FACULTY OF COMPUTING
UTM Johor Bahru

SECJ2013-05

DATA STRUCTURE & ALGORITHM

Semester 03, 2025/2026

Assignment 1

Lecturer:

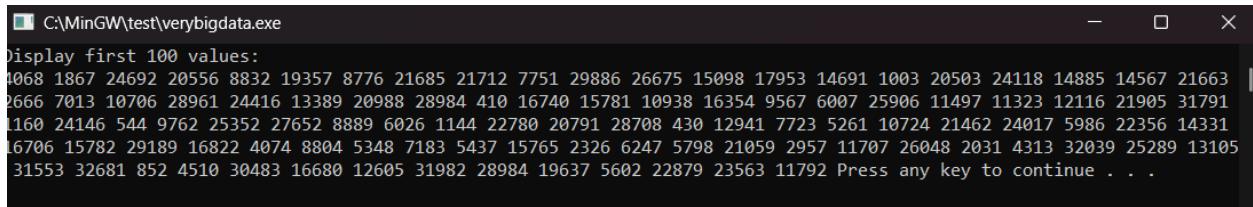**Dr. PANG YEE YONG**

Group Members:

No.	Name	Matric No
1	ABDURRAFIQ BIN ZAKARIA	A24CS0031
2	AHMAD MUNIF BIN BAHARUM	A24CS0038
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SAMPLE DATA

```
C:\MinGW\test\verybigdata.exe                                          —    □    ×

Display first 100 values:
4068 1867 24692 20556 8832 19357 8776 21685 21712 7751 29886 26675 15098 17953 14691 1003 20503 24118 14885 14567 21663
2666 7013 10706 28961 24416 13389 20988 28984 410 16740 15781 10938 16354 9567 6007 25906 11497 11323 12116 21905 31791
160 24146 544 9762 25352 27652 8889 6026 1144 22780 20791 28708 430 12941 7723 5261 10724 21462 24017 5986 22356 14331
6706 15782 29189 16822 4074 8804 5348 7183 5437 15765 2326 6247 5798 21059 2957 11707 26048 2031 4313 32039 25289 13105
31553 32681 852 4510 30483 16680 12605 31982 28984 19637 5602 22879 23563 11792 Press any key to continue . . .
```

OUTPUT

```
Starting Phase 1 (Initial Sort)...
Phase 1 complete. Total runs created: 9
Merging 9 runs of size 100000...
Merging 5 runs of size 200000...
Merging 3 runs of size 400000...
Merging 2 runs of size 800000...

--- Preview of sortedfile.dat (First 100 values) ---
0 0 0 1 1 1 1 2 2 2 3 3 6 6 7 7 7 8 8 8 8 8 8 9 9 9 9 10 12 12 12 13 13 13 13 13 14 15 15 15 15 15 16 16 16 16 17 17 17
17 17 18 18 19 20 20 21 21 22 23 23 24 25 25 26 26 26 26 28 28 29 30 30 30 31 31 31 31 32 32 32 33 33 33 34 34 34 35 35
36 36 37 37 37 37 38 38 39 39 ... (more data)
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--- Tally Verification ---
Original File Count: 800004 integers
Sorted File Count:   800004 integers
Result: SUCCESS. The counts tally.

Press Enter to exit...
```

JUSTIFICATION

We successfully coded a program that sorts verybigdata into ascending order. The output shows the sorted list in ascending order. So, the sort is successful.