	Description	Location	Steps to recreate bug and/or TestCase#	Root cause analysis
#1	Null pointer exception happens at random times when running a plurality election This causes some unit and system test to fail at random times	CreateLog() function in the Report class, line 76, when called by a PluralityElection	Run test cases such as pluralitySystemTest file and pluralityElectionUT multiple times	In the CreateLog() function, line 76, in the Report class there is a failure to instantiate the arraylist object contained by the elected hashmap
#2	Possible error when running DisplayStats() in both plurality and STV election classes due to line separators. Initially the \n line separator caused unit test errors, but after changing it to \r\n the unit tests passed.	displayStats() function in both STVElection.java and PluralityElection.java	Run displayStatsTest() cases in both PluralityElectionUT and STVElectionUT to see if that unit test passes or fails.	If it does fail, it would only be because the \r\n line separator is only supported with the type of IDE we used that supports windows line separation. Unix and MacOS support \n so the error may occur if the tests are run on MacOS or Linux.
#3	BallotGeneratorUT tests that test shuffling of ballots fail at around a 30% rate.	shuffleTest() and createSTVBallotsTest() in BallotGeneratorUT	Run BallotGeneratorUT multiple times (at least 5)	The test file used to generate ballots from in these tests have 3 candidates and 100 ballots. Because 3 candidates gives a 3-integer array with only 3 ways to fill it, the probability that a ballot with the same integer array is placed in the same spot is high enough to produced at least every 5 times (around ⅓ of the time).