**Submission of Your Work**

You need to prepare and submit ONE SINGLE MS Word document to Canvas (in your lab section) as LastName\_FirstName\_Labxy.doc. It must contain:

* Only your NAME on page 1
* For ***each*** question, include in this order:
  + Specify the question number, if more than one question.
  + Source code. Copy/Paste your final source code. You must include standard “comment header” even if code is provided. *Do Not* paste a snippet of your source code, it must be copy/pasted.
  + Initial test plan. After reading the requirements, but **before** beginning any coding, create the test case table, below, completed through column Expected Output. Include in your report.
  + Final test plan. Write your program then complete the **test table** with actual output results and include in your report *AFTER* your source code.
  + Output results. Paste in a snippet of output showing results for **every listed test case in your final test plan**, labeled with test case #

Test Table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test # | Valid / Invalid Data | Description of test | Input Value | Expected Output | Actual Output | Test Pass / Fail |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |

* Add / delete rows from Test Table as necessary
* Modify column widths as necessary
* Test both valid and invalid input
* Test for every output expected
* If failure is an expected output and it happens then that test Passes
* Any test that fails means the program must be fixed so that it passes the test
  + Failing tests need a new test row, ie 1a, 1b, etc, showing corrections from original
  + Unless you don’t have time to finish your testing, there should never be a Fail in final test plan

**Implement a recursive merge sort.**

Read an input file containing 21 random numbers in range -250 to 250. Store the values in a linked list using insert-at-front. Display all values *after* storing them, perform the merge sort, then display all values again.