Use-case 1:

Name	Prompt User for filename
ID	user_001
Description	The user will be prompted for filename
Actor	User, System
Organizational Benefits	Users will know which file is used to display the result.
Frequency of Use	Whenever the user runs the system
Triggers	The user selects to run the system
Preconditions	- A text file with ballots results is provided - The text file is openable - The file is in the same directory as the program
Postconditions	Filename is prompted to the user
Main Course	1. User open the program 2. User decides to run the program 3. System prompts user the filename (see AC1, EX1)
Alternate Courses	
Exceptions	Ex1: the text file is missing 1. The program will be terminated at this point because no text source files are provided

Use-case 2:

Name	Read file
ID	System_002
Description	The system need to read in the file
Actor	System
Organizational Benefits	● It ensure the correctness of the voting system ● It saves user's time and work to read files individually
Frequency of Use	Whenever user selects a file to read
Triggers	The user select the option to read file
Preconditions	● File is not empty ● File has correct format for system to read
Postconditions	● User is able to read a file ● File is exported from Excel to into the CSV format
Main Course	1. System prompt user to read file 2. User input filename and select to read file 3. System determines if the file is empty (see EX1) 4. File is not empty 5. System determines if the first line of the file is open party list or closed party list (see AC1, AC2) (see EX2) 6. System export file from Excel into CSV format

Alternate Courses	AC1: First line of the file is "OPL"
	    1. Direct user to user case "Produce audit file for Open Party List"
	
	AC2: First line of the file is "CPL"
	    1. Direct user to user case "Produce audit file for Closed Party List"

Exceptions	Ex1: No value display on open party list
	    1. User cannot read file due to missing data
	
	Ex2: First line of the file is not OPL or CPL
	    1. File does not belong to open party list voting nor closed party list voting

Use-case 3:

Name	Produce audit file for Closed Party List
ID	aduit_003
Description	The system will produce audit file with the election information at the time
Actor	System
Organizational Benefits	● It ensures the correctness and fairness of the voting system
Frequency of Use	Whenever read a file
Triggers	The file is determined to be open party list file from read file step
Preconditions	● The file in read file user case is determined to be open party list file ● The file is Excel format
Postconditions	● Audit file is successfully produced ● No duplicated audit file with same filename is produced
Main Course	1. System determines if the file is Excel format (see EX1) 2. File is Excel format 3. System determines if the first line of the file is closed party list (see EX2) 4. Type of election is closed party list 5. System determines if the second line of the file is number of parties (see EX3) 6. Number of parties are valid 7. System determines if the third line of the Parties in Order of Ballot Ordering (see EX3) 8. Parties in Order of Ballot Ordering are valid 9. System determines if the forth line of the file is number of seats (see EX3) 10. Number of seats are valid 11. System determines if the fifth line of the file is number of ballots(see EX3) 12. Number of seats are ballots 13. System determines if the fifth line of the file is number of candidates (see EX3) 14. Formats are correct 15. System counts the votes(see EX4) 16. Audit file is produced successfully 17. Return to Read file user case step 6

Alternate Courses	AC1: System shows error on producing audit file 1. Return to Read file user case

Exceptions	Ex1: File is not in Excel format
	    1. File is not in Excel format to read
	
	Ex2: First line of the file is not CPL
	    1. File does not belong to open party list voting
	    2. Return to User case "Read file"
	
	EX3: Type is incorrect
	    1. Invalid input
	
	Ex4: Input format is not [char,char,char]
	    1. Incorrect format in [ ] for candidate

Use-case 4:

Name	Produce audit file for Open Party List
ID	aduit_004
Description	The system will produce audit file with the election information at the time
Actor	System
Organizational Benefits	● It ensures the correctness and fairness of the voting system
Frequency of Use	Whenever read a file
Triggers	The file is determined to be open party list file from read file step
Preconditions	● The file in read file user case is determined to be open party list file ● The file is Excel format
Postconditions	● Audit file is successfully produced ● No duplicated audit file with same filename is produced
Main Course	1. System determines if the file is Excel format (see EX1) 2. File is Excel format 3. System determines if the first line of the file is open party list (see EX2) 4. Type of election is open party list 5. System determines if the second line of the file is number of seats (see EX3) 6. Number of seats are valid 7. System determines if the third line of the file is number of ballots (see EX3) 8. Number of ballots are valid 9. System determines if the third line of the file is number of candidates (see EX3) 10. Number of candidates are valid 11. System checks the format the inputs for candidates in [ ] (see EX4) 12. Formats are correct 13. System counts the votes(see EX3) 14. Audit file is produced successfully 15. Return to Read file user case step 6
Alternate Courses	AC1: System shows error on producing audit file 1. Return to Read file user case

Exceptions	Ex1: File is not in Excel format
	    1. File is not in Excel format to read
	
	Ex2: First line of the file is not OPL
	    1. File does not belong to open party list voting
	    2. Return to User case "Read file"
	
	Ex3: Input is not a number
	    1. Invalid input
	
	Ex4: Input format is not [char,char]
	    2. Incorrect format in [ ] for candidate

Use-case 5:

Name	Display for closed party list
ID	screen_005
Description	The screen will display the winner and information about the election
Actor	System
Organizational Benefits	● It gives a direct view of election results ● It helps people have better understanding
Frequency of Use	Whenever program is done
Triggers	System finish counting ballots
Preconditions	● System has finished counting ballots
Postconditions	● The results is displayed to screen ● The information does not contain a long audit of the votes
Main Course	1. System determines what type of election(see AC1)(see EX1) 2. System determines if the highest votes (see AC2) 3. Winner is determined and winner's party is displayed on screen 4. Type of election is displayed 5. Number of Parties is displayed 6. Parties in Order of Ballot Ordering is displayed 7. Number of seats is displayed 8. Number of Ballots is displayed 9. Number of Candidates is displayed

Alternate Courses	AC1: The type of election is OPL
	   1. Display for open party list
	
	AC2: There is tie on votes
	   1. Randomly select the winner in fair coin toss
	   2. Return to Main course step 2

Exceptions	Ex1: First line of the file is not CPL or OPL 1. File does not belong to open party list voting nor closed party list voting

Use-case 6:

Name	Display for open party list
ID	screen_006
Description	The screen will display the winner and information about the election
Actor	System
Organizational Benefits	● It gives a direct view of election results ● It helps people have better understanding
Frequency of Use	Whenever program is done
Triggers	System finish counting ballots
Preconditions	● System has finished counting ballots
Postconditions	● The results is displayed to screen ● The information does not contain a long audit of the votes
Main Course	1. System determines what type of election (see AC1)(see EX1) 2. Type of election is OPL 3. System determines the highest votes (see AC2) 4. Winner is determined and displayed on screen 5. Type of election is displayed 6. Number of seats is displayed 7. Number of ballots is displayed 8. Number of candidate is displayed

Alternate Courses	AC1: Type of election is CPL
	    1. Return to display for closed party list step 1
	
	AC2: There is tie on votes
	    1. Randomly select the winner in fair coin toss
	    2. Return to Main course step 2

Exceptions	Ex1: First line of the file is not OPL or CPL 1. File does not belong to open party list voting nor closed party list voting

Use-case 7:

Name	Show election progress
ID	progress_007
Description	The audit file can be read and shared with media personals
Actor	Programmers, testers, and election officials
Organizational Benefits	● It visualize the process of voting, which makes it clearer ● Audit file could replicate election itself
Frequency of Use	Whenever user wants to view the election progress
Triggers	The user wants to view the election progress
Preconditions	● The audit files are generated
Postconditions	● The voting process is replicated ● The user is able to share with the media personnels
Main Course	1. System open the correct audit file(see AC1)(see AC2)(see EX1) 2. The file is displayed in the correct ballot format 3. System displays the option to share 4. User select media personnels to share with

Alternate Courses	AC1: Type of election is OPL
	    1. System opens the OPL audit file
	    2. Return to main course step 2
	
	AC2: Type of election is CPL
	    1. System opens the CPL audit file
	    2. Return to main course step 2

Exceptions	Ex1: Audit file input is missing 1. Cannot open audit file due to missing data