

Use cases for V-pal (Team 17)

Name	Determine winner of the election
ID	win_001
Description	Once the ballots are casted and the ballot csv file is prepared, the election officials should be able to decide the winner of the election.
Actors	Election official
Organizational Benefits	<ol style="list-style-type: none">1. Choose the winner of the election2. People get a say in how should their government work
Frequency of use	Every time an election is conducted (or a change in ballot file takes place)
Triggers	<ol style="list-style-type: none">1. Election has ended and a winner should be decided
Preconditions	<ol style="list-style-type: none">1. Ballot file has the required format as described in the software SRS2. Election official has access to the ballot file3. Election official has V-pal installed and running on their machine
Postconditions	<ol style="list-style-type: none">1. Winner of the election is decided
Main Course	<ol style="list-style-type: none">1. Run V-pal through the terminal of the computer on which the ballot file is stored and V-pal is installed2. Provide the ballot file name3. Press the return key (i.e. load the ballot file in V-pal). (EX 1)

	<ol style="list-style-type: none"> Wait for V-pal to print the winners name and party on the terminal screen. (EX 1) Election official can look at the screen to find the winner. (AC1; AC2)
Alternate Courses	<p>AC 1 Election official wants to open the summary file for the media</p> <ol style="list-style-type: none"> Election official can open the generated summary file to find the winner. <p>AC 2 Election official wants to open generated audit file</p> <ol style="list-style-type: none"> Election official can open the generated audit file to find the winner.
Exceptions	<p>EX 1 Software encounters an error</p> <ol style="list-style-type: none"> Message will appear with the error EXIT

Name	Create election summary file for media
ID	sum_001
Description	After the election is over, and the results are calculated via the program, the system should create a readable summary file describing the winner of the election, and the basics of the calculations.
Actors	Election official, reporter
Organizational Benefits	<ol style="list-style-type: none"> 1. Choose the winner of the election 2. People get a say in how should their government work
Frequency of use	Every time an election is conducted (or a change in ballot file takes place)
Triggers	<ol style="list-style-type: none"> 1. Election has ended and a winner should be decided
Preconditions	<ol style="list-style-type: none"> 1. Ballot file has the required format as described in the software SRS 2. Election official has access to the ballot file 3. Election official has V-pal installed and running on their machine
Postconditions	<ol style="list-style-type: none"> 1. Winner of the election is decided
Main Course	<ol style="list-style-type: none"> 1. Run V-pal through the terminal of the computer on which the ballot file is stored and V-pal is installed. (AC2) 2. Provide the name of the ballot file 3. Press the return key (i.e. load the ballot file in V-pal)

	<ol style="list-style-type: none"> 4. Wait for V-pal to print the winners name, party, and election stats on the terminal screen 5. The Summary file will be stored in the same folder.
Alternate Courses	<p>AC 1 Ballot file loaded in is not in the current folder</p> <ol style="list-style-type: none"> 1. Change current directory to the directory where the ballot file is stored. (EX 1) 2. Jump to MC1
Exceptions	<p>EX 1 User is unable to change current directory to where the ballot file is stored or is unable to copy ballot file to the current file</p> <ol style="list-style-type: none"> 1. EXIT

Name	Create audit file for the election
ID	aud_001
Description	After the election is over, and the results are calculated via the program, the system should create an audit file that shows the specific calculations of the program. An official who wants to confirm the calculations will want to see the exact steps the software took to calculate the results.
Actors	Election official
Organizational Benefits	Keep track of the specifics of the election for future use and human error-checking
Frequency of use	Every time an election is conducted (or a change in ballot file takes place)
Triggers	Results have been calculated
Preconditions	<ol style="list-style-type: none"> 1. Election is over 2. Election official has access to the ballot file 3. V-pal is installed and running on the current machine
Postconditions	<ol style="list-style-type: none"> 1. The system found a winner 2. The audit file has been generated
Main Course	<ol style="list-style-type: none"> 1. Check if the ballot file is present in the current folder. If yes, then process. If no, then jump to AC1. 2. If election file is not present in the current directory, see EX1

	<ol style="list-style-type: none"> 3. Run V-pal through the terminal of the computer on which the ballot file is stored 4. Provide the name of the ballot file 5. Press the return key (i.e. load the ballot file in V-pal) 6. Wait for V-pal to generate the audit file 7. Screen prints the winner's name and party on the screen. 8. Election official opens the audit file to analyze the calculations.
Alternate Courses	<ol style="list-style-type: none"> 1. Change folder to the directory where the ballot file is stored 2. Jump to MC1
Exceptions	<ol style="list-style-type: none"> 1. If the ballot file is not present in the current directory, exit.

Name	Group independent candidates together
ID	grup_001
Description	In case of OPL voting, independent candidates should be grouped together in one party
Actors	Election official (user)
Organizational Benefits	Number of seats for the independent candidates can be counted.
Frequency of use	Everytime OPLV election is organized, and seats won by the different parties have to be decided.
Triggers	<ol style="list-style-type: none"> 1. Election official wants to calculate seats won by parties in OPLV
Preconditions	<ol style="list-style-type: none"> 1. Ballot file has the required format as described in the software SRS 2. Election official has access to the ballot file 3. Election official has V-pal installed and running on their machine
Postconditions	<ol style="list-style-type: none"> 1. Independent candidates are grouped together in the independent party group. 2. Number of seats won by the independent party is determined by the software
Main Course	<ol style="list-style-type: none"> 1. Election official runs V-Pal

	<ol style="list-style-type: none"> 2. Election official puts the ballot filename in the prompt. 3. V-Pal runs and displays the election results and stats on the screen and saves the audit and summary file. (AC1) 4. Election official opens the summary file. (See EX2) 5. Election official announces the seats won by independent candidates
Alternate Courses	<ol style="list-style-type: none"> 1. V-Pal shows the error that ballot file is not present in the current folder. 2. Election official changes current directory to the directory where the ballot file is stored. (See EX1)
Exceptions	<p>EX 1 Election official can not change the directory</p> <ol style="list-style-type: none"> 1. Exit <p>EX 2 Election official can not open the summary file. They does not have the permissions.</p> <ol style="list-style-type: none"> 1. Exit

Name	Verification
ID	ver_001
Description	If an election had its results calculated using a different software than V-Pal then this software can be used to verify the results calculated before.
Actors	Previous and current election officials
Organizational Benefits	Verifies the results to keep the integrity of democracy
Frequency of use	As many times as the the officials want to verify the results
Triggers	Administration calls for a verification of an election
Preconditions	There is a csv file of the election already structured in either IRV or OPLV
Postconditions	The audit file is generated from the program
Main Course	<ol style="list-style-type: none"> 1. Run V-Pal through the terminal of the computer on which the ballot file is stored and V-Pal is installed 2. Provide the name of the ballot file 3. Press the return key (i.e. load the ballot file in V-Pal) (EX 1) 4. Wait for V-Pal to generate the audit file 5. Display summary on screen 6. Election official opens the audit file to analyze the results

Alternate Courses	None
Exceptions	EX 1 The ballot file entered is invalid <ol style="list-style-type: none"> 1. Error message will appear on screen 2. Prompt user to EXIT and run the software again

Name	Testing
ID	tes_001

Description	Users (testers) want to verify that the software correctly calculates the results of the election.
Actors	Testers, election officials who want to make sure everything works
Organizational Benefits	<ol style="list-style-type: none"> 1. Makes the code robust. 2. Increase the credibility of the software in the market
Frequency of use	Once, the pass or fail of the unit tests will tell if the software is good or not
Triggers	Somebody wants to know the integrity of the software
Preconditions	<ol style="list-style-type: none"> 1. Tests are present in the test folder 2. V-Pal is installed and g++ compiler is available
Postconditions	<ol style="list-style-type: none"> 1. V-Pal has been tested
Main Course	<ol style="list-style-type: none"> 1. User will navigate to the testing folder of the software. 2. User runs the test executable. (EX 1) 3. The display will show what tests ran, and if they pass or fail. 4. User will use the results to decide if the software is good to use or not.
Alternate Courses	None
Exceptions	<p>EX 1 Error was encountered running the executable test file</p> <ol style="list-style-type: none"> 1. Message will appear with error encountered 2. EXIT

Name	Seats
ID	sum_002

Description	An election official wants to see the number of seats won by a candidate in OPL.
Actors	Election official
Organizational Benefits	People can check how successful other candidates were.
Frequency of use	Everytime the election official wants to see the number of seats won by a particular candidate
Triggers	<ol style="list-style-type: none"> 2. Election official wants to see the number of seats won by a candidate 3. Election official has to report the number of seats won by a candidate
Preconditions	<ol style="list-style-type: none"> 1. Summary file is present in the folder (i.e. V-Pal successfully ran)
Postconditions	<ol style="list-style-type: none"> 3. Election official knows the number of seats won by the candidate.
Main Course	<ol style="list-style-type: none"> 6. The election official opens the election summary file generated by V-Pal. (EX1) 7. The election official notes down the number written against the candidate's name.
Alternate Courses	None
Exceptions	<p>EX 1 Election official can not open the desired summary file</p> <ol style="list-style-type: none"> 1. EXIT

Name	Re-run of the election
ID	rrun_001

Description	If the election needs a recount or a rerun of the system to make sure it is the correct output
Actors	Election official
Organizational Benefits	Keep track of the specifics of the election for future use and human error-checking
Frequency of use	Every time an election is conducted (or a change in ballot file takes place)
Triggers	Results have been calculated
Preconditions	<ol style="list-style-type: none"> 1. Election is over 2. Election official has access to the ballot file 3. V-Pal is installed and running on the current machine
Postconditions	<ol style="list-style-type: none"> 1. The system found a winner 2. The audit file has been generated
Main Course	<ol style="list-style-type: none"> 1. Election officials have the results from a previous calculation, want to rerun. 2. Run V-Pal through the terminal of the computer on which the ballot file is stored and V-Pal is installed 3. Provide the ballot file name 4. Press the return key (i.e. load the ballot file in V-Pal). (EX 1) 5. Wait for V-Pal to print the winners name and party on the terminal screen. (EX 2) 6. Election official can look at the screen to find the winner. (AC1; AC2)
Alternate Courses	AC 1 Election official wants to open the summary file for the media <ol style="list-style-type: none"> 1. Election official can open the generated summary file to find the winner.

	AC 2 Election official wants to open generated audit file <ol style="list-style-type: none"> 1. Election official can open the generated audit file to find the winner.
Exceptions	EX 1 File is an incorrect file type or incorrectly formatted <ol style="list-style-type: none"> 1. Error message will appear on screen 2. Prompt for the file name. EX 2 Software encounters an error <ol style="list-style-type: none"> 1. Message will appear with the error 2. EXIT