

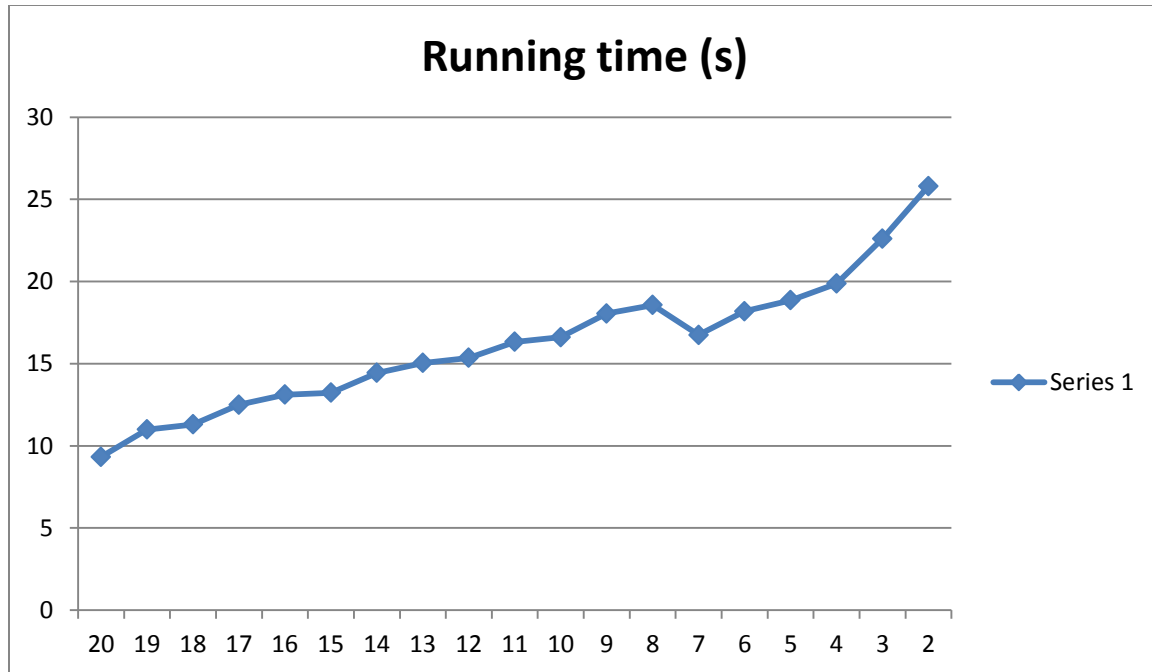
Report for CSE411 Homework#8

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Problem2:

mpirun n0-19 running time: 9.327431
mpirun n0-18 running time: 10.993295
mpirun n0-17 running time: 11.302842
mpirun n0-16 running time: 12.498235
mpirun n0-15 running time: 13.119064
mpirun n0-14 running time: 13.236331
mpirun n0-13 running time: 14.435278
mpirun n0-12 running time: 15.045784
mpirun n0-11 running time: 15.350539
mpirun n0-10 running time: 16.329253
mpirun n0-9 running time: 16.611974
mpirun n0-8 running time: 18.052551
mpirun n0-7 running time: 18.569092
mpirun n0-6 running time: 16.748755
mpirun n0-5 running time: 18.184497
mpirun n0-4 running time: 18.855488
mpirun n0-3 running time: 19.868366
mpirun n0-2 running time: 22.612374
mpirun n0-1 running time: 25.802084



Conclusion: from the table and the above figure we can see that there is an obvious speedup when using an increasing number of nodes.

Problem3:

mpirun n0-19 running time: 9.084685

mpirun n0-18 running time: 10.234686

mpirun n0-17 running time: 10.458397

mpirun n0-16 running time: 12.324554

mpirun n0-15 running time: 12.235348

mpirun n0-14 running time: 13.174940

mpirun n0-13 running time: 12.793482

mpirun n0-12 running time: 14.032853

mpirun n0-11 running time: 15.018392

mpirun n0-10 running time: 13.430183

mpirun n0-9 running time: 15.018402

mpirun n0-8 running time: 18.023937

mpirun n0-7 running time: 17.269452

mpirun n0-6 running time: 16.290116

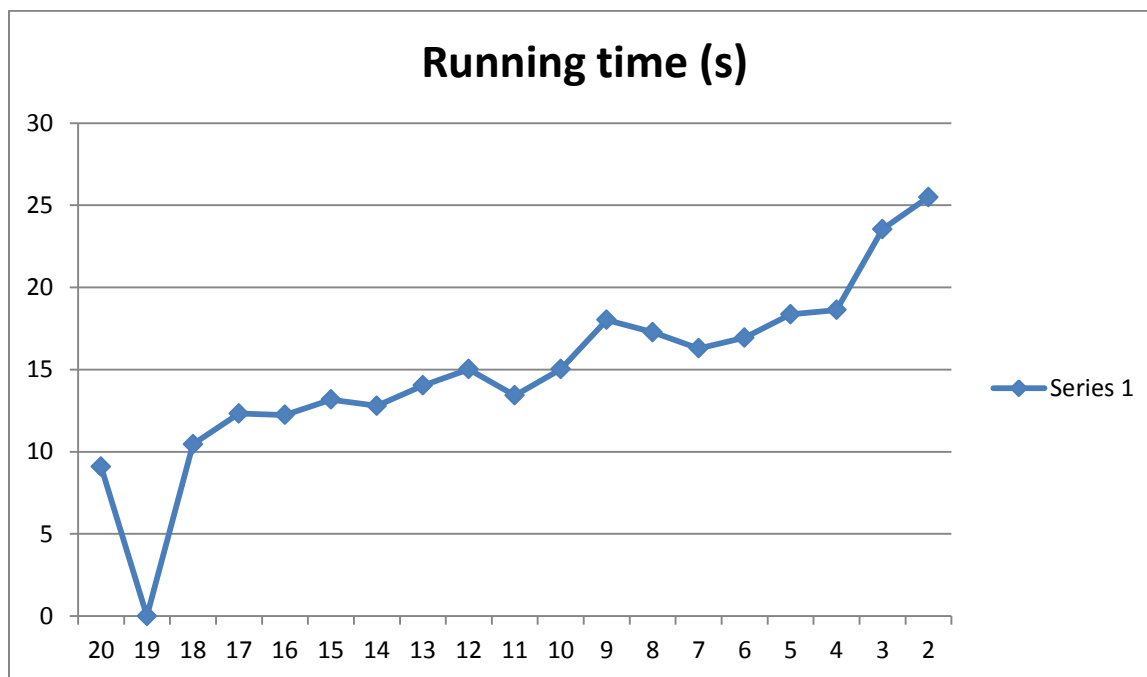
mpirun n0-5 running time: 16.939014

mpirun n0-4 running time: 18.359828

mpirun n0-3 running time: 18.630326

mpirun n0-2 running time: 23.543062

mpirun n0-1 running time: 25.493029

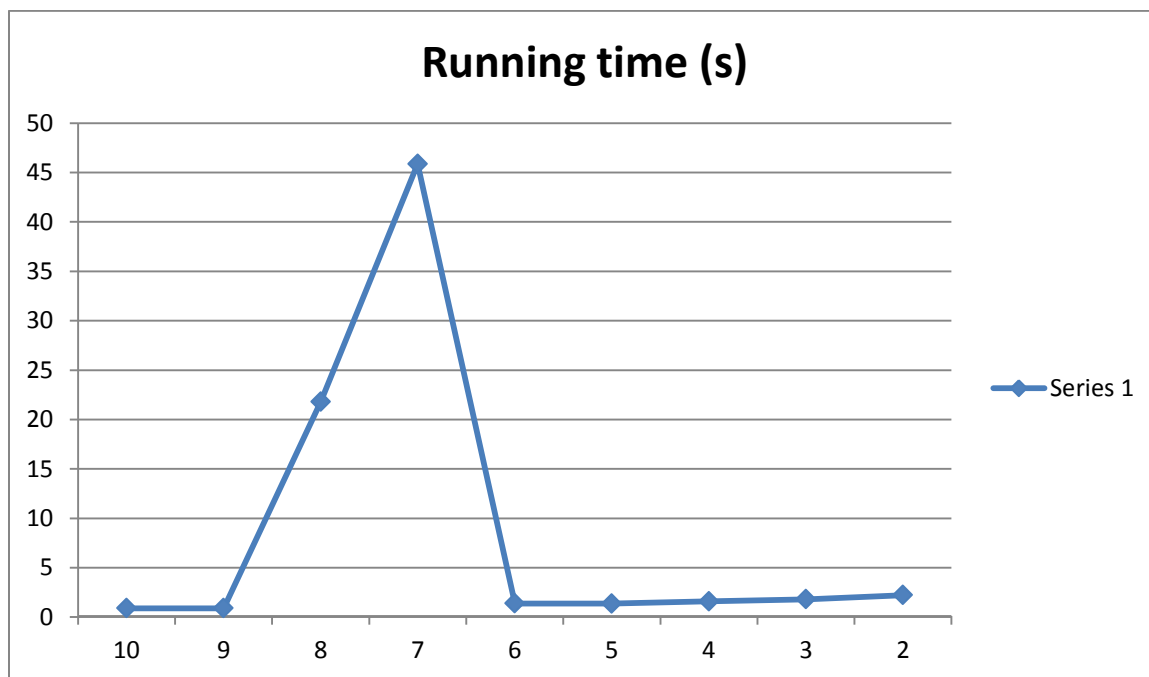


Conclusion: from the table and the figure we can see that there is a slight speedup when spreads the files in multiple nodes. The average improved running time is: **1.3s**

Problem4:

mpirun n0-9 running time: 0.904115

mpirun n0-8 running time: 0.896310
mpirun n0-7 running time: 21.783169
mpirun n0-6 running time: 45.873660
mpirun n0-5 running time: 1.377519
mpirun n0-4 running time: 1.369468
mpirun n0-3 running time: 1.586637
mpirun n0-2 running time: 1.799614
mpirun n0-1 running time: 2.223329



Conclusion: from the results, I can see a slight speed up when using more nodes. But this trend is not obvious. Sometimes the results totally disobey the rule. This may be caused by unstable network environment and conflicts of requesting network recourses. This suggests presence of bottlenecks of sunlab when connecting to the outside world. The speed is unstable and the bandwidth changes all the time.