

COMP 6521 - Advanced Databases Assignment # 1

SUBMITTED BY

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Sample 1 :

No of records(int) : 100

Size of memory : 100 bytes

No of records processed at a time in memory : $100/4 = 25$

Total no of Runs : $100/25 = 4$ runs

Select option :

1. Create a random list of integers
2. Display the random list (for debugging purposes only)
3. Run 2PMMS
4. Exit

1

Enter numbers to generate:

100

Unsorted input file :

1. 1425651132
2. 978905668
3. 845707054
4. 2084716391
5. 117361171
6. 200629643
7. 309658126
8. 1297453769
9. 1244903373
10. 473530051
11. 1063196444
12. 609305662
13. 1320452479
14. 1746335122
15. 1303010160
16. 170744429
17. 59611761

18. 2012134162
19. 1894496068
20. 13939671
21. 963332548
22. 380033862
23. 609768167
24. 1247815138
25. 1575017903
26. 65049656
27. 1673146571
28. 272646785
29. 1417711845
30. 1301482672
31. 301143736
32. 2090176129
33. 979969043
34. 186154131
35. 785356835
36. 1609142897
37. 1056722309
38. 1887387861
39. 519517082
40. 234344495
41. 960577768
42. 1380840732
43. 459511126
44. 1943815947
45. 656978218
46. 662785267
47. 689451251
48. 292409499
49. 1050398334
50. 721159847
51. 1458865211
52. 1768243227
53. 907403899
54. 848097730
55. 2039379230
56. 618057342
57. 1000361060
58. 95724321
59. 1361534142
60. 890371349
61. 1736621954
62. 152309940
63. 1126527399
64. 601143515
65. 133547438
66. 1720118994
67. 941908764
68. 1468082267
69. 1120118763
70. 1627408695
71. 1422595980
72. 1012018750

73. 1361313583
74. 1139634587
75. 1262592036
76. 318851701
77. 56643394
78. 399179247
79. 1149342590
80. 1905337343
81. 1091841472
82. 307834934
83. 82583926
84. 245015895
85. 2118227769
86. 739820030
87. 297030173
88. 120534398
89. 2098869367
90. 202288507
91. 1776353735
92. 1774270368
93. 1919447519
94. 2111647294
95. 1024543807
96. 774675301
97. 51342064
98. 648663959
99. 484915483
100. 244049879

Enter Ram Size in Bytes:

100

Phase 1 started :

End of Phase 1 => 4 files are generated.

Phase 2 started :

End of Phase 2 => Sorted numbers are written into Output.txt file.

RUN 1 :

```
1 13939671
2 59611761
3 117361171
4 170744429
5 200629643
6 309658126
7 380033862
8 473530051
9 609305662
10 609768167
11 845707054
12 963332548
13 978905668
14 1063196444
15 1244903373
16 1247815138
17 1297453769
18 1303010160
19 1320452479
20 1425651132
21 1575017903
22 1746335122
23 1894496068
24 2012134162
25 2084716391
26
```

RUN 2 :

```
1 65049656
2 186154131
3 234344495
4 272646785
5 292409499
6 301143736
7 459511126
8 519517082
9 656978218
10 662785267
11 689451251
12 721159847
13 785356835
14 960577768
15 979969043
16 1050398334
17 1056722309
18 1301482672
19 1380840732
20 1417711845
21 1609142897
22 1673146571
23 1887387861
24 1943815947
25 2090176129
26
```

RUN 3 :

1	95724321
2	133547438
3	152309940
4	601143515
5	618057342
6	848097730
7	890371349
8	907403899
9	941908764
10	1000361060
11	1012018750
12	1120118763
13	1126527399
14	1139634587
15	1262592036
16	1361313583
17	1361534142
18	1422595980
19	1458865211
20	1468082267
21	1627408695
22	1720118994
23	1736621954
24	1768243227
25	2039379230
26	

RUN 4:

1	51342064
2	56643394
3	82583926
4	120534398
5	202288507
6	244049879
7	245015895
8	297030173
9	307834934
10	318851701
11	399179247
12	484915483
13	648663959
14	739820030
15	774675301
16	1024543807
17	1091841472
18	1149342590
19	1774270368
20	1776353735
21	1905337343
22	1919447519
23	2098869367
24	2111647294
25	2118227769
26	

Final Output :

```
1 13939671
2 51342064
3 56643394
4 59611761
5 65049656
6 82583926
7 95724321
8 117361171
9 120534398
10 133547438
11 152309940
12 170744429
13 186154131
14 200629643
15 202288507
16 234344495
17 244049879
18 245015895
19 272646785
20 292409499
21 297030173
22 301143736
23 307834934
24 309658126
25 318851701
26 380033862
27 399179247
28 459511126
29 473530051
30 484915483
31 519517082
32 601143515
33 609305662
34 609768167
35 618057342
36 648663959
37 656978218
38 662785267
39 689451251
40 721159847
41 739820030
42 774675301
43 785356835
44 845707054
45 848097730
46 890371349
47 907403899
48 941908764
49 960577768
50 963332548
51 978905668
```

52 979969043
53 1000361060
54 1012018750
55 1024543807
56 1050398334
57 1056722309
58 1063196444
59 1091841472
60 1120118763
61 1126527399
62 1139634587
63 1149342590
64 1244903373
65 1247815138
66 1262592036
67 1297453769
68 1301482672
69 1303010160
70 1320452479
71 1361313583
72 1361534142
73 1380840732
74 1417711845
75 1422595980
76 1425651132
77 1458865211
78 1468082267
79 1575017903
80 1609142897
81 1627408695
82 1673146571
83 1720118994
84 1736621954
85 1746335122
86 1768243227
87 1774270368
88 1776353735
89 1887387861
90 1894496068
91 1905337343
92 1919447519
93 1943815947
94 2012134162
95 2039379230
96 2084716391
97 2090176129
98 2098869367
99 2111647294
100 2118227769
101

Sample 2 :

No of records(int) : 50

Size of memory : 200 bytes

No of records processed at a time in memory : $200/4 = 50$

Total no of Runs : $50/50 = 1$ runs

Select option :

1. Create a random list of integers
2. Display the random list (for debugging purposes only)
3. Run 2PMMS
4. Exit

1

Enter numbers to generate:

50

Select option :

1. Create a random list of integers
2. Display the random list (for debugging purposes only)
3. Run 2PMMS
4. Exit

3

Enter Ram Size in Bytes:

200

Phase 1 started :

End of Phase 1

Phase 2 not required as all numbers can be sorted in single block

Unsorted input file :

1	675187146
2	1860731860
3	558834693
4	883508515
5	1295974098
6	1554209120
7	622834358
8	1044821513
9	26402913
10	2125698766
11	1322520771
12	722118146
13	1416908413
14	2050501755
15	250110777
16	359604679
17	655603636
18	905660284
19	1014781496
20	807744718
21	1499907456
22	1027933014
23	405660969
24	1999704727
25	1014394054
26	29703510
27	1401107470
28	1691568789
29	1711686777
30	721486735
31	1320119284
32	830542008
33	162489436
34	1102952814
35	571190406
36	1409565843
37	1403727332
38	892054523
39	64767164
40	662470959
41	1169064251
42	1874030510
43	923501744
44	1929715563
45	1148977249
46	1709507052
47	1736874641
48	920171790
49	492577389
50	1220364317

RUN 1 and Output file :

```
1 26402913
2 29703510
3 64767164
4 162489436
5 250110777
6 359604679
7 405660969
8 492577389
9 558834693
10 571190406
11 622834358
12 655603636
13 662470959
14 675187146
15 721486735
16 722118146
17 807744718
18 830542008
19 883508515
20 892054523
21 905660284
22 920171790
23 923501744
24 1014394054
25 1014781496
26 1027933014
27 1044821513
28 1102952814
29 1148977249
30 1169064251
31 1220364317
32 1295974098
33 1320119284
34 1322520771
35 1401107470
36 1403727332
37 1409565843
38 1416908413
39 1499907456
40 1554209120
41 1691568789
42 1709507052
43 1711686777
44 1736874641
45 1860731860
46 1874030510
47 1929715563
48 1999704727
49 2050501755
50 2125698766
51
```