**General Method used in testing**

* System Testing through the console to check for bugs in the output
* Using junit to perform unit, test, integration test and system test
* Create a “BugTest” source folder which contains all the Junit testing for the program
* “BugTestFiles” folder contains the input and expected output files for the application
  + Folders are labelled according to the application it was used. E.g. wcFiles, sortFiles

**Bug Reports**

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| No. | Description | Testcase | Comments |
| 1 | “sortAll(String toSort)” methods does not sort the content in the order of “special char”, “numbers”, “capital letter”, “simple letter” | TestBugSortApp.java   * testSortAll()   Command   * sort unsorted.txt   Files uses inside “Test Files” folder   * unsorted.txt   Expected Output in “Test Files” folder   * sorted.txt |  |
| 2 | “sortNumber(String toSort) methods treating a “special char + number” as a number. E.g. +0 was treated as number 0 | TestBugSortApp.java   * testSorNumberl()   Command   * sort –n unsorted\_num.txt   Files uses inside “Test Files” folder   * unsorted\_num.txt   Expected Output in “Test Files” folder   * sorted\_num.txt |  |
| 3 | “sort -n unsorted.txt” was not able to sort file containing “special char”, “numbers”, “capital letter”, “simple letter” | TestBugSortApp.java   * testSortWithDashN()   Command   * sort –n unsorted.txt   Files uses inside in “Test Files” folder   * unsorted.txt   Expected Output “Test Files” folder   * sorted\_n.txt |  |
| 4 | “sort unsorted.txt unsorted.txt” was not able to sort multiple files | TestBugSortApp.java   * testMultipleFiles()   Command   * sort unsorted.txt unsorted.txt   Files uses in “Test Files” folder   * unsorted.txt   Expected Output in “Test Files” folder   * sorted\_multiple.txt |  |
| 5 | “wc -lwm wc.txt” composite order was not supported | TestBugWcApp.java   * testCompositeOrder()   Command   * wc -lwm wc.txt   Files uses inside “Test Files” folder   * wc.txt   Expected Output:   * 65 10 12 wc.txt |  |
| 5 | “wc -l -w -m wc.txt” not printing in the order of “byte count”, “word count”, “line count” | TestBugWcApp.java   * testDifferentOptionOrder()   Command   * wc -l -w -m wc.txt   Files uses inside “Test Files” folder   * wc.txt   Expected Output:   * 65 10 12 wc.txt |  |
| 6 | “cat wc.txt | wc” incorrect output. Output contains extra “line count” and “byte count”  Incorrect output:   * 67 10 13 | TestBugWcApp.java   * testCatPipeWc()   Command   * cat wc.txt | wc   Files uses inside “Test Files” folder   * wc.txt   Expected Output:   * 65 10 12 |  |