Description: Ensuring two array lists are the same after the method is called

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new object of type ArrayList<ArrayList<Object>> object, expected1, which will be copied	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Sarah", 50))); expected1.add(new ArrayList<>(Arrays.asList("Joe", 20))); expected1.add(new ArrayList<>(Arrays.asList("Bill", 13))); expected1.add(new ArrayList<>(Arrays.asList("Timothey", 50)));	Object was created successfully	Object was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, copied1, using the deepCopyVotes() method	ArrayList<ArrayList<Object>> copied1 = CPL01.deepCopyVotes(expected1);	Object was created successfully	Object was created successfully	
3	Assert that the expected1 ArrayList is equivalent to the copied ArrayList, copied1	assertEquals(copied1, expected1);	True	True	

Post condition(s) for Test:

The copied1 ArrayList should be equivalent to the expected1 ArrayList.

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_DCV_2B

Name(s) of Testers: Derrick

Test Description: Ensure variables that are modified in original ArrayList do not affect the copied ArrayList

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new object of type ArrayList<ArrayList<Object>> object, expected1, which will be copied	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Sarah", 50))); expected1.add(new ArrayList<>(Arrays.asList("Joe", 20))); expected1.add(new ArrayList<>(Arrays.asList("Bill", 13))); expected1.add(new ArrayList<>(Arrays.asList("Timothy", 50)));	Object was created successfully	Object was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, copied1, using the deepCopyVotes() method	ArrayList<ArrayList<Object>> copied1 = CPL01.deepCopyVotes(expected1);	Object was created successfully	Object was created successfully	
3	Assert that the expected1 ArrayList is equivalent to the copied ArrayList, copied1	assertEquals(copied1, expected1);	True	True	

Post condition(s) for Test:

The copied1 ArrayList does not get modified after modifying the expected1 ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_DCV_2C

Name(s) of Testers: Derrick

Test Description: Properly copying an empty ArrayList to another

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new object of type ArrayList<ArrayList<Object>> object, expected2, which will be copied	ArrayList<ArrayList<Object>> expected2 = new ArrayList<ArrayList<Object>>();	Object was created successfully	Object was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, copied2, using the deepCopyVotes() method	ArrayList<ArrayList<Object>> copied2 = CPL01.deepCopyVotes(expected2);	Object was created successfully	Object was created successfully	
3	Assert that the expected2 ArrayList is equivalent to the copied ArrayList, copied2	assertEquals(copied2, expected2);	True	True	

Post condition(s) for Test:

The empty expected2 ArrayList is equal to the copied2 ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_DCV_2D

Name(s) of Testers: Derrick

Test Description: Ensure modifying the original empty list will not affect the copy of it

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new object of type ArrayList<ArrayList<Object>> object, expected2, which will be copied	ArrayList<ArrayList<Object>> expected2 = new ArrayList<ArrayList<Object>>();	Object was created successfully	Object was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, copied2, using the deepCopyVotes() method	ArrayList<ArrayList<Object>> copied2 = CPL01.deepCopyVotes(expected2);	Object was created successfully	Object was created successfully	
3	Add a new item to the expected2 ArrayList	expected2.add(new ArrayList<>(Arrays.asList("Sarah", 50)));	Successfully added item to list	Successfully added item to list	
4	Assert that the expected2 ArrayList is equivalent to the copied ArrayList, copied2	assertEquals(copied2, expected2);	True	True	

Post condition(s) for Test:

The copied1 ArrayList does not get modified after modifying the expected1 ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_GR_3A

Name(s) of Testers: Derrick

Test Description: Check if generated random number is within the specified range, 0 to 10, inclusive

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new float, randomValue, which will be defined using CPL01's generateRandom() function	randomValue = CPL01.generateRandom();	float was created successfully	float was created successfully	
2	Assert that the randomly generated value is greater than 0	assertTrue("Generated value should be >= 0", randomValue >= 0);	True	True	
3	Assert that the randomly generated value is less than 10	assertTrue("Generated value should be < 10", randomValue < 10);	True	True	

Post condition(s) for Test:

The randomly generated number is within the range 0 to 10, inclusive

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit ☒ System ☐

Test Date: 3/25/2024

Test Case ID#: CPL_GR_3B

Name(s) of Testers: Derrick

Test Description: Ensure multiple calls to the method generate different values

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes ☒ No ☐

Results: Pass ☒ Fail ☐

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new float, previousRandomValue, which will be set using CPL01's generateRandom() method	float previousRandomValue = CPL01.generateRandom();	float was created successfully	float was created successfully	
2	Define a new boolean, allDifferent, and initialize it to 'true'. This will be used to determine if multiple calls to generateRandom() generate different values	boolean allDifferent = true;	boolean was created successfully	boolean was created successfully	
3	Call generateRandom() 100 times and ensure that the same value is never generated twice in a row by generating a random value and assigning it to the float newRandomValue and comparing it to previousRandomValue 100 times	<pre>for (int i = 0; i < 100; i++) { float newRandomValue = CPL01.generateRandom(); if (newRandomValue == previousRandomValue) { allDifferent = false; break; } previousRandomValue = newRandomValue; }</pre>	allDifferent = true	allDifferent = true	
4	Assert that the allDifferent boolean remains true	assertTrue("generateRandom() should generate different values (almost always)", allDifferent);	True	True	

Post condition(s) for Test:

The generated float previousRandomValue is never equivalent to the newly generated newRandomValue

Project Name: Project 1: Voting System

Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_GR_3C

Name(s) of Testers: Derrick

Test Description: Ensure the random numbers are actually distributed evenly over a large set and not pseudorandom, testing for 90% accuracy

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a 10 integers, each used to find if a randomly generated number falls within each of the ranges	int between0and1 = 0; int between1and2 = 0; int between2and3 = 0; int between3and4 = 0; int between4and5 = 0; int between5and6 = 0; int between6and7 = 0; int between7and8 = 0; int between8and9 = 0; int between9and10 = 0;	integers were created successfully	integers were created successfully	
2	Generate 10,000 random numbers and add one to each range that they fall under	<pre>for (int i = 0; i < 10000; i++) { float rv = CPL01.generateRandom(); if (rv < 1) { between0and1++; } else if (rv < 2) { between1and2++; } else if (rv < 3) { between2and3++; } else if (rv < 4) { between3and4++; } else if (rv < 5) { between4and5++; } else if (rv < 6) { between5and6++; } else if (rv < 7) { between6and7++; } else if (rv < 8) { between7and8++; } else if (rv < 9) { between8and9++; } else if (rv < 10) { between9and10++; } }</pre>	Loop finished successfully	Loop finished successfully	

3	Ensure that each of the 10 integers created are at minimum 900	<pre> assertTrue("at least 900 should be in the range 0 to 1", between0and1 >=900); assertTrue("at least 900 should be in the range 1 to 2", between1and2 >=900); assertTrue("at least 900 should be in the range 2 to 3", between2and3 >=900); assertTrue("at least 900 should be in the range 3 to 4", between3and4 >=900); assertTrue("at least 900 should be in the range 4 to 5", between4and5 >=900); assertTrue("at least 900 should be in the range 5 to 6", between5and6 >=900); assertTrue("at least 900 should be in the range 6 to 7", between6and7 >=900); assertTrue("at least 900 should be in the range 7 to 8", between7and8 >=900); assertTrue("at least 900 should be in the range 8 to 9", between8and9 >=900); assertTrue("at least 900 should be in the range 9 to 10", between9and10 >=900); </pre>	True (* 10)	True (* 10)	
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Post condition(s) for Test:

Each of the ranges are generated at minimum 900 times, ensuring even distribution of randomly generated numbers

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_BT_4A

Name(s) of Testers: Derrick

Test Description: Test the breakTie function with a valid number of ties

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, numTie01, which will be a valid number of ties which much be broken using the CPL object	numTie01 = 3	int was created successfully	int was created successfully	
2	Create a new int using cpl01's breakTie function with numTie01 as the parameter	int result01 = cpl01.breakTie(numTie01);	int was created successfully	int was created successfully	
3	Assert that the resulting index should be between 0 and 4	assertTrue("resulting index should be between 0 and 4 inclusive", result01 >= 0 && result01 < numTie01);	True	True	

Post condition(s) for Test:

The CPL object correctly breaks a tie when using a valid number of ties into the breakTie method

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_BT_4B

Name(s) of Testers: Derrick

Test Description: Test the breakTie function with an invalid number of ties (0)

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, numTie02, which will be an invalid number of ties	numTie02 = 0	int was created successfully	int was created successfully	
2	Create a new int using cpl01's breakTie function with numTie02 as the parameter	int result02 = cpl01.breakTie(numTie02);	int was created successfully	int was created successfully	
3	Assert that the produced value is -1, indicating failure	assertEquals(result02, -1);	True	True	

Post condition(s) for Test:

The breakTie method returns -1 indicating the input number of ties was invalid

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_BT_4C

Name(s) of Testers: Derrick

Test Description: Test the breakTie function with an invalid number of ties (5, too large)

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, numTie03, which will be an invalid number of ties	numTie02 = 5	int was created successfully	int was created successfully	
2	Create a new int using cpl01's breakTie function with numTie03 as the parameter	int result03 = cpl01.breakTie(numTie03);	int was created successfully	int was created successfully	
4	Assert that the produced value is -1, indicating failure	assertEquals(result03, -1);	True	True	

Post condition(s) for Test:

The breakTie method returns -1 indicating the input number of ties was invalid

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_BT_4D

Name(s) of Testers: Derrick

Test Description: Test the breakTie function with 1 tie

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new int, numTie04, which is 1 and should cause the breakTie method to return 0	numTie04 = 1	int was created successfully	int was created successfully	
2	Create a new int using cpl01's breakTie function with numTie04 as the parameter	int result04 = cpl01.breakTie(numTie04);	int was created successfully	int was created successfully	
3	Assert that the resulting int is 0	assertEquals(result04, 0);	True	True	

Post condition(s) for Test:

The breakTie method returns 0

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_AW_5A

Name(s) of Testers: Derrick

Test Description: Tests to see whether the list is empty on start and if calling it with a winner adds the correct winner

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new ArrayList, winOrderExpected, which is empty at first	ArrayList<String> winOrderExpected = new ArrayList<String>();	ArrayLilst was created successfully	ArrayList was created successfully	
2	Ensure the created cpl01 object has an initially empty ArrayList, such as the on which was just initialized	assertEquals(winOrderExpected, cpl01.winOrder);	True	True	
3	Add a winner (party name) to the winOrderExpected ArrayList	winOrderExpected.add("Lib");	Item successfully added	Item successfully added	
4	Use the addWinner function using the index of the (party name) added in winorderExpected ("Lib")	cpl01.addWinner(3);	Item successfully added	Item successfully added	

5	Assert that the winOrderExpected and cpl01's winOrder ArrayLists are equal	assertEquals(winOrderExpected, cpl01.winOrder);	True	True	
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Post condition(s) for Test:

The CPL's winOrder is equivalent to the winOrderExpected ArrayList

Project Name: Project 1: Voting System

Test Stage: Unit x System

Test Date: **3/25/2024**

Test Case ID#: CPL_AW_5B

Name(s) of Testers: Derrick

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes No

Test Description: Ensure when trying to add an index that is too large will cause an exception to be thrown

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Try to add a winner at an invalid index (5) using the addWinner function, see if an exception is thrown	<code>assertThrows(IOException.class, () -> cpl01.addWinner(5));</code>	IOException	IOException	

Post condition(s) for Test:

The winOrder for the cpl01 object is unchanged

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_AW_5C

Name(s) of Testers: Derrick

Test Description: Ensure when trying to add an index that is negative will cause an exception to be thrown

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Try to add a winner at an invalid index (-1) using the addWinner function, see if an exception is thrown	assertThrows(IOException.class, () -> cpl01.addWinner(-1));	IOException	IOException	

Post condition(s) for Test:

The winOrder for the cpl01 object is unchanged

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ASA_6A

Name(s) of Testers: Derrick

Test Description: Test whether adding a seat at a specified index updates value to 1 from empty seat allocation array

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new boolean, 'firstRound' as true	boolean firstRound = true;	boolean was created successfully	boolean was created successfully	
2	Define a new integer, index01, as 1	int index01 = 1;	int was created successfully	int was created successfully	
3	Initialize a new ArrayList with the expected values	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Rep", new int[] {1, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Green", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Lib", new int[] {0, 0})));	Object was created successfully	Object was created successfully	
4	Call the adjustSeatAllocation on the cpl1 object with the parameters index01 and boolean firstRound	cpl01.adjustSeatAllocation(index01, firstRound);	Seats were adjusted successfully	Seats were adjusted successfully	

	Assert that the adjustSeatAllocation function did not change cpl01's seatAllocation size	assertEquals(cpl01.seatAllocation.size(), expected1.size());	True	True	
	Assert that each index of cpl01's seatAllocation is equivalent to the expected1	<pre> for (int i = 0; i < expected1.size(); i++) { assertEquals(expected1.get(i).size(), expected1.get(i).size()); assertEquals(expected1.get(i).get(0), expected1.get(i).get(0)); assertEquals((int[])expected1.get(i).get(1), (int[])expected1.get(i).get(1)); } </pre>	True	True	

Post condition(s) for Test:

The cpl01's seatAllocation is equivalent to the expected1's ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ASA_6B

Name(s) of Testers: Derrick

Test Description: Test that adding in a second round to the same object works

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize an int[] array 'array'	int[] array = (int[]) expected1.get(1).get(1);	Array was created successfully	Array was created successfully	
2	Increment the first index of 'array'	array[1]++;	Value incremented successfully	Value incremented successfully	
3	Define a new boolean, 'firstRound' as false	boolean firstRound = false;	boolean was created successfully	boolean was created successfully	
4	Define a new integer, index01, as 1	int index01 = 1;	int was created successfully	int was created successfully	
5	Initialize a new ArrayList with the expected values	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<> (Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<> (Arrays.asList("Rep", new int[] {1, 0}))); expected1.add(new ArrayList<> (Arrays.asList("Green", new int[] {0, 0})));	Object was created successfully	Object was created successfully	

		expected1.add(new ArrayList<>{Arrays.asList("Lib", new int[] {0, 0})});			
6	Call the adjustSeatAllocation on the cpl1 object with the parameters index01 and boolean firstRound	cpl01.adjustSeatAllocation(index01, firstRound);	Seats were adjusted successfully	Seats were adjusted successfully	
7	Assert that the adjustSeatAllocation function did not change cpl01's seatAllocation size	assertEquals(cpl01.seatAllocation.size(), expected1.size());	True	True	
8	Assert that each index of cpl01's seatAllocation is equivalent to the expected1	<pre> for (int i = 0; i < expected1.size(); i++) { assertEquals(expected1.get(i).size(), expected1.get(i).size()); assertEquals(expected1.get(i).get(0), expected1.get(i).get(0)); assertEquals((int[])expected1.get(i).get(1), (int[])expected1.get(i).get(1)); } </pre>	True	True	

Post condition(s) for Test:

The cpl01's seatAllocation is equivalent to the expected1's ArrayList after adding a second round

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ASA_6C

Name(s) of Testers: Derrick

Test Description: Test that the same index can be incremented twice

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize an int[] array 'array'	int[] array = (int[]) expected1.get(1).get(1);	Array was created successfully	Array was created successfully	
2	Increment the first index of 'array' twice	array[1]++; array[1]++	Value incremented successfully	Value incremented successfully	
3	Define a new boolean, 'firstRound' as false	boolean firstRound = false;	boolean was created successfully	boolean was created successfully	
4	Define a new integer, index01, as 1	int index01 = 1;	int was created successfully	int was created successfully	

5	Initialize a new ArrayList with the expected values	<pre> ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<> (Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<> (Arrays.asList("Rep", new int[] {1, 0}))); expected1.add(new ArrayList<> (Arrays.asList("Green", new int[] {0, 0}))); expected1.add(new ArrayList<> (Arrays.asList("Lib", new int[] {0, 0}))); </pre>	Object was created successfully	Object was created successfully	
6	Call the adjustSeatAllocation on the cpl1 object with the parameters index01 and boolean firstRound	<pre> cpl01.adjustSeatAllocation(index01, firstRound); </pre>	Seats were adjusted successfully	Seats were adjusted successfully	
7	Assert that the adjustSeatAllocation function did not change cpl01's seatAllocation size	<pre> assertEquals(cpl01.seatAllocation.size(), expected1.size()); </pre>	True	True	
8	Assert that each index of cpl01's seatAllocation is equivalent to the expected1	<pre> for (int i = 0; i < expected1.size(); i++) { assertEquals(expected1.get(i).size(), expected1.get(i).size()); assertEquals(expected1.get(i).get(0), expected1.get(i).get(0)); assertEquals((int[])expected1.get(i).get(1), (int[])expected1.get(i).get(1)); } </pre>	True	True	

Post condition(s) for Test:

The cpl01's seatAllocation is equivalent to the expected1's ArrayList after incrementing the same index twice

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ASA_6D

Name(s) of Testers: Derrick

Test Description: Testing with an invalid index (-1).
IOException should be thrown

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Define a new integer, index02, as -1	int index02 = -1;	int was created successfully	int was created successfully	
2	Initialize a new ArrayList with the expected values	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Rep", new int[] {1, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Green", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Lib", new int[] {0, 0})));	Object was created successfully	Object was created successfully	
3	Call the adjustSeatAllocation on the cpl1 object with the parameters index02 and boolean firstRound	assertThrows(IOException.class, () -> cpl01.adjustSeatAllocation(index03, true));	IOException	IOException	

Post condition(s) for Test:

An IOException is thrown

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ASA_6E

Name(s) of Testers: Derrick

Test Description: Testing with an invalid index (10, too large). seatAllocation array should remain unchanged

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
4	Define a new integer, index03, as -1	int index03 = 10;	int was created successfully	int was created successfully	
5	Initialize a new ArrayList with the expected values	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Rep", new int[] {1, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Green", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Lib", new int[] {0, 0})));	Object was created successfully	Object was created successfully	
6	Call the adjustSeatAllocation on the cpl1 object with the parameters index02 and boolean firstRound	assertThrows(IOException.class, () -> cpl01.adjustSeatAllocation(index03, true));	IOException	IOException	

Post condition(s) for Test:

An IOException is thrown

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_ISA_7A

Name(s) of Testers: Derrick

Test Description: Ensure the resulting array has the correct default values in all fields

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize a new object of type ArrayList<ArrayList<Object>> object, expected1	ArrayList<ArrayList<Object>> expected1 = new ArrayList<ArrayList<Object>>(); expected1.add(new ArrayList<>(Arrays.asList("Dem", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Rep", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Green", new int[] {0, 0}))); expected1.add(new ArrayList<>(Arrays.asList("Lib", new int[] {0, 0})));	Object was created successfully	Object was created successfully	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, result1, using the initializeSeatAllocation() method	ArrayList<ArrayList<Object>> result1 = CPL01.initializeSeatAllocation();	Object was created successfully	Object was created successfully	
3	Compare the sizes of expected1 and results1	assertEquals(expected1.size(), result1.size());	True	True	
4	Manually compare each array is equal at each index because assertEquals compares memory addresses for the int[]s	for (int i = 0; i < expected1.size(); i++) { assertEquals(expected1.get(i).size(), result1.get(i).size()); assertEquals(expected1.get(i).get(0), result1.get(i).get(0)); assertEquals((int[])expected1.get(i).get(1), (int[])result1.get(i).get(1)); }	True	True	

Post condition(s) for Test:

The expected ArrayList should be equal to the result1 ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_FA_8A

Name(s) of Testers: Derrick

Test Description: First allocation test where only 1 seat is available. Ensure it breaks after 1 loop adding no winners as they are all below the remainder

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl02 object	cpl02.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will be the expectedWinOrder	ArrayList<String> expectedWinOrder = new ArrayList<String>();	Object was created successfully	Object was created successfully	
3	Assert that the cpl02 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl02.winOrder);	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_FA_8B

Name(s) of Testers: Derrick

Test Description: Test where one seat is allocated in the round of allocation

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl04 object	cpl04.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Initialize a new object of type ArrayList , which will be the expectedWinOrder	expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
3	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
4	Assert that the cpl04 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl04.winOrder);	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_FA_8C

Name(s) of Testers: Derrick

Test Description: Two seats are allocated in the first round of allocation

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl03 object	cpl03.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Initialize a new object of type ArrayList , which will be the expectedWinOrder	expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
3	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
4	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	

5	Initialize a new int[], expected	int[] expected = new int[] {2,0};	Array was successfully created	Array was successfully created	
6	Assert that the cpl03 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl03.winOrder);	True	True	
7	Initialize a new int[], temp	int[] temp = (int[]) cpl03.seatAllocation.get(0).get(1);	Array was successfully created	Array was successfully created	
8	Assert that the toString of expected equals the toString of temp	assertEquals(Arrays.toString(expected), Arrays.toString(temp));	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_FA_8D

Name(s) of Testers: Derrick

Test Description: All seats allocated in first allocation, should end

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl05 object	cpl05.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Initialize a new object of type ArrayList , which will be the expectedWinOrder	expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
3	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
4	Assert that the cpl05 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl05.winOrder);	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_FA_8E

Name(s) of Testers: Derrick

Test Description: 2 seats aren't allocated to winning party if there's only 1 member

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes x No

Results: Pass x Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl06 object	cpl06.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Initialize a new object of type ArrayList , which will be the expectedWinOrder	expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
3	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
4	Assert that the cpl06 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl06.winOrder);	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_SA_9A

Name(s) of Testers: Derrick

Test Description: No seat given in first allocation,
assigns seat in second to highest party vote count

**Indicate where are you storing the tests (what file)
and the name of the method/functions being used.**
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl02 object	cpl02.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Call secondAllocation on the cpl02 object	cpl02.secondAllocation();	secondAllocation was successfully called	secondAllocation was successfully called	
3	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will be the expectedWinOrder	ArrayList<String> expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
4	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
5	Assert that the cpl02 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl02.winOrder);	True	True	

Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_SA_9B

Name(s) of Testers: Derrick

Test Description: Test where each party should have a seat

Indicate where are you storing the tests (what file)
and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl04 object	cpl04.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Call secondAllocation on the cpl04 object	cpl04.secondAllocation();	secondAllocation was successfully called	secondAllocation was successfully called	
3	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will be the expectedWinOrder	ArrayList<String> expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
4	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
5	Add a party to expectedWinOrder	expectedWinOrder.add("Rep");	Item was successfully added	Item was successfully added	

6	Assert that the cpl04 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl04.winOrder);	True	True	
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Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_SA_9C

Name(s) of Testers: Derrick

Test Description: Two seats are allocated in the first round of allocation

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created containing a valid remainingVotes array

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl03 object	cpl03.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Call secondAllocation on the cpl03 object	cpl03.secondAllocation();	secondAllocation was successfully called	secondAllocation was successfully called	
3	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will be the expectedWinOrder	ArrayList<String> expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
4	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
5	Add a duplicate party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	

6	Assert that the cpl03 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl03.winOrder);	True	True	
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Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_SA_9D

Name(s) of Testers: Derrick

Test Description: Tests that the second seat gets correctly allocated to party that has members available even if they didn't win votes

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Call firstAllocation on the cpl06 object	cpl06.firstAllocation();	firstAllocation was successfully called	firstAllocation was successfully called	
2	Call secondAllocation on the cpl06 object	cpl06.secondAllocation();	secondAllocation was successfully called	secondAllocation was successfully called	
3	Initialize a new object of type ArrayList<ArrayList<Object>> object, which will be the expectedWinOrder	ArrayList<String> expectedWinOrder = new ArrayList<>();	Object was created successfully	Object was created successfully	
4	Add a party to expectedWinOrder	expectedWinOrder.add("Dem");	Item was successfully added	Item was successfully added	
5	Add a party to expectedWinOrder	expectedWinOrder.add("Rep");	Item was successfully added	Item was successfully added	

6	Assert that the cpl06 object's winOrder field equals the expectedWinOrder	assertEquals(expectedWinOrder, cpl06.winOrder);	True	True	
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Post condition(s) for Test:

The CPL object's winOrder field equals the expectedWinOrder ArrayList

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit X System

Test Date: 3/25/2024

Test Case ID#: CPL_SA_9E

Name(s) of Testers: Derrick

Test Description: Handles the case where there is a tie in the second allocation

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: An CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Initialize int 'results' to 0	int results = 0;	int created successfully	int created successfully	
2	Get the result of the election with a tie, record how often Dem wins before Rep, should be about equal	<pre>int results = 0; for(int i=0; i<1000; i++){ CPL cpl = new CPL(testFile); cpl.secondAllocation(); if(cpl.winOrder.get(0).equals("Dem")){ results++; } }</pre>	results added to successfully	results added to successfully	
3	Ensure generated value is between 450 and 550	<pre>assertTrue("Generated value should be between 450 and 550", results<550); assertTrue("Generated value should be between 450 and 550", 450<results);</pre>	True (*2)	True (*2)	

Post condition(s) for Test:

The generated value is between 450 and 550

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_RE_10A

Name(s) of Testers: Derrick

Test Description: Test where one party wins

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes ☒ No

Results: Pass ☒ Fail

Preconditions for Test: A CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Run election and store result in a ResultsData object, result1	ResultsData result1 = cpl1.runElection();	result1 was successfully created	result1 was successfully created	
2	Create new ArrayList, winOrder, and add a party to it	ArrayList<String> winOrder = new ArrayList<>(); winOrder.add("Dem");	Object successfully created	Object successfully created	
3	Assert the created winOrder array equals the winOrder inside of result1	assertEquals(winOrder, result1.getPartyWinOrder());	True	True	

Post condition(s) for Test:

winOrder equals result1.getPartyWinOrder()

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_RE_10B

Name(s) of Testers: Derrick

Test Description: Ensure remaining votes is correct following the ran election in test CPL_RE_10A

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: A CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create new ArrayList, remainingVotes, and add parties along with votes to it	ArrayList<ArrayList<Object>> remainingVotes = new ArrayList<>(); remainingVotes.add(new ArrayList<Object>(Arrays.asList("Dem", 700))); remainingVotes.add(new ArrayList<Object>(Arrays.asList("Rep", 300)));	Object successfully created	Object successfully created	
2	Assert the created remainingVotes array equals the remainingVotes inside of result1	assertEquals(remainingVotes, result1.getRemainingVotes());	True	True	

Post condition(s) for Test:

remainingVotes equals result1.getRemainingVotes()

Project Name: Project 1: Voting System
Team# 02

Test Stage: Unit x System

Test Date: 3/25/2024

Test Case ID#: CPL_RE_10C

Name(s) of Testers: Derrick

Test Description: Ensure the seat allocation is correct following the ran election in test CPL_RE_10A

Indicate where are you storing the tests (what file) and the name of the method/functions being used.
Project1/src/test/java/CPLTest.java

Automated: Yes X No

Results: Pass X Fail

Preconditions for Test: A CPL object has been created

Step #	Test Step Description	Test Data	Expected Result	Actual Result	Notes
1	Create new ArrayList, seatAllocation, and add parties along with votes to it	ArrayList<ArrayList<Object>> seatAllocation = new ArrayList<>(); seatAllocation.add(new ArrayList<Object>(Arrays.asList("Dem", new int[] {0,1}))); seatAllocation.add(new ArrayList<Object>(Arrays.asList("Rep", new int[] {0,0})));	Object successfully created	Object successfully created	
2	Create two int[], temp and temp2, using values in the seatAllocation array in result1 and in the seatAllocation array we created	int[] temp = (int[]) result1.getSeatAllocation().get(0).get(1); int[] temp2 = (int[]) seatAllocation.get(0).get(1);	int[]'s successfully created	int[]'s successfully created	
2	Assert that these values are equal	assertEquals(Arrays.toString(temp2), Arrays.toString(temp));	True	True	

Post condition(s) for Test:

seatAllocation is equal to the seatAllocation array found in result1