

ahmad@ubuntu:~/Desktop\$ g++ Prog01tpmm.cpp

ahmad@ubuntu:~/Desktop\$./a.out

Data records from file:

19 21 42 54 98 72 31 85 43 45 6 58 20 7 14 15 16 23 26 27 51 3 12 30 81 36 77 73 49 33 68 61 5 87

Lists in phase One is 5

Lists in phase Two is 2

more lists is 1

Total lists is 7

final lists is 8

Phase One *****

lists we have to sort in memory :

19 21 42 54 98 72 31 85

43 45 6 58 20 7 14 15

16 23 26 27 51 3 12 30

81 36 77 73 49 33 68 61

5 87 91

List 1 starts at 36 and ends at 43 with size 8

List 2 starts at 44 and ends at 51 with size 8

List 3 starts at 52 and ends at 59 with size 8

List 4 starts at 60 and ends at 67 with size 8

List 5 starts at 68 and ends at 70 with size 3

List 6 starts at 71 and ends at 94 with size 24

List 7 starts at 95 and ends at 105 with size 11

List 8 starts at 106 and ends at 140 with size 35

19 21 31 42 54 72 85 98

6 7 14 15 20 43 45 58

3 12 16 23 26 27 30 51

33 36 49 61 68 73 77 81

5 87 91

Phase Two *****

input buffer: 19 21 31 42 54 72 85 98 6 7 14 15 20 43 45 58 3 12 16 23 26 27 30 51

Memory: 19 21 6 7 3 12 0 0

Memory: 19 21 6 7 12 0 3 0

Memory: 19 21 6 7 12 0 0 0

Memory: 19 21 7 0 12 0 6 0

Memory: 19 21 7 0 12 0 0 0

Memory: 19 21 14 15 12 0 7 0

Memory: 19 21 14 15 12 0 0 0

Memory: 19 21 14 15 16 23 12 0

Memory: 19 21 14 15 16 23 0 0

Memory: 19 21 15 0 16 23 14 0

Memory: 19 21 15 0 16 23 0 0

Memory: 19 21 20 43 16 23 15 0

Memory: 19 21 20 43 16 23 0 0

Memory: 19 21 20 43 23 0 16 0

Memory: 19 21 20 43 23 0 0 0

Memory: 21 0 20 43 23 0 19 0
Memory: 21 0 20 43 23 0 0 0
Memory: 21 0 43 0 23 0 20 0
Memory: 21 0 43 0 23 0 0 0
Memory: 31 42 43 0 23 0 21 0
Memory: 31 42 43 0 23 0 0 0
Memory: 31 42 43 0 26 27 23 0
Memory: 31 42 43 0 26 27 0 0
Memory: 31 42 43 0 27 0 26 0
Memory: 31 42 43 0 27 0 0 0
Memory: 31 42 43 0 30 51 27 0
Memory: 31 42 43 0 30 51 0 0
Memory: 31 42 43 0 51 0 30 0
Memory: 31 42 43 0 51 0 0 0
Memory: 42 0 43 0 51 0 31 0
Memory: 42 0 43 0 51 0 0 0
Memory: 54 72 43 0 51 0 42 0
Memory: 54 72 43 0 51 0 0 0
Memory: 54 72 45 58 51 0 43 0
Memory: 54 72 45 58 51 0 0 0
Memory: 54 72 58 0 51 0 45 0
Memory: 54 72 58 0 51 0 0 0
Memory: 54 72 58 0 0 0 51 0
Memory: 54 72 58 0 0 0 0 0
Memory: 72 0 58 0 0 0 54 0
Memory: 72 0 58 0 0 0 0 0
Memory: 72 0 0 0 0 0 58 0
Memory: 72 0 0 0 0 0 0 0
Memory: 85 98 0 0 0 0 72 0

Memory: 85 98 0 0 0 0 0 0

Memory: 98 0 0 0 0 0 85 0

Memory: 98 0 0 0 0 0 0 0

Memory: 0 0 0 0 0 0 98 0

Memory: 0 0 0 0 0 0 0 0

list aftersort 3 6 7 12 14 15 16 19 20 21 23 26 27 30 31 42 43 45 51 54 58 72 85 98

input buffer: 33 36 49 61 68 73 77 81 5 87 91

Memory: 33 36 5 87 0 0 0 0

Memory: 33 36 87 0 0 0 5 0

Memory: 33 36 87 0 0 0 0 0

Memory: 36 0 87 0 0 0 33 0

Memory: 36 0 87 0 0 0 0 0

Memory: 49 61 87 0 0 0 36 0

Memory: 49 61 87 0 0 0 0 0

Memory: 61 0 87 0 0 0 49 0

Memory: 61 0 87 0 0 0 0 0

Memory: 68 73 87 0 0 0 61 0

Memory: 68 73 87 0 0 0 0 0

Memory: 73 0 87 0 0 0 68 0

Memory: 73 0 87 0 0 0 0 0

Memory: 77 81 87 0 0 0 73 0

Memory: 77 81 87 0 0 0 0 0

Memory: 81 0 87 0 0 0 77 0

Memory: 81 0 87 0 0 0 0 0

Memory: 0 0 87 0 0 0 81 0

Memory: 0 0 87 0 0 0 0 0

Memory: 0 0 91 0 0 0 87 0

Memory: 0 0 91 0 0 0 0 0

Memory: 0 0 0 0 0 0 91 0

Memory: 0 0 0 0 0 0 0 0

list after sort 5 33 36 49 61 68 73 77 81 87 91

input buffer: 3 6 7 12 14 15 16 19 20 21 23 26 27 30 31 42 43 45 51 54 58 72 85 98 5 33 36 49 61 68 73
77 81 87 91

Memory: 3 6 5 33 0 0 0 0

Memory: 6 0 5 33 0 0 3 0

Memory: 6 0 5 33 0 0 0 0

Memory: 6 0 33 0 0 0 5 0

Memory: 6 0 33 0 0 0 0 0

Memory: 7 12 33 0 0 0 6 0

Memory: 7 12 33 0 0 0 0 0

Memory: 12 0 33 0 0 0 7 0

Memory: 12 0 33 0 0 0 0 0

Memory: 14 15 33 0 0 0 12 0

Memory: 14 15 33 0 0 0 0 0

Memory: 15 0 33 0 0 0 14 0

Memory: 15 0 33 0 0 0 0 0

Memory: 16 19 33 0 0 0 15 0

Memory: 16 19 33 0 0 0 0 0

Memory: 19 0 33 0 0 0 16 0

Memory: 19 0 33 0 0 0 0 0

Memory: 20 21 33 0 0 0 19 0

Memory: 20 21 33 0 0 0 0 0

Memory: 21 0 33 0 0 0 20 0

Memory: 21 0 33 0 0 0 0 0

Memory: 23 26 33 0 0 0 21 0

Memory: 23 26 33 0 0 0 0 0

Memory: 26 0 33 0 0 0 23 0

Memory: 26 0 33 0 0 0 0 0

Memory: 27 30 33 0 0 0 26 0

Memory: 27 30 33 0 0 0 0 0

Memory: 30 0 33 0 0 0 27 0

Memory: 30 0 33 0 0 0 0 0

Memory: 31 42 33 0 0 0 30 0

Memory: 31 42 33 0 0 0 0 0

Memory: 42 0 33 0 0 0 31 0

Memory: 42 0 33 0 0 0 0 0

Memory: 42 0 36 49 0 0 33 0

Memory: 42 0 36 49 0 0 0 0

Memory: 42 0 49 0 0 0 36 0

Memory: 42 0 49 0 0 0 0 0

Memory: 43 45 49 0 0 0 42 0

Memory: 43 45 49 0 0 0 0 0

Memory: 45 0 49 0 0 0 43 0

Memory: 45 0 49 0 0 0 0 0

Memory: 51 54 49 0 0 0 45 0

Memory: 51 54 49 0 0 0 0 0

Memory: 51 54 61 68 0 0 49 0

Memory: 51 54 61 68 0 0 0 0

Memory: 54 0 61 68 0 0 51 0

Memory: 54 0 61 68 0 0 0 0

Memory: 58 72 61 68 0 0 54 0

Memory: 58 72 61 68 0 0 0 0

Memory: 72 0 61 68 0 0 58 0

Memory: 72 0 61 68 0 0 0 0
Memory: 72 0 68 0 0 0 61 0
Memory: 72 0 68 0 0 0 0 0
Memory: 72 0 73 77 0 0 68 0
Memory: 72 0 73 77 0 0 0 0
Memory: 85 98 73 77 0 0 72 0
Memory: 85 98 73 77 0 0 0 0
Memory: 85 98 77 0 0 0 73 0
Memory: 85 98 77 0 0 0 0 0
Memory: 85 98 81 87 0 0 77 0
Memory: 85 98 81 87 0 0 0 0
Memory: 85 98 87 0 0 0 81 0
Memory: 85 98 87 0 0 0 0 0
Memory: 98 0 87 0 0 0 85 0
Memory: 98 0 87 0 0 0 0 0
Memory: 98 0 91 0 0 0 87 0
Memory: 98 0 91 0 0 0 0 0
Memory: 98 0 0 0 0 0 91 0
Memory: 98 0 0 0 0 0 0 0
Memory: 0 0 0 0 0 0 98 0
Memory: 0 0 0 0 0 0 0 0

list after sort 3 5 6 7 12 14 15 16 19 20 21 23 26 27 30 31 33 36 42 43 45 49 51 54 58 61 68 72 73 77 81
85 87 91 98

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