Project Name: Project 1: Voting System	I eam#17
Test Stage: Unit _x_ System	Test Date: 11/12/2018
Test Case ID#: Koo_BallotFile_001 Test Description: Test method is named BallotFileConstructorDoesNotThrowExceptionsSimpleOPL() located in BallotFileTest.java. It tests/uses the BallotFile constructor.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid BallotFile object is passed into t	the constructor as a parameter

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
				A File object is instantiated pointing to	
1				simple_opl_ballot_file.csv	
1	A File object is instantiated	simple_opl_ballot_file.csv	simple_opl_ballot_file.csv		
				A BallotFile object is instantiated using File	
			instantiated using File object	object from Step #1 and does not throw an	
	A BallotFile object is		from Step #1 and does not throw	exception during construction.	
2	instantiated	File object from Step #1	an exception during construction.		
3					
4					

A BallotFile object is instantiated without any exceptions being thrown.

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	<b>Test Date:</b> 11/12/2018		
Test Case ID#: Koo_BallotFile_002 Test Description: Test method is named BallotFileConstructorThrowsIOException() located in BallotFileTest.java. It tests/uses the BallotFile constructor.	Name(s) of Testers: Justin Koo		
Automated: yes_x_ no			
Results: Pass x Fail			
<b>Preconditions for Test:</b> An invalid File object is passed in	to the BallotFile constructor.		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	An invalid File object is			A File object pointing to doesnotexist.csv is	
1	instantiated	doesnotexist.csv	doesnotexist.csv is instantiated	instantiated	
_	A BallotFile object is		BallotFile constructor throws an	BallotFile constructor throws an	
2	instantiated	File object from step #1	IOException	IOException	
3					
4					

An IOException is thrown indicating that "doesnotexist.csv" cannot be read.

<b>Project Name: Project 1: Voting System</b>	Team#	<b>#17</b>
Test Stage: Unit _x_ System	Test Date: 11/12/2018	
Test Case ID#: Koo_BallotFile_003 Test Description: Test method is named getFilenameSimpleOPL() located in BallotFile.java. It tests/uses the getFilename method of the BallotFile class.	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
<b>Preconditions for Test:</b> A BallotFile has been instantiated witho	ut any errors.	

Step	Test S	Step	Test	Expected	Actual	
#	Descr	ription	Data	Result	Result	Notes
1	Instantiat	ed a BallotFile	simple_opl_ballot_file.csv	A BallotFile object is instantiated.	A BallotFile object is instantiated	
2	call the g		The BallotFile instance in step #1	returns "simple_opl_ballot_file.csv"	returns "simple_opl_ballot_file.csv"	
3						
4						

<sup>&</sup>quot;simple\_opl\_ballot\_file.csv" is returned from the getFilename method call.

<b>Project Name: Project 1: Voting System</b>	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/12/2018		
Test Case ID#: Koo_BallotFile_004 Test Description: Test method is named getLine3SimpleOPL() located in BallotFileTest.java. It tests/uses the getLine() method of the class.	Name(s) of Testers: Justin Koo		
Automated: yes_x no			
Results: Pass x Fail			

**Preconditions for Test:** A BallotFile has been instantiated without any errors

Step	Test	t Step	Test	Expected	Actual	
#	Des	cription	Data	Result	Result	Notes
1	Instant	iated a BallotFile	simple_opl_ballot_file.csv	A BallotFile object is instantiated.	A BallotFile object is instantiated	
2	call get		the BallotFile object in step	returns "[Pike,D], [Foster,D],[Deutsch,R], [Borg,R], [Jones,R],[Smith,I]"	returns "[Pike,D], [Foster,D],[Deutsch,R], [Borg,R], [Jones,R],[Smith,I]"	
3						
4						

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

returns "[Pike,D], [Foster,D],[Deutsch,R], [Borg,R], [Jones,R],[Smith,I]"

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/12/2018
Test Case ID#: Koo_BallotFile_005 Test Description: Test method is named getLastLineSimpleOPL() located in BallotFileTest.java. It tests/uses the getLine() method of the class.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Passx Fail	
<b>Preconditions for Test:</b> A BallotFile has been instantiated witho	ut any errors

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1	Instar	ntiated a BallotFile		A BallotFile object is instantiated.	A BallotFile object is instantiated	
2	call g		the BallotFile object in step #1 at the last line	returns",1,,,,"	returns ",1,,,,,"	
3						
4						

returns ",1,,,,"

<b>Project Name: Project 1: Voting System</b>	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/12/2018		
Test Case ID#: Koo_BallotFile_006 Test Description: Test method is named getLineThrowsIndexOutOfBoundsExceptionSimpleOPL() located in BallotFileTest.java. It tests/uses the getLine() method of the class.	Name(s) of Testers: Justin Koo		
Automated: yes_x_ no			
Results: Pass x Fail			
Preconditions for Test: A BallotFile has been instantiated without	at any errors		

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1				A BallotFile object is	A BallotFile object is instantiated	
1	Instan	tiated a BallotFile	simple_opl_ballot_file.csv	instantiated.		
	call go	etLine() for a line that	the BallotFile object in step	throws an	throws an IndexOutOfBoundsException	
2	does r	not exist	#1 at last line + 1	IndexOutOfBoundsException		
3						
4						

 $throws\ an\ IndexOutOfBoundsException$ 

Project Name: Project 1: Voting System					Team#17	
Test Stage: Unit _x_ System  Test Case ID#: Koo_BallotFile_007  Test Description: Test method is named getElectionTypeSimpleOPL located in BallotFileTest.java. It tests/uses the getElectionType method of the class.			Test 1	Date: 11/12/2018		
			ileTest.java. It	Name(s) of Testers: Justin Koo		
Autor	mated: yes_x r	10				
	lts: Pass x	Fail				
	onditions for Test: A	A BallotFile has been	instantiated without any	errors		
Preco						
Preco	Test Step	A BallotFile has been i	Expected Result	Actual Result	Notes	
Preco Step #		Test	Expected Result A BallotFile object is	Actual	Notes	
Step #	Test Step Description  Instantiated a BallotFile	Test Data	Expected Result A BallotFile object is instantiated.	Actual Result	Notes	
Step #	Test Step Description	Test Data  simple_opl_ballot_file.c: the BallotFile object in s	Expected Result A BallotFile object is instantiated.	Actual Result A BallotFile object is instantiated	Notes	

Proj	ject Name: Projec	et 1: Voting Sys	tem		Team#17
Test	: Stage: Unit _x_	System	Test Dat	e: 11/12/2018	
Test	Case ID#: Koo Cai	ndidate 001	Name(s)	of Testers: Justin Koo	
<b>Fest</b> ocat	Description: Test motest in Candidate.java. didate class.	ethod is named cand	lidateConstructor()		
uto	omated: yes_x_ n	0			
	ılts: Passx	 Fail			
tep	Test Step	Test	Expected	Actual	
њ #	<b>Description</b>	Data	Result	Result	Notes
1	instantiate a new Candidate instance	name: "McCain" party: "R"	no exceptions are thrown, i.e. the construction was successful		11000
2					
3					
4					
ost c	ondition(s) for Test:				

no exceptions are thrown after instantiation of a new candidate

- roj	ect Name: Projec		Team#17		
Test	Stage: Unit _x_	System	Test Date	e: 11/12/2018	
Test 1 Cand	Case ID#: Koo_Can Description: Test me lidateTest.java. It tests lidate class	thod is named getN	Name() located in	of Testers: Justin Koo	
Autor	mated: yes_x no	) <u> </u>			
Resul	lts: Pass <u>x</u>	Fail			
Preco	onditions for Test: A	Candidate object is	s instantiated		
Preco	onditions for Test: A	Candidate object is	s instantiated		
	onditions for Test: A  Test Step	Candidate object is  Test	s instantiated  Expected	Actual	
				Actual Result	Notes
Step #	Test Step	Test Data name: "Borg"	Expected		Notes
Step #	Test Step Description instantiate a new Candidate	Test Data name: "Borg" party: "D"	Expected Result	Result	Notes
Step #	Test Step Description instantiate a new Candidate instance	Test Data name: "Borg" party: "D" using the Candidate ob	Expected Result a new Candidate is instantiated	Result a new Candidate is instantiated	Notes
Step # 1 iii 2 c	Test Step Description instantiate a new Candidate instance	Test Data name: "Borg" party: "D" using the Candidate ob	Expected Result a new Candidate is instantiated	Result a new Candidate is instantiated	Notes

	ect Name: Projec	t 1: Voting System		Team#17		
Test S	Stage: Unit _x_	System	Test Date	e: 11/12/2018		
Test D	-	didate_003 thod is named getParty() /uses the getParty() metl	) located in	of Testers: Justin Koo		
Autom	nated: yes_x no	·				
Result	ts: Passx	Fail				
Stan	Tast Stan	Tost	Evnactad	Actual		
- 1	Test Step Description	Test Data	Expected Result	Actual Result	Notes	
# I	Description stantiate a new Candidate	Data name: "Borg"	-	Actual Result a new Candidate is instantiated	Notes	
# I	Description	Data	Result a new Candidate is instantiated	Result	Notes	
# I	Description Instantiate a new Candidate Instance	Data name: "Borg" party: "D" using the Candidate object in	Result a new Candidate is instantiated	Result a new Candidate is instantiated	Notes	

Project Name: Project 1: Voting System	Team#1/
Test Stage: Unit _x_ System	Test Date: 11/12/2018
Test Case ID#: Koo_Candidate_004 Test Description: Test method is named getNumVotes() located in CandidateTest.java. It tests/uses the getNumVotes() method of the Candidate class	
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: A Candidate object is instantiated	

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1	instan instan		name: "Borg" party: "D"	a new Candidate is instantiated	a new Candidate is instantiated	
2	call g		using the Candidate object in step #1	returns 0	returns 0	
3						
4						

Proj	ject	Name: Projec	et 1: Voting System	l		Team#17
Test	Sta	ge: Unit _x_	System	Test Date	e: 11/12/2018	
Test	Cas	se ID#: Koo Can	didate 005	Name(s)	of Testers: Justin Koo	
		scription: Test me		,		
			y() located in Candidate	Test.java. It		
tests	/uses	s the getAcquiredE	Ballots() method of the (	Candidate class		
Auto	mat	ed: yes_x_ no	)			
Resu	lts:	Passx	Fail			
Step	Te	st Step	Test	Expected	Actual	
#		scription	Data	Result	Result	Notes
1		ntiate a new Candidate	name: "Borg" party: "D"	a new Candidate is instantiated	a new Candidate is instantiated	
2	call g	etAcquiredBallots()	using the Candidate object in step #1	returns an empty List	returns an empty List	
3						
4						
'ost c	ondi	ition(s) for Test:				

returns an empty List

Proj	ject Name: Projec	Team#17				
Test	Stage: Unit _x_	System	Test Date	Test Date: 11/12/2018		
Test Case ID#: Koo_Candidate_006 Test Description: Test method is named setName() located in CandidateTest.java. It tests/uses the setName(), getName() methods of the Candidate class				of Testers: Justin Koo		
Auto	mated: yes_x_ no					
		Fail				
Prec	onditions for Test: A	Candidate object is inst	antiated			
Step	Test Step	Test	Expected	Actual		
#	Description	Data	Result	Result	Notes	
1	instantiate a new Candidate instance	name: "Borg" party: "D"	a new Candidate is instantiated	a new Candidate is instantiated		
2	call setName(newname)	newname = "Pike"	see step #3	see step #3		
3	call getName()	Candidate object from step #1 after step #2	returns "Pike"	returns "Pike"		

member variable name is set to "Pike"

Proj	ject Name: Projec	t 1: Voting System	1	Team#17		
Test	Stage: Unit _x_	System	Test Date	e: 11/12/2018		
Test Case ID#: Koo_Candidate_007 Test Description: Test method is named setParty() located in CandidateTest.java. It tests/uses the setParty(), getParty() methods of the Candidate class				Name(s) of Testers: Justin Koo		
Auto	mated: yes_x no					
Resu	lts: Passx	Fail				
Prece	onditions for Test: A	Candidate object is inst	tantiated			
Step	Test Step	Test	Expected	Actual		
#	Description	Data	Result	Result	Notes	
1	instantiate a new Candidate	name: "Borg"	a new Candidate is instantiated	a new Candidate is instantiated		

Ster	)   Te	est Step	Test	Expected	Actual	
#	De	escription	Data	Result	Result	Notes
1	insta insta		name: "Borg" party: "D"	a new Candidate is instantiated	a new Candidate is instantiated	
2	call s			see step #3	see step #3	
3	call g	getParty()	Candidate object from step #1 after step #2	returns "R"	returns "R"	
4						

member variable party is set to "R"

Project Name: Project 1: Voting System					Team#17
Test	Stage: Unit _x_	System	Test Date	e: 11/12/2018	
Test Case ID#: Koo_Candidate_008 Test Description: Test method is named acquireBallotCorrectBallot() located in CandidateTest.java. It tests/uses the acquireBallot() method of the Candidate class				of Testers: Justin Koo	
Auto	mated: yes_x_ no				
Resu	lts: Passx	 Fail			
Prec	onditions for Test: A (	Candidate object is insta	antiated		
Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	instantiate a new Candidate instance	name: "Borg" party: "D"	a new Candidate is instantiated	a new Candidate is instantiated	
2	call acquireBallot(ballot id)	ballot id = 0	see step #3	see step #3	
3	call getAdquiredBallots().get(0)	The Candidate object from step #1 after step #2	returns 0	returns 0	

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

4

member variable acquired\_ballots has 0 at index 0.

<b>Project Name: Project 1: Voting System</b>	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/12/2018		
Test Case ID#: Koo_Candidate_009 Test Description: Test method is named getAcquiredBallotsCorrectNumVotes() located in CandidateTest.java. It tests/uses the getAcquiredBallots(), getNumVotes() methods of the Candidate class	Name(s) of Testers: Justin Koo		
Automated: yes_x no			
Results: Pass x Fail			
<b>Preconditions for Test:</b> A Candidate object is instantiated			

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1			a new Candidate is instantiated	a new Candidate is instantiated	
1	instance	party: "D"			
2	call acquireBallot(ballot_id)	ballot_id = 0	see step #3	see step #3	
		Candidate object from step	returns 1	returns 1	
3	call getNumVotes()	#1 after step #2			
4					

member variable acquired\_ballots has 1 element in the list

Proj	ject	Name: Project	1: Voting System	l		Team#17
Test	Stag	ge: Unit _x_	System	Test Date	: 11/13/2018	
				nstructor() tor for the	of Testers: Justin Koo	
Auto	mate	ed: yes_x_ no				
Resu	lts:	Passx	Fail			
Prec	ondi	tions for Test: non	e			
Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data		Result	Notes
1	instan	tiate a new Party instance	name: "R" num_candidates: 100	no exceptions are thrown, i.e. the construction was successful	no exceptions are thrown	
2						
3						
4						

no exceptions are thrown during construction

<b>Project Name: Project 1: Voting System</b>				Team#17		
Test	Stage: Unit _x_	System	Test D	ate: 11/13/2018		
Test	Test.java. It tests/uses	ty_002 thod is named getNam the getName() method	e() located in	s) of Testers: Justin Koo		
Autor	mated: yes_x no	·				
Resul	lts: Passx	Fail				
Preco	onditions for Test: A	party object is instantia	nted			
				Actual		
	Test Step	party object is instantia  Test  Data	Expected Result	Actual Result	Notes	
Step #		Test Data name: "D" te num candidates: 3	Expected Result a new Party is instantiated	Result a new Party is instantiated	Notes	
Step # 1 i	Test Step Description	Test Data name: "D" te num candidates: 3	Expected Result a new Party is instantiated	Result	Notes	
Step # 1 i 2 c c 3	Test Step Description instantiate a new Party instance	Test Data name: "D"	Expected Result a new Party is instantiated	Result a new Party is instantiated	Notes	
Step # 1 i 2 c	Test Step Description instantiate a new Party instance	Test Data name: "D" te num candidates: 3	Expected Result a new Party is instantiated	Result a new Party is instantiated	Notes	

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_Party_003 Test Description: Test method is named getNumCandidates() located in PartyTest.java. It tests/uses the getNumCandidates() method for the Party class.	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: A party object is instantiated	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	instantiate a new Party		a new Party is instantiated	a new Party is instantiated	
	call getNumCandidate	The Party object from step #1	returns 3	returns 3	
3					
4		_			

Pro	ject Name: Proj	Team#17					
Test	Stage: Unit _x_	System	Test Da	Test Date: 11/12/2018			
Test in Pa	-	Party_004 method is named getNums s/uses the getNumSeats() r	Seats() located				
Auto	omated: yes_x	no					
Resu	ılts: Passx	Fail					
		A party object is instantia					
Step	_	Test	Expected	Actual			
#	Description	Data	Result	Result	Notes		
1	instantiate a new Party ins	name: "D"	a new Party is instantiated	a new Party is instantiated			
2	call getNumSeats()	The Party object from step #	returns 0	returns 0			
3		1					
4							
				ı			

Project Name: Project 1: Voting System  Tear					Team#17		
Test	t Stage: Unit _x_	System	Т	Test Date: 11/12/2018			
Test Case ID#: Koo_Party_005  Test Description: Test method is named getNumVotes() located in PartyTest.java. It tests/uses the getNumVotes() method for the Party class.							
Auto	omated: yes_x no						
Resu	ılts: Passx	Fail					
Prec	onditions for Test: A	party object is instantiat	ed				
Step	Test Step	Test	Expected	Actual			
#	Description	Data	Result	Result	Notes		
1	instantiate a new Party instance	name: "D" e num candidates: 3	a new Party is instant	tiated a new Party is instantiated			
2	call getNumVotes()	The Party object from step #1	returns 0	returns 0			
3							
4							

Project Name: Project 1: Voting System						Team#17		
Test	Stag	ge: Unit _x_	System	Test Da	nte: 11/12/2018			
Test	Case	e ID#: Koo Par	ty 006	Name(s	s) of Testers: Justin Koo			
		cription: Test me	· —	`	,			
getA	cquir	redBallotsIsEmpt	y() located in PartyTest.j	java. It				
tests	/uses	the getAcquiredE	Ballots() method for the	Party class.				
Auto	mate	ed: yes_x no	)					
Resu	lts:	Passx	Fail					
Preco Step		t Step	party object is instantiat  Test	ed  Expected	Actual			
#		cription	Data	Result	Result	Notes		
1	instant	iate a new Party instance		a new Party is instantiated	a new Party is instantiated			
2	call ge	tAcquiredBallots()	The Party object from step #1	returns an empty list	returns an empty list			
3								
4								
			1	I				

returns an empty list

Project Name: Project 1: Voting System						Team#17	
Test	Stag	ge: Unit _x_	System	Test D	ate: 11/12/2018		
Test	Case	e ID#: Koo_Par	rty_007	Name(	s) of Testers: Justin Koo		
Test	Desc	cription: Test m	ethod is named setName(	() located in			
Party	yTest	.java. It tests/use	s the setName() and getN	Name()			
meth	ods f	for the Party clas	S.				
		_					
Luto	mate	ed: yes_x_ n	0				
₹esu	lts:	Passx	Fail				
rece	ondit	tions for Test: A	party object is instantiat	ted			
tep	Tes	t Step	Test	Expected	Actual		
#	Des	cription	Data	Result	Result	Notes	
1		<del></del>	name: "D"	a new Party is instantiated	a new Party is instantiated		
	instant	tiate a new Party instar	nce num_candidates: 3				
2	call set	tName(newname)	newname = "R"	see step #3	see step #3		
2	11 - l-	tName()	the Party object from step #1	returns "R"	returns "R"		
	can ge	uname()	after step #2			-	
4							
st c	ondit	tion(s) for Test:					

returns "R"

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	Test Date: 11/12/2018
Test Case ID#: Koo_Party_008 Test Description: Test method is named setNumCandidates() located in PartyTest.java. It tests the setNumCandidates(), getNumCandidates method for the Party class.	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: A party object is instantiated	

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1	instar	ntiate a new Party instance		a new Party is instantiated	a new Party is instantiated	
	call setNu	ımCandidates(newnum)	newnum= 4	see step #3	see step #3	
3	call g		the Party object from step #1 after step #2	returns 4	returns 4	
4						

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	<b>Test Date:</b> 11/13/2018
Test Case ID#: Koo_Party_009 Test Description: Test method is named getAcquiredBallotesCorrectNumVotes() located in PartyTest.java. It tests/uses the acquireBallot() method of the Party class	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: A Party object is instantiated	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1			a new Candidate is instantiated	a new Candidate is instantiated	
1	instantiate a new Party instance	party: "3"			
2	call acquireBallot(ballot_id)	ballot_id = 0	see step #3	see step #3	
	call	The Party object from step #1	returns 0	returns 0	
3	getAcquiredBallots().get(0)	after step #2			
4					

 $member\ variable\ acquired\_ballots\ has\ 0\ at\ index\ 0.$ 

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_Party_010 Test Description: Test method is named acquireBallotCorrectNumVotes() located in PartyTest.java. It tests/uses the getAcquiredBallots() method of the Party class	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: A Party object is instantiated	

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1	instan	ntiate a new Party instance		a new Candidate is instantiated	a new Candidate is instantiated	
2	call a	cquireBallot(ballot_id)	ballot_id = 0	see step #3	see step #3	
	The		The Party object from step #1	returns 1	returns 1	
3	call g	etNumVotes()	after step #2			
4					_	

member variable acquired\_ballots has 1 element in the list

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	<b>Test Date:</b> 11/13/2018
Test Case ID#: Koo_UserInterface_001 Test Description: Test method is named UserInterfaceConstructor located in UserInterfaceTest.java. It tests that no exceptions are thrown when an UserInterface object is instantiated.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: None	

Step	Test S	Step	Test	Expected	Actual	
#	Descr	iption	Data	Result	Result	Notes
1		serInterface object is		No exceptions are thrown	no exceptions are thrown	
1	instantiate	ed	none			
2						
3						
4						

no exceptions are thrown during the constructor call of the UserInterface class.

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_UserInterface_002 Test Description: Test whether the method requestBallotFilename() of the UserInterface class displays to the console a prompt for the user to enter a ballot file name.	Name(s) of Testers: Justin Koo
Automated: yes no _x	
Results: Pass x Fail	
Preconditions for Test: A UserInterface object is instantiated	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
				The console displays a prompt for users to	
1				enter a ballot filename.	
1	Tester runs VotingSystem.java	none	filename		
2					
3					
4					

The user can see a prompt from the console to enter a ballot filename.

Project Name: Project 1: Voting System	Team#17	
Test Stage: Unit _x_ System	Test Date: 11/13/2018	
Test Case ID#: Koo_UserInterface_003 Test Description: Test whether the method displayInvalidElectionType() of the UserInterface class displays to the console information informing the user about an invalid election type encountered.	Name(s) of Testers: Justin Koo	
Automated:         yes no_x           Results:         Passx Fail		
Preconditions for Test: A UserInterface object is instantiated		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1			1 3 1 1	The console displays a prompt for users to enter a ballot filename.	
1	Tester runs VotingSystem.java	none	filename		
			The console informs the user that	The console informs the user that the	
		invalid_election_type_ballot	the election type encountered,	election type encountered, "CPL" is	
2	Tester enters a filename	_file.csv	"CPL" is unexpected.	unexpected.	
3					
4					

The console informs the user that the election type encountered "CPL" is unexpected. The console displays a prompt for a second time

for users to enter a ballot filename.

Project Name: Project 1: Voting System	Team#1/				
Test Stage: Unit _x_ System	Test Date: 11/13/2018				
Test Case ID#: Koo_UserInterface_004 Test Description: Test whether the method displayExceptionMessage() of the UserInterface class displays to the console the exception message of any exception that is thrown when reading the given ballot file.					
Automated: yes no _x					
Results: Pass x Fail					
<b>Preconditions for Test:</b> A UserInterface object is instantiated					

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1	Tester	runs VotingSystem.java			The console displays a prompt for users to enter a ballot filename.	
2	Tester		filename that does not exist	The console informs the user that the system could not find the file specified.	The console informs the user that the system could not find the file specified.	
3						
4						

The console informs the user that the system could not find the file specified. The console displays a prompt for users a second time to

enter a ballot filename.

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_UserInterface_005 Test Description: Test whether the method displayResults() of the UserInterface class displays to the console the summarized results of the election.	Name(s) of Testers: Justin Koo
Automated: yes no _x	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A UserInterface object is instantiated	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	Tester runs VotingSystem.java			The console displays a prompt for users to enter a ballot filename.	
2	Tester enters a filename string		The console displays some result	The console displays some result to the user (may not be correct, but nonempty)	
3					
4					

The console displays some information informing the user about the election within "simple\_opl\_ballot\_file.csv". These informations may not be necessarily correct, but it should be nonempty.

,	Team#17
Test Date: 11/13/2018	
Name(s) of Testers: Justin Koo	
ODI EL	·
ne OPLEIection constructor.	
	Test Date: 11/13/2018

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
	A valid BallotFile object is instantiated		A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2	Instantiate a new OPLElection object	pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3					
4					

A new OPLElection object is instantiated without any errors being thrown.

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_OPLElection_002 Test Description: Test method is getNumCandidatesSimpleOPL() located in OPLElectionTest.java. It tests the getNumCandidates() method of the OPLElection class.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid BallotFile object is passed into t	ne OPLElection constructor.

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1	A vali	id BallotFile object is		A valid BallotFile object is	A valid BallotFile object is created. No	
1	instan	tiated	simple_opl_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
_	Instan	tiate a new OPLElection	pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	object		step #1 into the constructor			
			using the OPLElection object	returns 6	returns 6	
3	call g	etNumCandidates()	in step #2			
4						

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_OPLElection_003 Test Description: Test method is getNumSeatsSimpleOPL() located in OPLElectionTest.java. It tests the getNumSeats() method of the OPLElection class.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid BallotFile object is passed into	he OPLElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is		A valid BallotFile object is	A valid BallotFile object is created. No	
1	instantiated	simple_opl_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
_	Instantiate a new OPLElection	n pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	object	step #1 into the constructor			
		using the OPLElection object	returns 3	returns 3	
3	call getNumSeats()	in step #2			
4					

Post condition	(s) for Test:

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_OPLElection_004 Test Description: Test method is getNumBallotsSimpleOPL() located in OPLElectionTest.java. It tests the getNumBallots() method of the OPLElection class.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid BallotFile object is passed into t	he OPLElection constructor.

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1	A val	id BallotFile object is		A valid BallotFile object is	A valid BallotFile object is created. No	
1	instan	ntiated	simple_opl_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
	Instar	ntiate a new OPLElection	pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	objec	t	step #1 into the constructor			
			using the OPLElection object	returns 9	returns 9	
3	call g	etNumBallots()	in step #2			
4						
	1					

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/13/2018		
Test Case ID#: Koo_OPLElection_005 Test Description: Test method is getQuotaSimpleOPL() located in OPLElectionTest.java. It tests the getQuota() method of the OPLElection class.	Name(s) of Testers: Justin Koo		
Automated: yes_x no			

**Preconditions for Test:** A valid BallotFile object is passed into the OPLElection constructor.

Fail

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1		id BallotFile object is nitiated	simple_opl_ballot_file.csv	5	A valid BallotFile object is created. No Exceptions thrown	
2	Instar objec		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	3 call getQuota()		using the OPLElection object in step #2	returns 3	returns 3	
4						

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

Results: Pass \_\_x\_

l eam#1 /
Test Date: 11/13/2018
Name(s) of Testers: Justin Koo

**Preconditions for Test:** A valid BallotFile object is passed into the OPLElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_opl_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2	Instantiate a new OPLElection object	pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getCandidates()	using the OPLElection object in step #2	returns a Candidate[]	returns a Candidate[]	
4	Assert names are correct by calling getName() on each Candidate in the Candidate[]	using the Candidate[] in step	Candidate[] from step #3 contains candidates with names {"Pike", "Foster", "Deutsch", "Borg", "Jones", "Smith"}	Candidate[] from step #3 contains candidates with names {"Pike", "Foster", "Deutsch", "Borg", "Jones", "Smith"}	

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

A Candidate[] is returned containing Candidate objects that have the correct names.

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	<b>Test Date:</b> 11/13/2018		
Test Case ID#: Koo_OPLElection_007 Test Description: Test method is getCandidatesPartiesSimpleOPL() located in OPLElectionTest.java. It tests the getCandidates() method of the OPLElection class.	Name(s) of Testers: Justin Koo		
Automated: yes_x_ no			
Results: Pass x Fail			

**Preconditions for Test:** A valid BallotFile object is passed into the OPLElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_opl_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2	Instantiate a new OPLElection object	pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3		using the OPLElection object in step #2	returns a Candidate[]	returns a Candidate[]	
	Assert parties are correct by calling getParty() on each Candidate in the Candidate[]	using the Candidate[] in step #3	Candidate[] from step #3 contains candidates with parties {"D", "D", "R", "R", "R", "I"}	Candidate[] from step #3 contains candidates with parties {"D", "D", "R", "R", "R", "I"}	

Post condition(s) for Test:

A Candidate[] is returned containing Candidate objects that have the correct parties.

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/13/2018		
Test Case ID#: Koo_OPLElection_008 Test Description: Test method is getPartiesNamesSimpleOPL() located in OPLElectionTest.java. It tests the getParties() method of the OPLElection class.	Name(s) of Testers: Justin Koo		
Automated: yes_x_ no			
Results: Pass x Fail			

**Preconditions for Test:** A valid BallotFile object is passed into the OPLElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated		A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
1 ')	Instantiate a new OPLElection object	pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getParties()	using the OPLElection object in step #2	returns a Party[]	returns a Party[]	
	Assert parties names are correct by calling getName() on each Party in the Party[]			Party[] from step #3 contains parties with party names: {"D","R","I"}	

Post condition(s) for Test:

A Party[] is returned containing Party objects that have the correct party names.

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_OPLElection_009 Test Description: Test method is getPartiesNumCandidatesSimpleOPL() located in OPLElectionTest.java. It tests the getParties() method of the OPLElection class.	Name(s) of Testers: Justin Koo
Automated: yes_x no Results: Pass x Fail	
	41 - ODI Elastian and tractor
<b>Preconditions for Test:</b> A valid BallotFile object is passed into	the OPLE lection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_opl_ballot_file.csv	5	A valid BallotFile object is created. No Exceptions thrown	
2	Instantiate a new OPLElection object	pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getParties()	using the OPLElection object in step #2	returns a Party[]	returns a Party[]	
4	Assert number of candidates of parties names are correct by calling getNumCandidates() on each Party in the Party[]		, L3	Party[] from step #3 contains parties with num candidates: {2, 3, 1}	
	, , , , ,	2 22 1			

A Party[] is returned containing Party objects that have the correct number of candidates.

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo_OPLElection_010 Test Description: Test method is getCandidateWinnersNotEmptySimpleOPL() located in OPLElectionTest.java. It tests the getCandidateWinners() method of the OPLElection class.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no  Results: Pass x Fail	
Preconditions for Test: A valid BallotFile object is passed into the	ne OPLElection constructor.

Step	Test S	tep	Test	Expected	Actual	
#	Descri	ption	Data	Result	Result	Notes
1	A valid Ba	allotFile object is		A valid BallotFile object is	A valid BallotFile object is created. No	
1	instantiate	d	simple_opl_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
	Instantiate	a new OPLElection	pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	object		step #1 into the constructor			
			using the OPLElection object	returns a nonempty	returns a nonempty Set <candidate></candidate>	
3	call getCar	ndidateWinners()	in step #2	Set <candidate></candidate>		

returns a nonempty Set<Candidate>

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Koo OPLElection 011	Name(s) of Testers: Justin Koo
<b>Test Description:</b> Test method is	
toStringNotEmptySimpleOPL() located in OPLElectionTest.java	
It tests the toString() method of the OPLElection class.	
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: A valid BallotFile object is passed into the	e OPLElection constructor.

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1	A val	id BallotFile object is		A valid BallotFile object is	A valid BallotFile object is created. No	
1	instan	ntiated	simple_opl_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
2	Instar	ntiate a new OPLElection	pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	objec	t	step #1 into the constructor			
				returns a nonempty String	returns a nonempty String	due to randomness when a tie
			using the OPLElection object			occurs, the string returned will
3	call to	String()	in step #2			not always be the same

returns a nonempty String

<b>Project Name: Project 1: Voting System</b>	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/13/2018		
Test Case ID#: Koo_OPLElection_010 Test Description: Test method is getPartyWinnersNotEmptySimpleOPL() located in OPLElectionTest.java. It tests the getPartyWinners() method of the OPLElection class.	Name(s) of Testers: Justin Koo		
Automated: yes_x_ no			
Results: Passx Fail			
<b>Preconditions for Test:</b> A valid BallotFile object is passed into the	ne OPLElection constructor.		

Step	Tes	st Step	Test	Expected	Actual	
#	Des	scription	Data	Result	Result	Notes
1		id BallotFile object is tiated		A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
1 7		tiate a new OPLElection		•	No exceptions thrown.	
3	call g		using the OPLElection object in step #2	returns a nonempty Set <party></party>	returns a nonempty Set <party></party>	

returns a nonempty Set<Party>

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018
Test Case ID#: Koo_System_001 Test Description: Test method is named VotingSystemIRBallotFile1NoErrors() located in SystemTest.java. It tests whether the program can run without errors using ir_ballot_file_1.csv.	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: None	

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
		method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
1		allot_file_1.csv" as input				
1	into S	System.in	ir_ballot_file_1.csv			
2						
3						
				_		

	Project Name: Project 1: Voting System			Team#17		
Test	Stage: Unit S	System _x_	Test Da	te: 11/13/2018		
Test Votin Syste	Case ID#: Koo_Syste Description: Test metl ngSystemIRBallotFile2 emTest.java. It tests who is using ir_ballot_file_2	hod is named NoErrors() located ether the program c	in	of Testers: Justin Koo		
Autoi	mated: yes x no					
	<u> </u>					
	<del></del>	Fail				
Preco	onditions for Test: No	ne	Evnected	Actual		
Preco	onditions for Test: Nor	Test	Expected Result	Actual Result	Notes	
Step #	onditions for Test: No	ne	<u>*</u>	Actual Result No errors/exceptions thrown	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_2.csv" as input	Test Data	Result	Result	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_2.csv" as input	Test Data	Result	Result	Notes	

	Project Name: Project 1: Voting System			Team#17		
Test	Stage: Unit S	System _x_	Test Da	te: 11/13/2018		
Test Votin Syste	Case ID#: Koo_Syste Description: Test metl ngSystemIRBallotFile3 emTest.java. It tests who s using ir_ballot_file_3	nod is named NoErrors() located ether the program c	in	of Testers: Justin Koo		
Autoi	mated: yes x no					
	<u> </u>					
	<del></del>	Fail				
Preco	onditions for Test: No	ne	Evnected	Actual		
Preco	onditions for Test: Nor	Test	Expected Result	Actual Result	Notes	
Step #	onditions for Test: No	ne	Expected Result No errors/exceptions thrown	Actual Result No errors/exceptions thrown	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_3.csv" as input	Test Data	Result	Result	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_3.csv" as input	Test Data	Result	Result	Notes	

	Project Name: Project 1: Voting System			Team#17		
Test	Stage: Unit S	System _x_	Test Da	te: 11/13/2018		
Test Votin Syste	Case ID#: Koo_Syste Description: Test metl ngSystemIRBallotFile1 emTest.java. It tests who s using ir_ballot_file_4	nod is named NoErrors() located ether the program c	in	of Testers: Justin Koo		
Autoi	mated: yes x no					
	<u> </u>					
	<del></del>	Fail				
Preco	onditions for Test: No	ne	Evnected	Actual		
Preco	onditions for Test: Nor	Test	Expected Result	Actual Result	Notes	
Step #	onditions for Test: No	ne	Expected Result No errors/exceptions thrown	Actual Result No errors/exceptions thrown	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_4.csv" as input	Test Data	Result	Result	Notes	
Step #	Test Step Description Main method is invoked with "ir_ballot_file_4.csv" as input	Test Data	Result	Result	Notes	

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018
Test Case ID#: Koo_System_005 Test Description: Test method is named VotingSystemIRBallotFile5NoErrors() located in SystemTest.java. It tests whether the program can run without errors using ir_ballot_file_5.csv.	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: None	

Step	Te	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
		method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
1		allot_file_5.csv" as input				
1	into S	System.in	ir_ballot_file_5.csv			
2						
3						

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018
Test Case ID#: Koo_System_006 Test Description: Test method is named VotingSystemSimpleIRBallotFileNoErrors() located in SystemTest.java. It tests whether the program can run without error using simple_ir_ballot_file.csv.	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> None	

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
		method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
1	"simp	ole_ir_ballot_file.csv" as				
1	input	into System.in	simple_ir_ballot_file.csv			
2						
3						

Team#17
Test Date: 11/13/2018
Name(s) of Testers: Justin Koo

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
		method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
1		e_ir_ballot_file.csv" as				
1	input	into System.in	large_ir_ballot_file.csv			
2						
3						
				_		

<b>Project Name: Project 1: Voting System</b>	<b>Team#17</b>	
Test Stage: Unit System _x_	Test Date: 11/13/2018	
Test Case ID#: Koo_System_008 Test Description: Test method is named VotingSystemOPLBallotFile0Candidate0Seat0BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl ballot file 0 candidate 0 seat 0 ballot.csv	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1		opl_ballot_file_0_candidate_	-	No errors/exceptions thrown	
2	into System.in	0_seat_0_ballot.csv			
3					

Project Name: Project 1: Voting System		Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018	
Test Case ID#: Koo_System_009 Test Description: Test method is named VotingSystemOPLBallotFile0Candidate1Seat0BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl_ballot_file_0_candidate_1_seat_0_ballot.csv	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Tes	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
1	"opl_ _seat_	method is invoked with ballot_file_0_candidate_1 _0_ballot.csv" as input system.in		No errors/exceptions thrown	No errors/exceptions thrown	
2						
3						
			-			

<b>Project Name: Project 1: Voting System</b>		Team#17
Test Stage: Unit System _x_	<b>Test Date:</b> 11/13/2018	
Test Case ID#: Koo_System_010 Test Description: Test method is named VotingSystemOPLBallotFile1Candidate0Seat0BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl_ballot_file_1_candidate_0_seat_0_ballot.csv	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
	Main method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
	"opl_ballot_file_1_candidate_0				
1	_seat_0_ballot.csv" as input	opl_ballot_file_1_candidate_			
1	into System.in	0_seat_0_ballot.csv			
2					
3					

Project Name: Project 1: Voting System		Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018	
Test Case ID#: Koo_System_011 Test Description: Test method is named VotingSystemOPLBallotFile1Candidate0Seat1BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl_ballot_file_1_candidate_0_seat_1_ballot.csv	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	Main method is invoked with "opl_ballot_file_1_candidate_0 _seat_1_ballot.csv" as input into System.in		No errors/exceptions thrown	No errors/exceptions thrown	
2					
3					

Project Name: Project 1: Voting System	· .	Гeam#17
Test Stage: Unit System _x_	<b>Test Date:</b> 11/13/2018	
Test Case ID#: Koo_System_012 Test Description: Test method is named VotingSystemOPLBallotFile1Candidate1Seat0BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl_ballot_file_1_candidate_1_seat_0_ballot.csv	Name(s) of Testers: Justin Koo	
Automated: yes_x_ no		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1			•	No errors/exceptions thrown	
2					
3					

Project Name: Project 1: Voting System	Team#17
Test Stage: Unit System _x_	<b>Test Date:</b> 11/13/2018
Test Case ID#: Koo_System_013 Test Description: Test method is named VotingSystemOPLBallotFile1Candidate1Seat1BallotNoErrors() located in SystemTest.java. It tests whether the program can run without errors using opl_ballot_file_1_candidate_1_seat_1_ballot.csv	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: None	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
	Main method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
	"opl_ballot_file_1_candidate_1				
	_seat_1_ballot.csv" as input	opl_ballot_file_1_candidate_			
1	into System.in	1_seat_1_ballot.csv			
2					
3					

Step	Te	st Step	Test	Expected	Actual	
#	De	scription	Data	Result	Result	Notes
		method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
1		ole_opl_ballot_file" as				
1	input	into System.in	simple_opl_ballot_file.csv			
2						
3						

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018
Test Case ID#: Koo_System_015 Test Description: Test method is named VotingSystemLargeOPLBallotFileNoErrors() located in SystemTest.java. It tests whether the program can run without errors using large_opl_ballot_file.csv	Name(s) of Testers: Justin Koo
Automated: yes_x no	
Results: Pass x Fail	
D	
Preconditions for Test: None	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
	Main method is invoked with		No errors/exceptions thrown	No errors/exceptions thrown	
	"large_opl_ballot_file.csv" as				
1	input into System.in	large_opl_ballot_file.csv			
2					
3					

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit System _x_	Test Date: 11/13/2018
Test Case ID#: Koo_System_016 Test Description: Test method is named VotingSystemLargeOPLBallotFileUnder8Minutes() located in SystemTest.java. It tests whether the program can run in under 8 minutes using large_opl_ballot_file.csv (100,000 ballots)	Name(s) of Testers: Justin Koo
Automated: yes_x_ no	
Results: Pass x Fail	
Preconditions for Test: None	

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
	Main method is invoked with		Finishes in under 8 minutes	Finishes in under 8 minutes	
1	"large_opl_ballot_file.csv" as				
1	input into System.in	large_opl_ballot_file.csv			
2					
3					

Finishes in under 8 minutes

	ject Name: Projec	i i. Voting System	111	Team#17		
Test	Stage: Unit	System _x_	Test Da	te: 11/13/2018		
Test Votin Syste	Case ID#: Koo_Syst Description: Test mei ngSystemLargeIRBallo emTest.java. It tests wh ntes using large_ir_ball	thod is named of the control of the	) located in number 8	) of Testers: Justin Koo		
Auto	mated: yes x no					
	lts: Passx	 Fail				
Preco	onditions for Test· No	ne				
	onditions for Test: No		Evnoated	Aatual		
Step	Test Step	Test	Expected Result	Actual Result	Notes	
Step # 1 1 1 1 2			Expected Result Finishes in under 8 minutes	Actual Result Finishes in under 8 minutes	Notes	
Step #	Test Step Description Main method is invoked with "large_ir_ballot_file.csv" as	Test Data	Result	Result	Notes	

<b>Project Name: Project 1: Voting System</b>	Team#17		
Test Stage: Unit System _x_	Test Date: 11/13/2018		
Test Case ID#: Koo_System_018 Test Description: Test to see if console output and auditfile contents are correct given input file "simple_opl_ballot_file.csv"	Name(s) of Testers: Justin Koo		
Automated: yes no _x			
Results: Pass x Fail			
Preconditions for Test: None			

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	Main method is invoked with "simple_opl_ballot_file.csv" as input into System.in		results of winners. Audit file	Console display correct summary results of winners Audit file generated with correct contents, allowing one to track the election step by step.	
2					
3					

Console displays correct results. Audit file is generated. Audit file contains information allowing one to track election step by step.

Project Name: Project 1: Voting System	Team#17	
Test Stage: Unit System _x_	Test Date: 11/13/2018	
Test Case ID#: Koo_System_019 Test Description: Test to see if console output and auditfile contents are correct given input file "simple_ir_ballot_file.csv"	Name(s) of Testers: Justin Koo	
Automated: yes no _x		
Results: Pass x Fail		
Preconditions for Test: None		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	Main method is invoked with "simple_ir_ballot_file.csv" as input into System.in		results of winners. Audit file	Console display correct summary results of winners Audit file generated with correct contents, allowing one to track the election step by step.	
2					
3					

Console displays correct results. Audit file is generated. Audit file contains information allowing one to track election step by step.

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Zhang_IRElection_001 Test Description: Test method is named IRElectionConstructorSimpleIR() located in IRElectionTest.java. It tests that no exceptions are thrown during the constructor call it a valid BallotFile object is provided as an argument.	
Automated: yes_x no	
Results: Pass x Fail	
Preconditions for Test: A valid BallotFile object is passed into the	ne IRElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is		5	A valid BallotFile object is created. No	
1	instantiated	simple_ir_ballot_file.csv	created. No exceptions thrown.	Exceptions thrown	
	Instantiate a new IRElection	pass the BallotFile object in	No exceptions are thrown	No exceptions thrown.	
2	object	step #1 into the constructor			
3					
4					

A new IRElection object is instantiated without any errors being thrown.

Project Name: Project 1: Voting System	1 eam#1 /
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Zhang_IRElection_002 Test Description: Test method is named testToStringSimpleIR() located in IRElectionTest.java. It tests the toString() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid File object is passed into the Bal	lotFile constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3		using the IRElection object in step #2	returns the correct string	returns the correct string	
4					

Returns a string with correct election type, number of candidates, list of candidates and parties, ballots number, and winning candidate.

<b>Project Name: Project 1: Voting System</b>	Team#17
Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Zhang_IRElection_003 Test Description: Test method is named testCandidatesSimpleIR() located in IRElectionTest.java. It tests the getCandidates() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang
Automated: yes_x_ no	
Results: Passx Fail	
<b>Preconditions for Test:</b> A valid File object is passed into the Bal	lotFile constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv	I ~	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getCandidates()	using the IRElection object in step #2	returns a list of all candidates	returns a list of all candidates	
4					

Returns a list of all candidates with names "Rosen", "Kleinberg", "Chou" and "Royce"

Project Name: Project 1: Voting System Team#17

Test Stage: Unit _x_ System	Test Date: 11/13/2018
Test Case ID#: Zhang_IRElection_004 Test Description: Test method is testNumCandidatesSimpleIR() located in IRElectionTest.java. It tests the getNumCandidates() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang
Automated: yes_x_ no	
Results: Pass x Fail	
<b>Preconditions for Test:</b> A valid BallotFile object is passed into the	ne IRElection constructor.

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated		A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getNumCandidates()	using the IRElection object in step #2	returns 4	returns 4	
4					

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

returns 4

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/13/2018		
Test Case ID#: Zhang_IRElection_005 Test Description: Test method is testNumBallotsSimpleIR() located in IRElectionTest.java. It tests the getNumBallots() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang		
Automated: yes_x_ no			
Results: Pass x Fail			
<b>Preconditions for Test:</b> A valid BallotFile object is passed into	the IRElection constructor.		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getNumBallots()	using the IRElection object in step #2	returns 6	returns 6	
4					

returns 6

Project Name: Project 1: Voting System	Team#17		
Test Stage: Unit _x_ System	Test Date: 11/13/2018		
Test Case ID#: Zhang_IRElection_006 Test Description: Test method is testWinningCandidateSimpleIR() located in IRElectionTest.java. It tests the getCandidateWinners() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang		
Automated: yes_x no			
Results: Pass x Fail			
Preconditions for Test: A valid BallotFile object is passed into the	ne IRElection constructor.		

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv		A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getCandidateWinners()	$\varepsilon$	returns candidate with name "Rosen"	returns candidate with name "Rosen"	

returns candidate with name "Rosen"

<b>Project Name: Project 1: Voting System</b>	Team#17				
Test Stage: Unit _x_ System	Test Date: 11/13/2018				
Test Case ID#: Zhang_IRElection_007 Test Description: Test method is testWinningPartySimpleIR() located in IRElectionTest.java. It tests the getPartyWinners() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang				
Automated: yes_x_ no					
Results: Passx Fail					
Preconditions for Test: A valid BallotFile object is passed into the IRElection constructor.					

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getPartyWinners()	using the IRElection object in step #2	returns party with name "D"	returns party with name "D"	

returns party with name "D"

Project Name: Project 1: Voting System	Team#17				
Test Stage: Unit _x_ System	Test Date: 11/13/2018				
Test Case ID#: Zhang_IRElection_008 Test Description: Test method is testQuota() located in IRElectionTest.java. It tests the getQuota() method of the IRElection class.	Name(s) of Testers: Xiaochen Zhang				
Automated: yes_x_ no					
Results: Passx Fail					
Preconditions for Test: A valid BallotFile object is passed into the IRElection constructor.					

Step	Test Step	Test	Expected	Actual	
#	Description	Data	Result	Result	Notes
1	A valid BallotFile object is instantiated	simple_ir_ballot_file.csv	A valid BallotFile object is created. No exceptions thrown.	A valid BallotFile object is created. No Exceptions thrown	
2		pass the BallotFile object in step #1 into the constructor	No exceptions are thrown	No exceptions thrown.	
3	call getQuota()	using the IRElection object in step #2	returns 4	returns 4	

returns 4