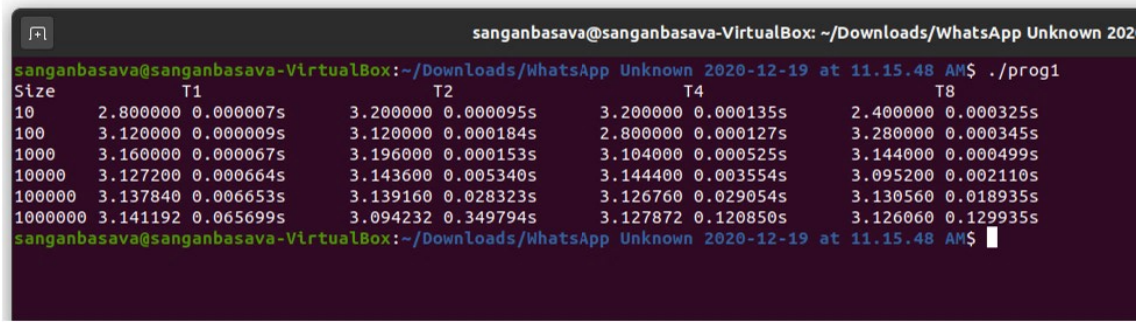
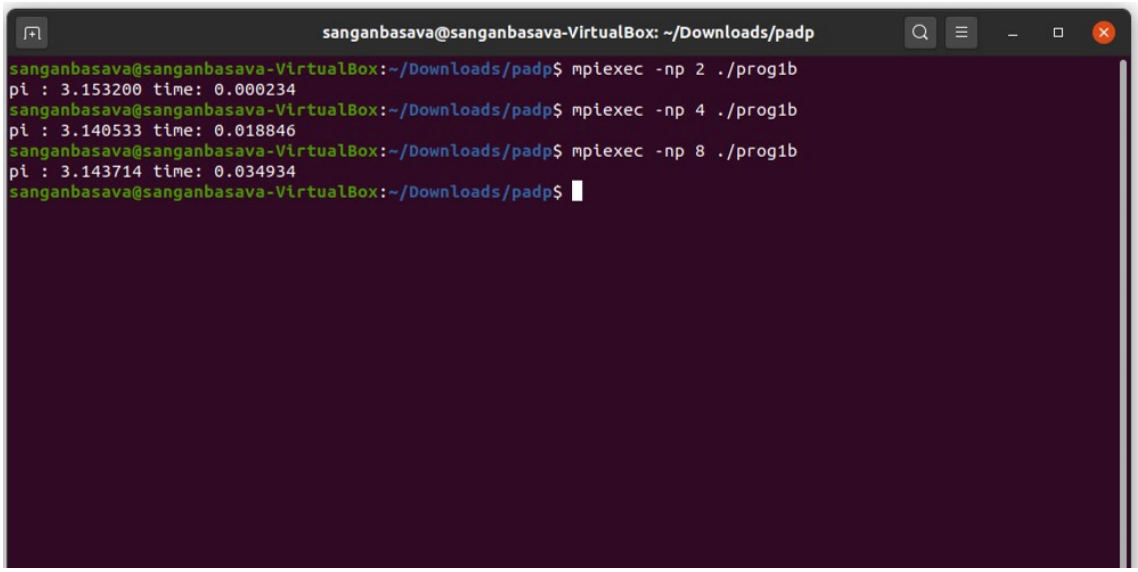
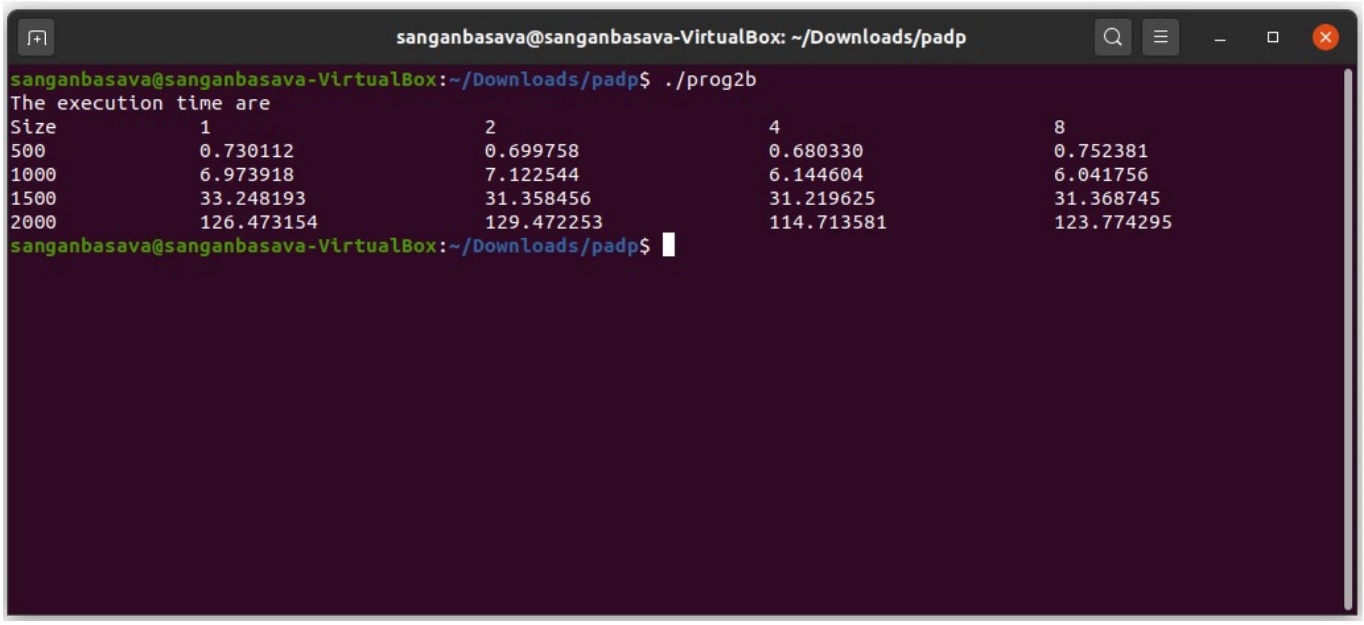
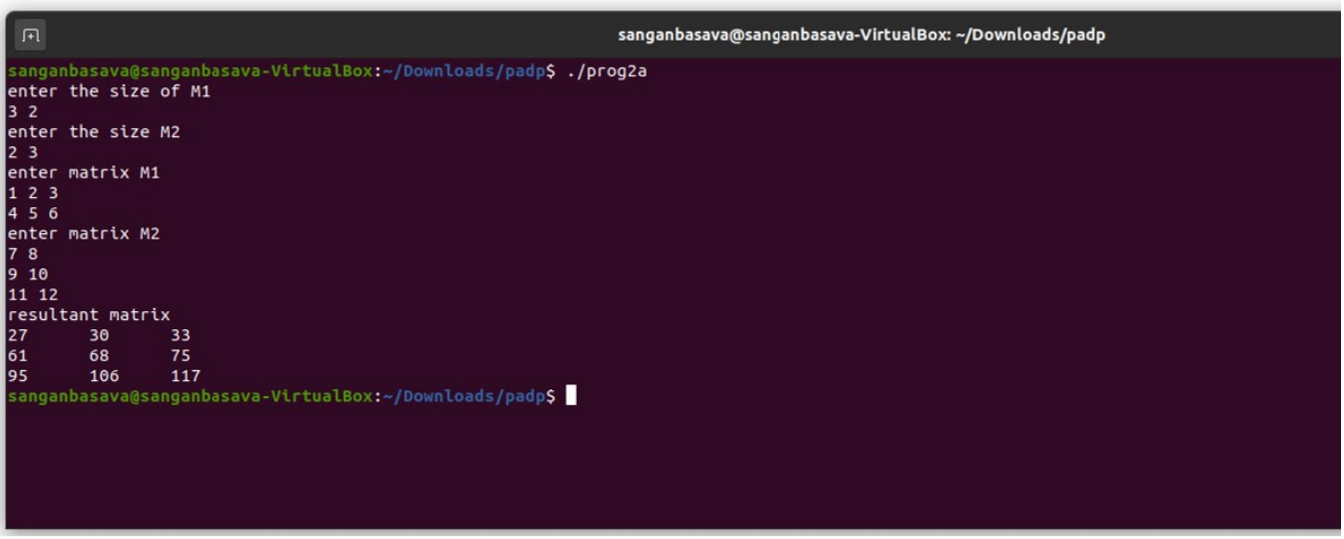
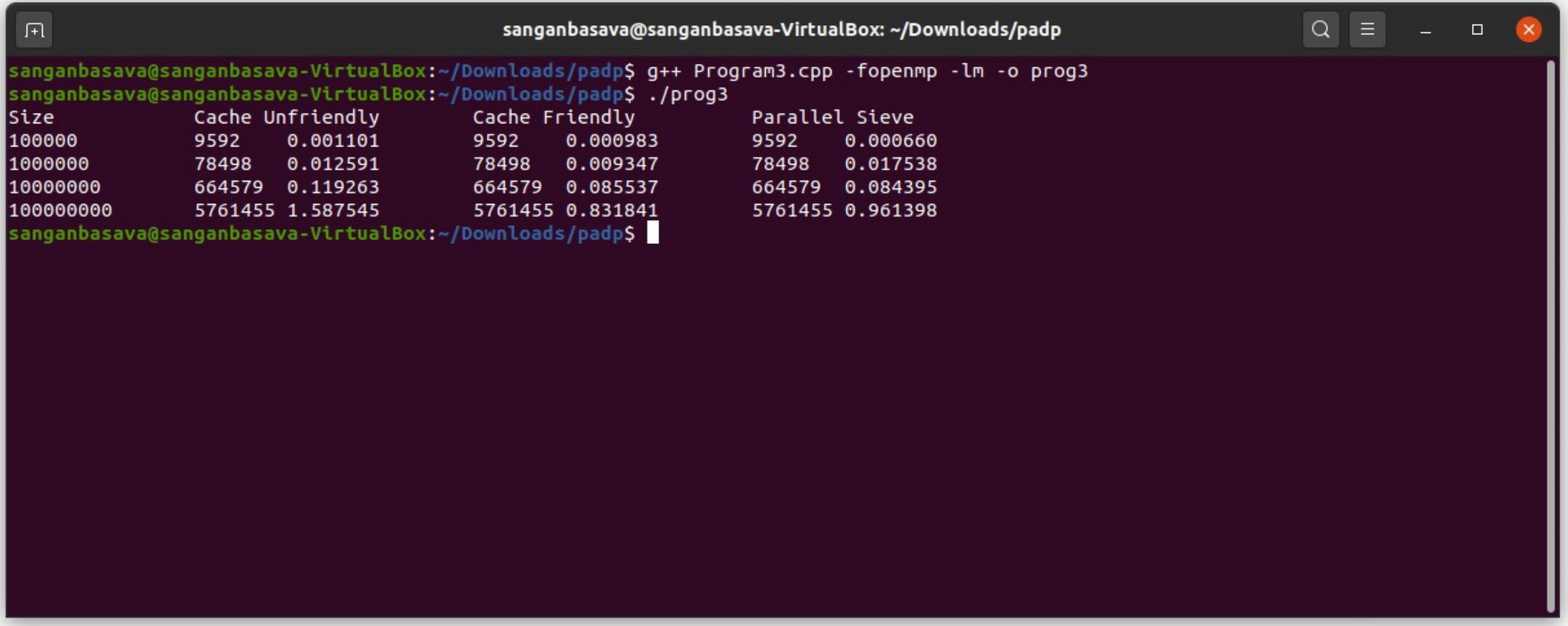
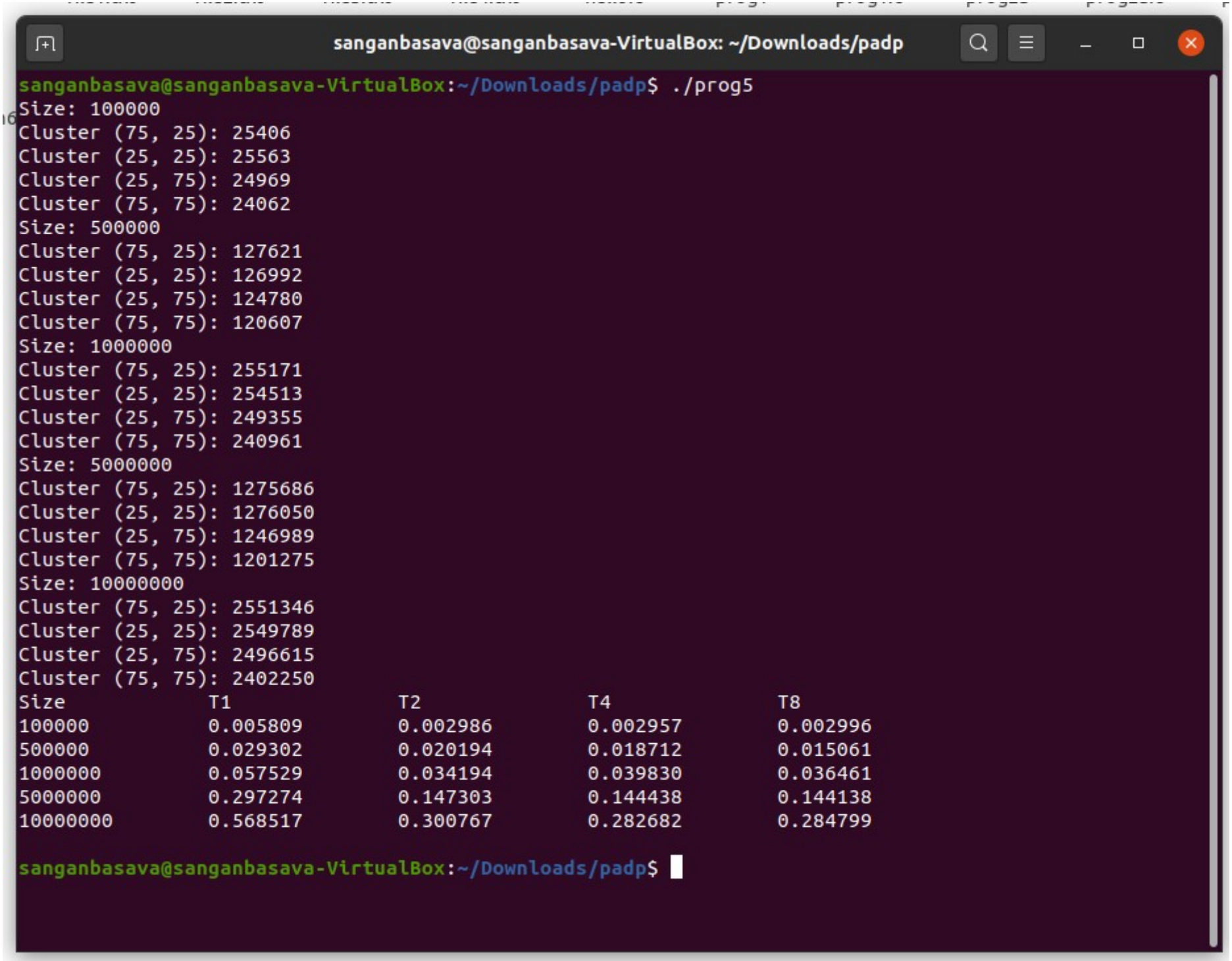

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/WhatsApp Unknown 202
sanganbasava@sanganbasava-VirtualBox:~/Downloads/WhatsApp Unknown 2020-12-19 at 11.15.48 AM$ ./prog1
Size T1 T2 T4 T8
10 2.800000 0.000007s 3.200000 0.000095s 3.200000 0.000135s 2.400000 0.000325s
100 3.120000 0.000009s 3.120000 0.000184s 2.800000 0.000127s 3.280000 0.000345s
1000 3.160000 0.000067s 3.196000 0.000153s 3.104000 0.000525s 3.144000 0.000499s
10000 3.127200 0.000664s 3.143600 0.005340s 3.144400 0.003554s 3.095200 0.002110s
100000 3.137840 0.006653s 3.139160 0.028323s 3.126760 0.029054s 3.130560 0.018935s
1000000 3.141192 0.065699s 3.094232 0.349794s 3.127872 0.120850s 3.126060 0.129935s
sanganbasava@sanganbasava-VirtualBox:~/Downloads/WhatsApp Unknown 2020-12-19 at 11.15.48 AM$

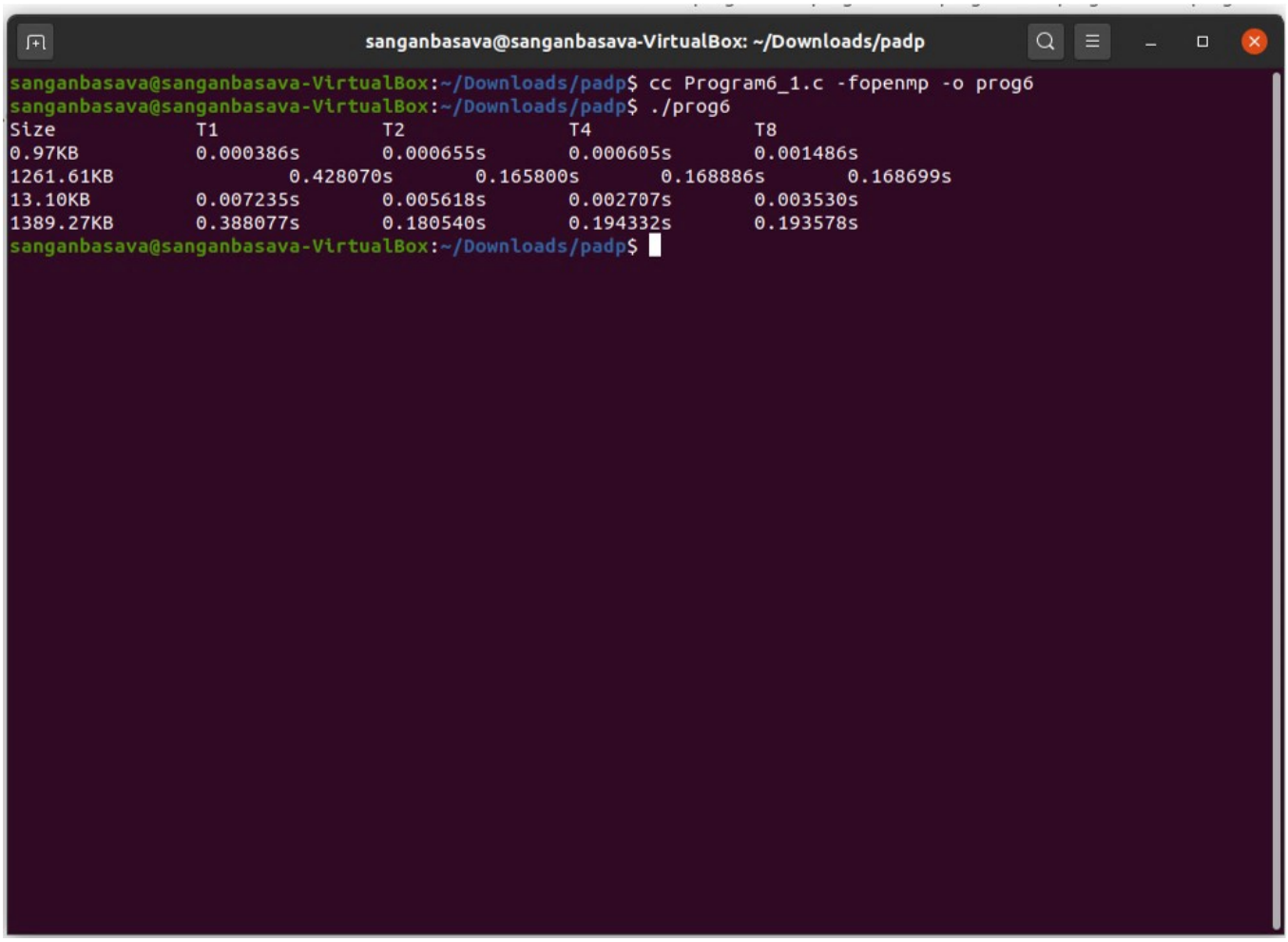

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ mpiexec -np 2 ./prog1b
pi : 3.153200 time: 0.000234
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ mpiexec -np 4 ./prog1b
pi : 3.140533 time: 0.018846
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ mpiexec -np 8 ./prog1b
pi : 3.143714 time: 0.034934
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

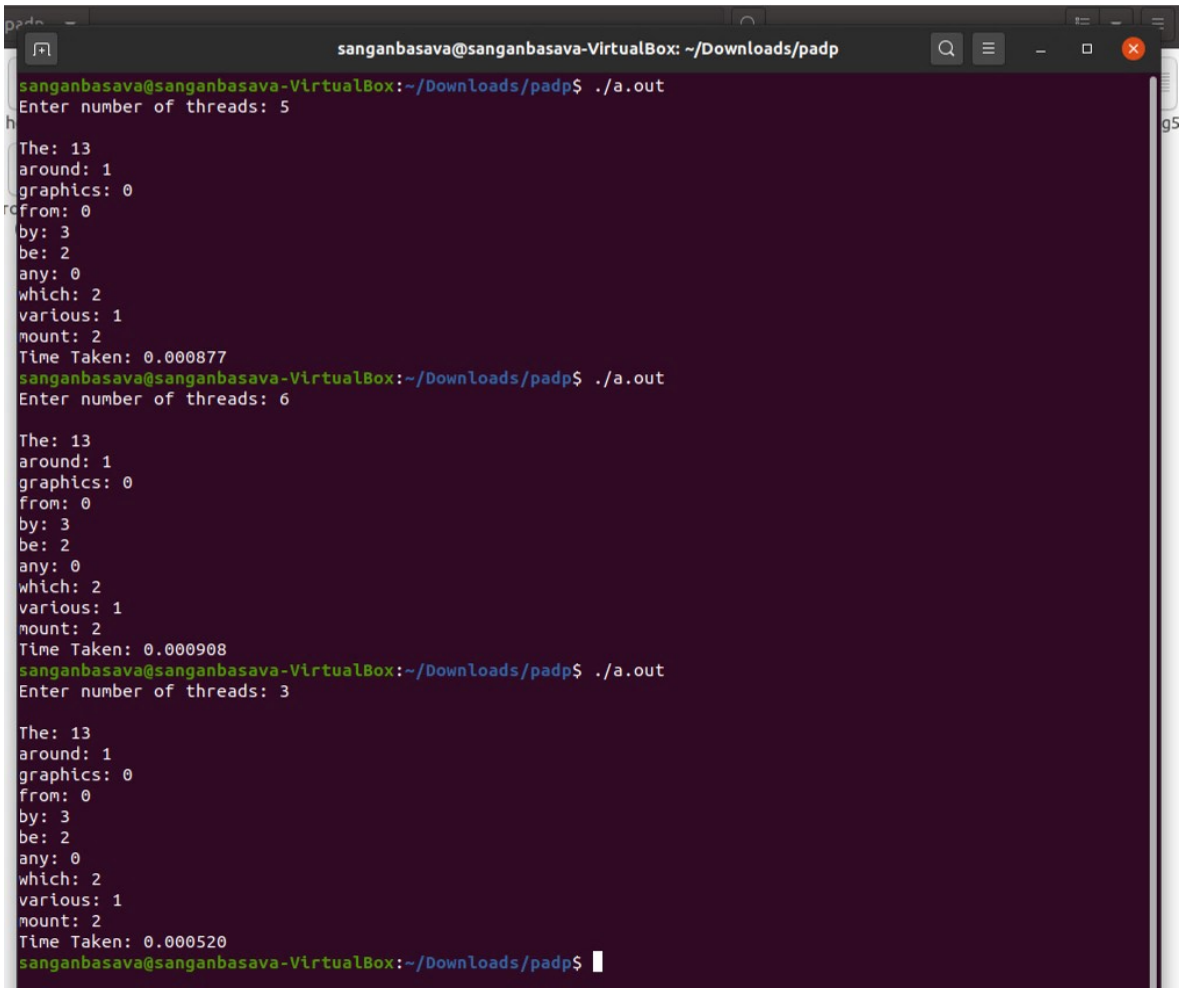

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./prog2b
The execution time are
Size 1 2 4 8
500 0.730112 0.699758 0.680330 0.752381
1000 6.973918 7.122544 6.144604 6.041756
1500 33.248193 31.358456 31.219625 31.368745
2000 126.473154 129.472253 114.713581 123.774295
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

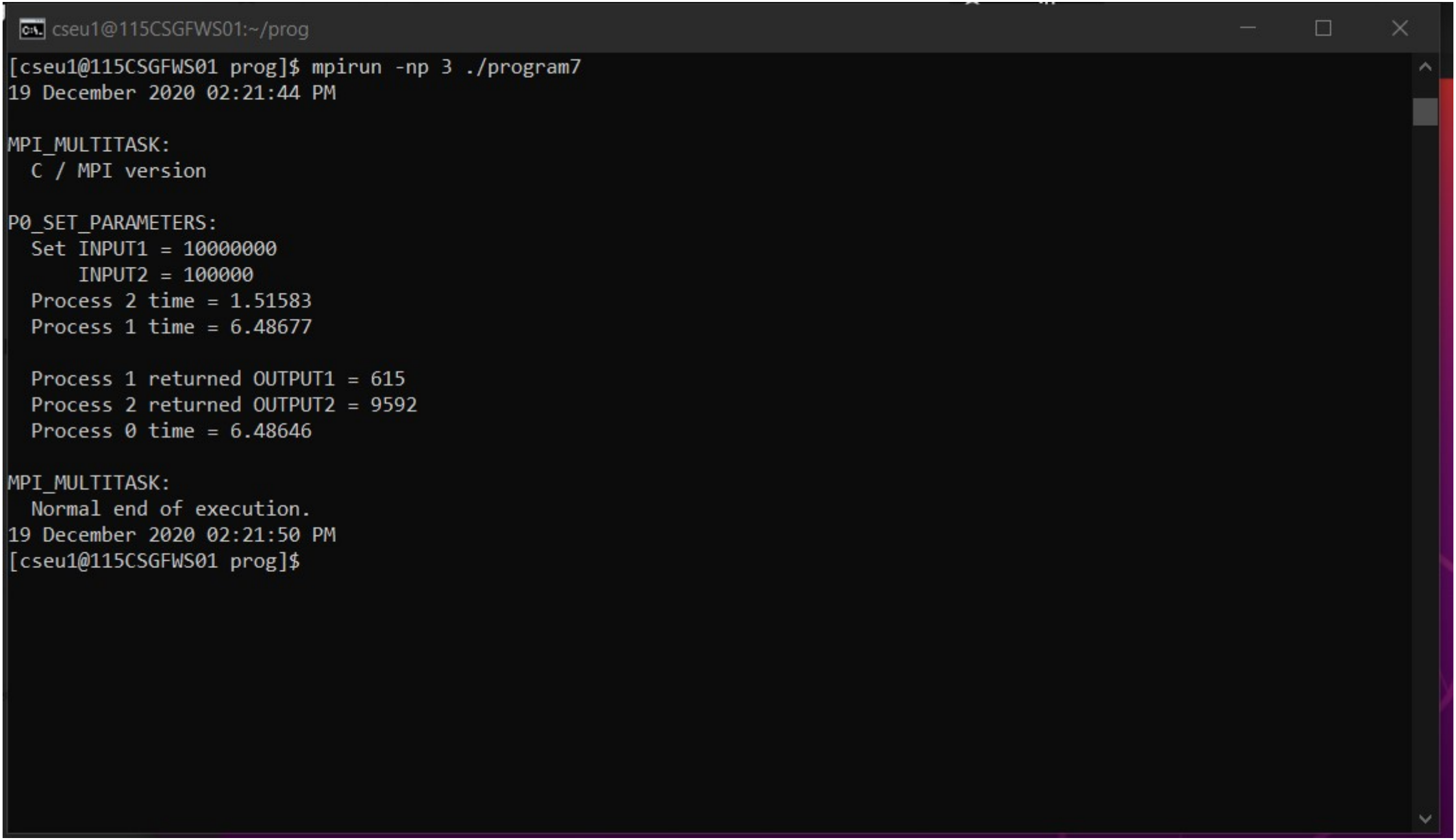

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./prog2a
enter the size of M1
3 2
enter the size M2
2 3
enter matrix M1
1 2 3
4 5 6
enter matrix M2
7 8
9 10
11 12
resultant matrix
27 30 33
61 68 75
95 106 117
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

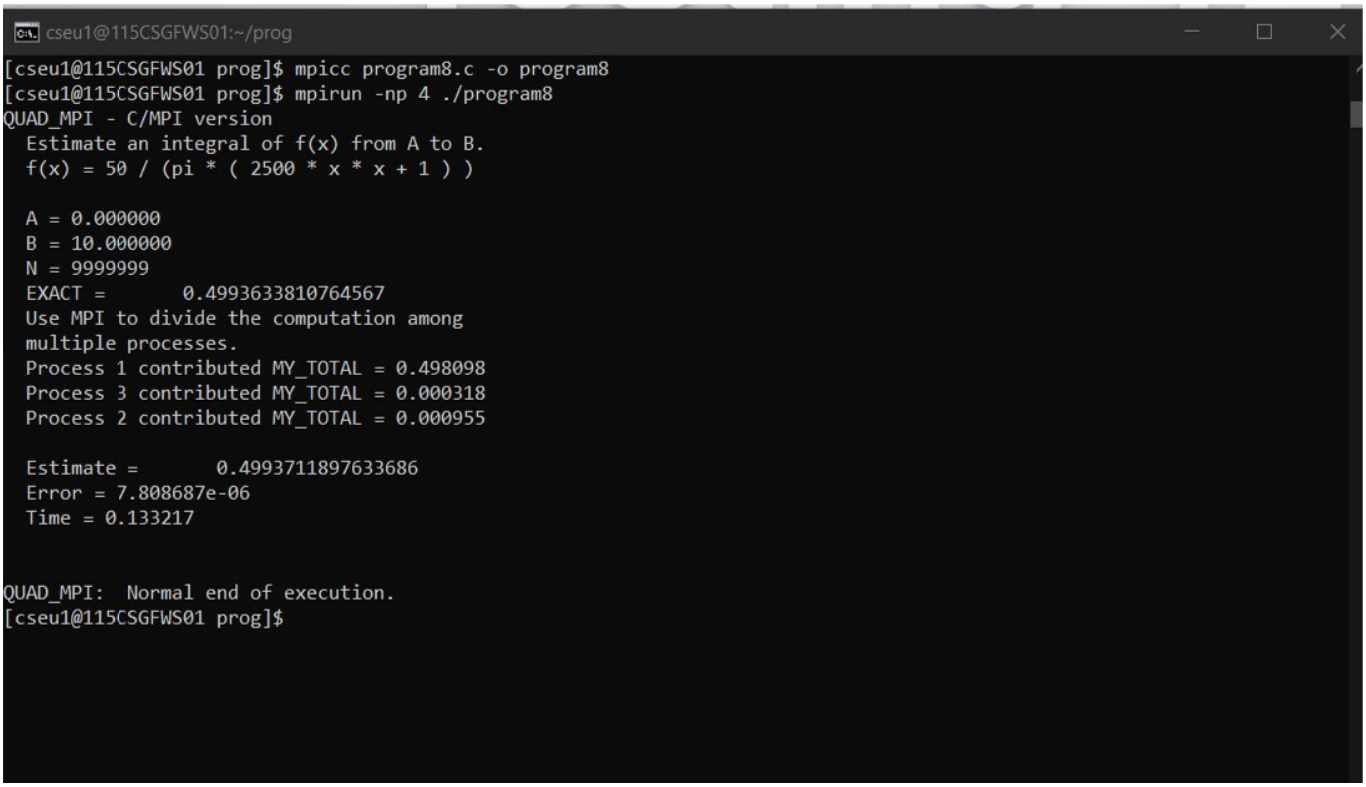

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ g++ Program3.cpp -fopenmp -lm -o prog3
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./prog3
Size Cache Unfriendly Cache Friendly Parallel Sieve
100000 9592 0.001101 9592 0.000983 9592 0.000660
1000000 78498 0.012591 78498 0.009347 78498 0.017538
10000000 664579 0.119263 664579 0.085537 664579 0.084395
100000000 5761455 1.587545 5761455 0.831841 5761455 0.961398
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

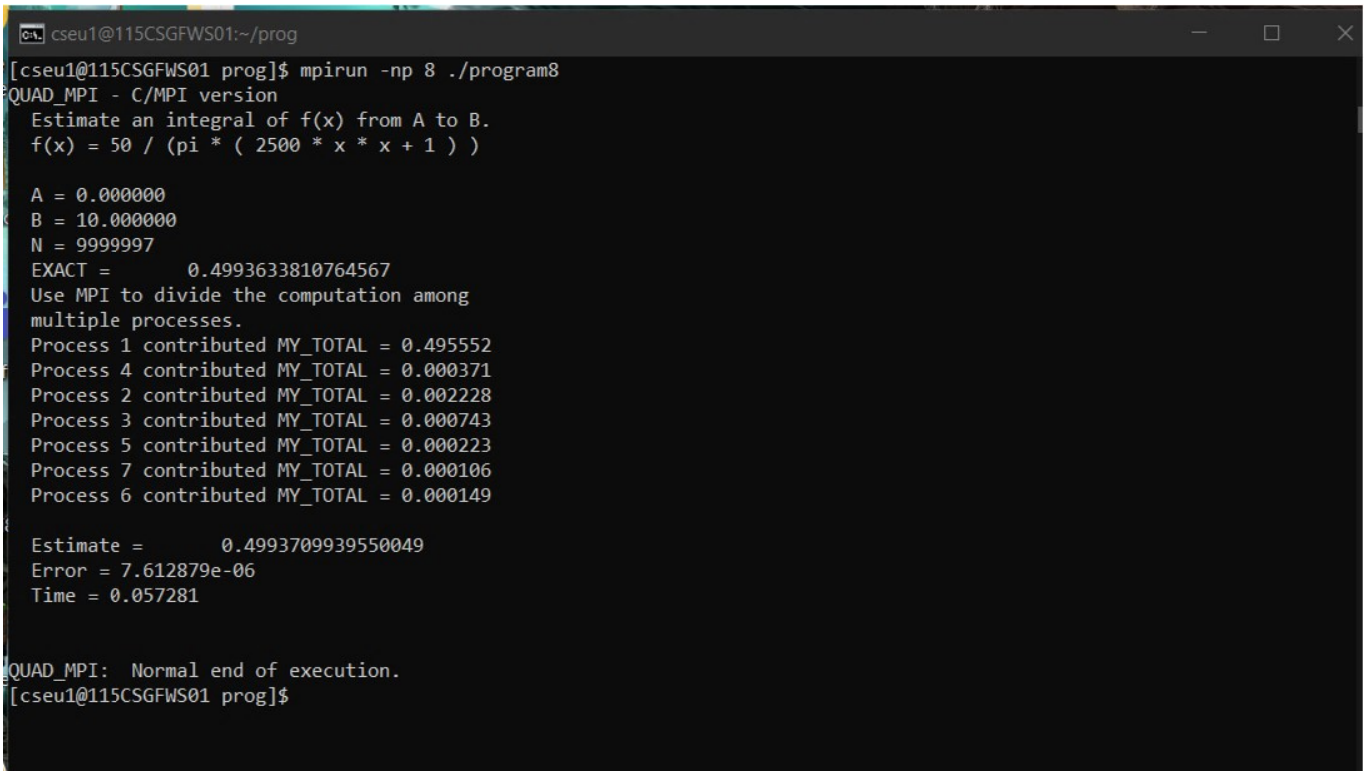

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./prog5
Size: 100000
Cluster (75, 25): 25406
Cluster (25, 25): 25563
Cluster (25, 75): 24969
Cluster (75, 75): 24062
Size: 500000
Cluster (75, 25): 127621
Cluster (25, 25): 126992
Cluster (25, 75): 124780
Cluster (75, 75): 120607
Size: 1000000
Cluster (75, 25): 255171
Cluster (25, 25): 254513
Cluster (25, 75): 249355
Cluster (75, 75): 240961
Size: 5000000
Cluster (75, 25): 1275686
Cluster (25, 25): 1276050
Cluster (25, 75): 1246989
Cluster (75, 75): 1201275
Size: 10000000
Cluster (75, 25): 2551346
Cluster (25, 25): 2549789
Cluster (25, 75): 2496615
Cluster (75, 75): 2402250
Size T1 T2 T4 T8
100000 0.005809 0.002986 0.002957 0.002996
500000 0.029302 0.020194 0.018712 0.015061
1000000 0.057529 0.034194 0.039830 0.036461
5000000 0.297274 0.147303 0.144438 0.144138
10000000 0.568517 0.300767 0.282682 0.284799
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

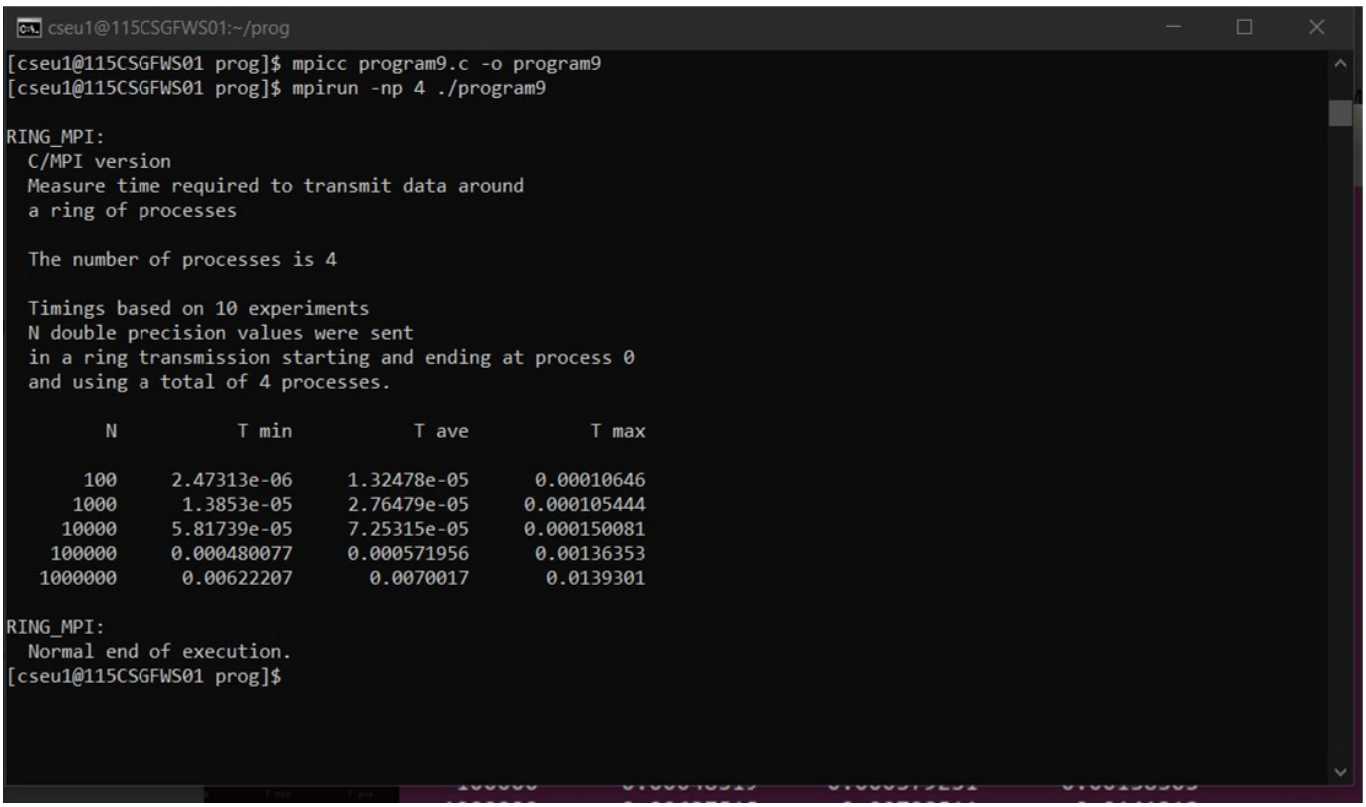

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ cc Program6_1.c -fopenmp -o prog6
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./prog6
Size T1 T2 T4 T8
0.97KB 0.000386s 0.000655s 0.000605s 0.001486s
1261.61KB 0.428070s 0.165800s 0.168886s 0.168699s
13.10KB 0.007235s 0.005618s 0.002707s 0.003530s
1389.27KB 0.388077s 0.180540s 0.194332s 0.193578s
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

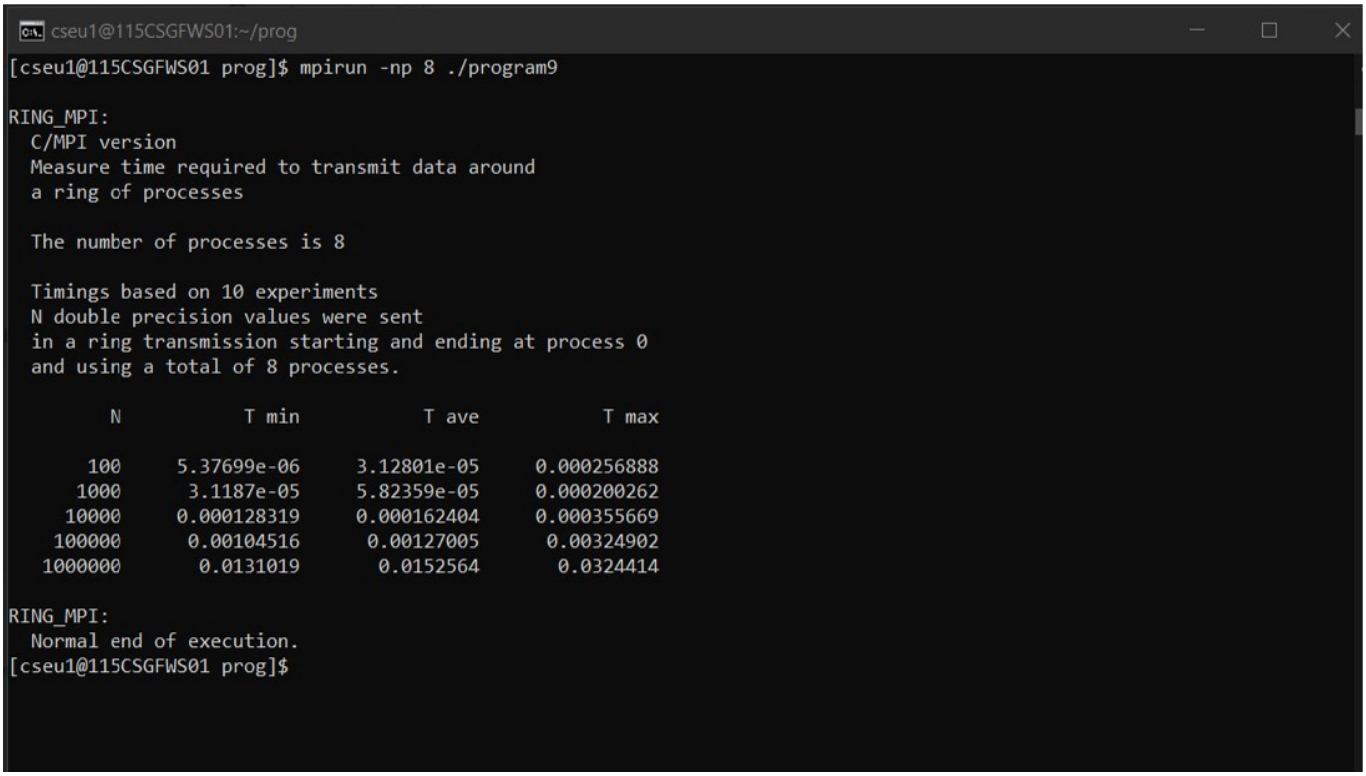

sanganbasava@sanganbasava-VirtualBox: ~/Downloads/padp
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./a.out
Enter number of threads: 5
The: 13
around: 1
graphics: 0
from: 0
by: 3
be: 2
any: 0
which: 2
various: 1
mount: 2
Time Taken: 0.000877
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./a.out
Enter number of threads: 6
The: 13
around: 1
graphics: 0
from: 0
by: 3
be: 2
any: 0
which: 2
various: 1
mount: 2
Time Taken: 0.000908
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$ ./a.out
Enter number of threads: 3
The: 13
around: 1
graphics: 0
from: 0
by: 3
be: 2
any: 0
which: 2
various: 1
mount: 2
Time Taken: 0.000520
sanganbasava@sanganbasava-VirtualBox:~/Downloads/padp$

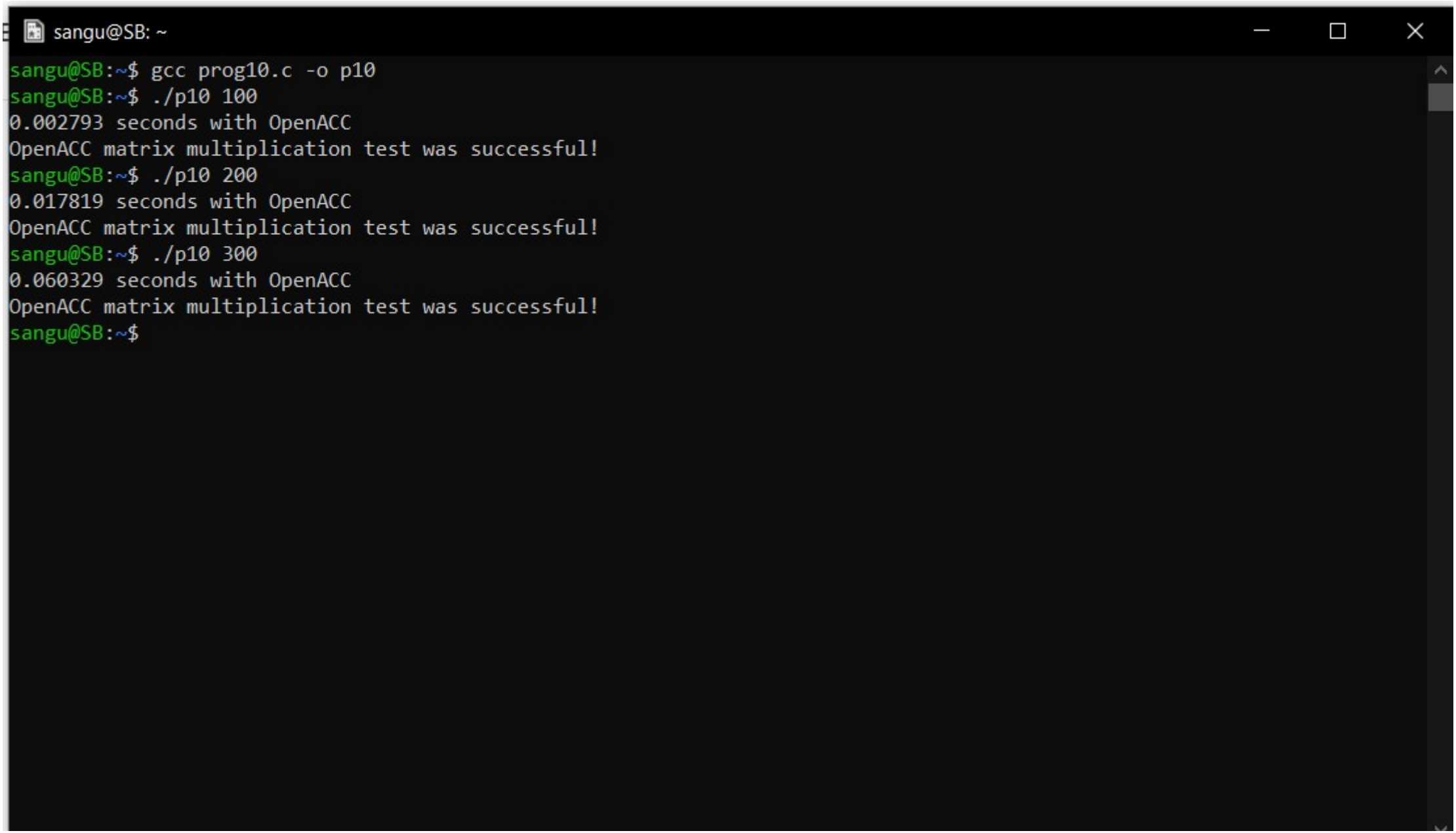

cseu1@115CSGFWS01:~/prog
[cseu1@115CSGFWS01 prog]$ mpirun -np 3 ./program7
19 December 2020 02:21:44 PM
MPI_MULTITASK:
C / MPI version
P0_SET_PARAMETERS:
Set INPUT1 = 10000000
INPUT2 = 100000
Process 2 time = 1.51583
Process 1 time = 6.48677
Process 1 returned OUTPUT1 = 615
Process 2 returned OUTPUT2 = 9592
Process 0 time = 6.48646
MPI_MULTITASK:
Normal end of execution.
19 December 2020 02:21:50 PM
[cseu1@115CSGFWS01 prog]$

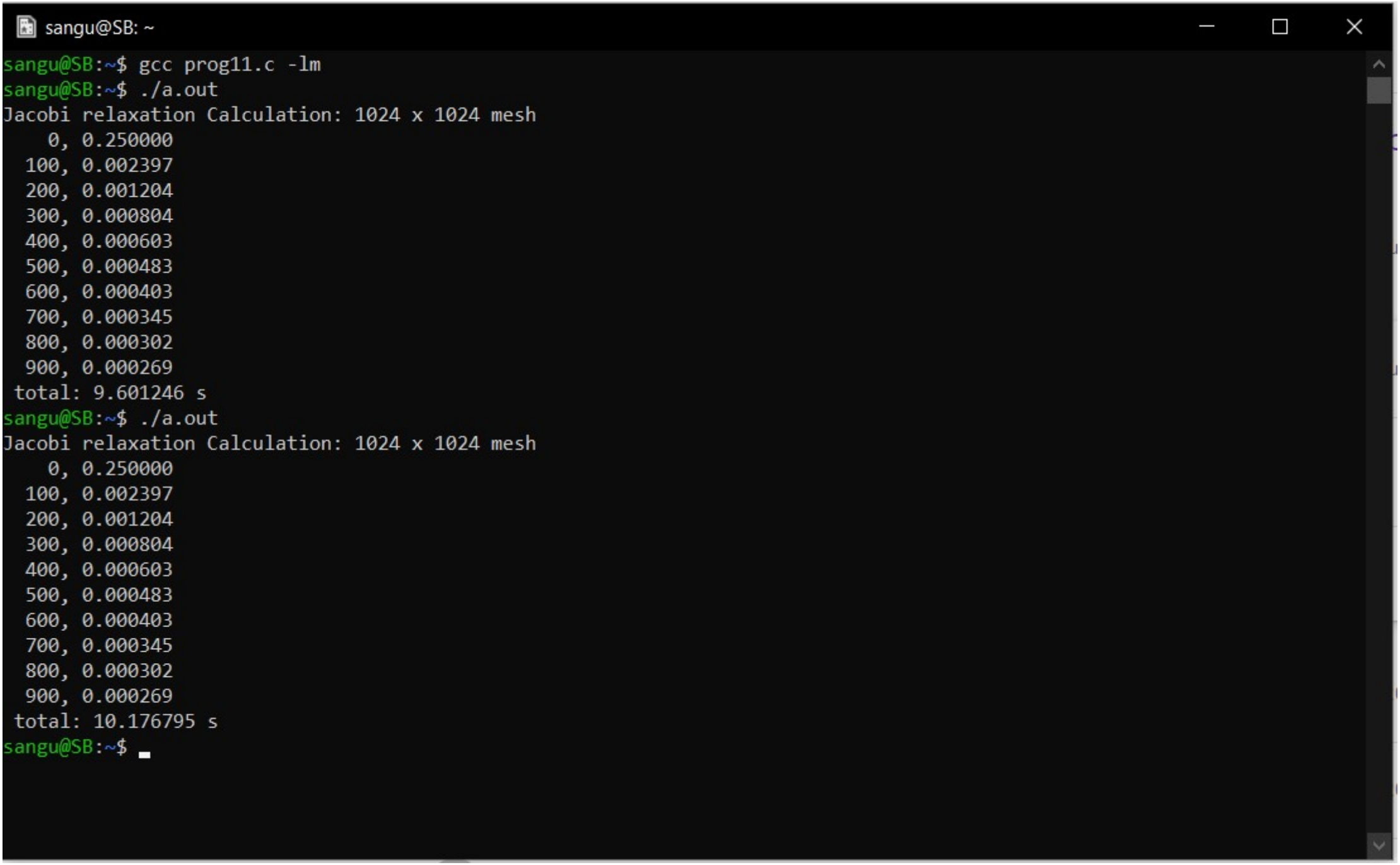

cseu1@115CSGFWS01:~/prog
[cseu1@115CSGFWS01 prog]$ mpicc program8.c -o program8
[cseu1@115CSGFWS01 prog]$ mpirun -np 4 ./program8
QUAD_MPI - C/MPI version
Estimate an integral of f(x) from A to B.
f(x) = 50 / (pi * (2500 * x * x + 1))
A = 0.000000
B = 10.000000
N = 9999999
EXACT = 0.4993633810764567
Use MPI to divide the computation among
multiple processes.
Process 1 contributed MY_TOTAL = 0.498098
Process 3 contributed MY_TOTAL = 0.000318
Process 2 contributed MY_TOTAL = 0.000955
Estimate = 0.4993711897633686
Error = 7.808687e-06
Time = 0.133217
QUAD_MPI: Normal end of execution.
[cseu1@115CSGFWS01 prog]$


cseu1@115CSGFWS01:~/prog
[cseu1@115CSGFWS01 prog]$ mpirun -np 8 ./program8
QUAD_MPI - C/MPI version
Estimate an integral of f(x) from A to B.
f(x) = 50 / (pi * (2500 * x * x + 1))
A = 0.000000
B = 10.000000
N = 9999997
EXACT = 0.4993633810764567
Use MPI to divide the computation among
multiple processes.
Process 1 contributed MY_TOTAL = 0.495552
Process 4 contributed MY_TOTAL = 0.000371
Process 2 contributed MY_TOTAL = 0.002228
Process 3 contributed MY_TOTAL = 0.000743
Process 5 contributed MY_TOTAL = 0.000223
Process 7 contributed MY_TOTAL = 0.000106
Process 6 contributed MY_TOTAL = 0.000149
Estimate = 0.4993709939550049
Error = 7.612879e-06
Time = 0.057281
QUAD_MPI: Normal end of execution.
[cseu1@115CSGFWS01 prog]$


cseu1@115CSGFWS01:~/prog
[cseu1@115CSGFWS01 prog]$ mpicc program9.c -o program9
[cseu1@115CSGFWS01 prog]$ mpirun -np 4 ./program9
RING_MPI:
C/MPI version
Measure time required to transmit data around
a ring of processes
The number of processes is 4
Timings based on 10 experiments
N double precision values were sent
in a ring transmission starting and ending at process 0
and using a total of 4 processes.
N T min T ave T max
100 2.47313e-06 1.32478e-05 0.00010646
1000 1.3853e-05 2.76479e-05 0.000105444
10000 5.81739e-05 7.25315e-05 0.000150081
100000 0.000480077 0.000571956 0.00136353
1000000 0.00622207 0.0070017 0.0139301
RING_MPI:
Normal end of execution.
[cseu1@115CSGFWS01 prog]$


cseu1@115CSGFWS01:~/prog
[cseu1@115CSGFWS01 prog]$ mpirun -np 8 ./program9
RING_MPI:
C/MPI version
Measure time required to transmit data around
a ring of processes
The number of processes is 8
Timings based on 10 experiments
N double precision values were sent
in a ring transmission starting and ending at process 0
and using a total of 8 processes.
N T min T ave T max
100 5.37699e-06 3.12801e-05 0.000256888
1000 3.1187e-05 5.82359e-05 0.000200262
10000 0.000128319 0.000162404 0.000355669
100000 0.00104516 0.00127005 0.00324902
1000000 0.0131019 0.0152564 0.0324414
RING_MPI:
Normal end of execution.
[cseu1@115CSGFWS01 prog]$


sangu@SB: ~
sangu@SB:~$ gcc prog10.c -o p10
sangu@SB:~$ ./p10 100
0.002793 seconds with OpenACC
OpenACC matrix multiplication test was successful!
sangu@SB:~$ ./p10 200
0.017819 seconds with OpenACC
OpenACC matrix multiplication test was successful!
sangu@SB:~$ ./p10 300
0.060329 seconds with OpenACC
OpenACC matrix multiplication test was successful!
sangu@SB:~$


sangu@SB: ~
sangu@SB:~$ gcc prog11.c -lm
sangu@SB:~$ ./a.out
Jacobi relaxation Calculation: 1024 x 1024 mesh
0, 0.250000
100, 0.002397
200, 0.001204
300, 0.000804
400, 0.000603
500, 0.000483
600, 0.000403
700, 0.000345
800, 0.000302
900, 0.000269
total: 9.601246 s
sangu@SB:~$ ./a.out
Jacobi relaxation Calculation: 1024 x 1024 mesh
0, 0.250000
100, 0.002397
200, 0.001204
300, 0.000804
400, 0.000603
500, 0.000483
600, 0.000403
700, 0.000345
800, 0.000302
900, 0.000269
total: 10.176795 s
sangu@SB:~$