

# CENG342 HOMEWORK3 REPORT

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Id: 19050111004

Core Number	Matrix size	Timing	Speed-up	Efficiency
1	1004*1004	0.003645	1.000000	1.000000
2	1004*1004	0.002268	1.606367	0.803183
3	1004*1004	0.020556	0.177013	0.059004
4	1004*1004	0.002138	1.704716	0.426179
1	104*104	0.000101	1.000000	1.000000
2	104*104	0.000138	0.733333	0.366667
3	104*104	0.000304	0.332237	0.110746
4	104*104	0.000177	0.570621	0.142655

Large matrix size =  $19050111004 \% 10000 = 1004$

Small Matrix =  $100 + 19050111004 \% 100 = 104$

Speedup=  $S(n,p) = T_{\text{serial}}(n) / T_{\text{parallel}}(n,p)$

Efficiency =  $E(n,p) = T_{\text{serial}}(n) / p * T_{\text{parallel}}(n,p)$

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edanur@DESKTOP-I9TIAMG:~/CENG342$ nano 19050111004.c
edanur@DESKTOP-I9TIAMG:~/CENG342$ make
mpicc -o 19050111004 19050111004.o hellofunc.o
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 1 --oversubscribe ./19050111004 1004 1004 output.txt

Elapsed time is 0.003645 seconds for parallel mxv with 1 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 2 --oversubscribe ./19050111004 1004 1004 output.txt

Elapsed time is 0.002268 seconds for parallel mxv with 2 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 3 --oversubscribe ./19050111004 1004 1004 output.txt

Elapsed time is 0.020556 seconds for parallel mxv with 3 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 4 --oversubscribe ./19050111004 1004 1004 output.txt

Elapsed time is 0.002138 seconds for parallel mxv with 4 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 4 --oversubscribe ./19050111004 104 104 output.txt

Elapsed time is 0.000177 seconds for parallel mxv with 4 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 3 --oversubscribe ./19050111004 104 104 output.txt

Elapsed time is 0.000304 seconds for parallel mxv with 3 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 2 --oversubscribe ./19050111004 104 104 output.txt

Elapsed time is 0.000138 seconds for parallel mxv with 2 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$ mpirun -n 1 --oversubscribe ./19050111004 104 104 output.txt

Elapsed time is 0.000101 seconds for parallel mxv with 1 processes
edanur@DESKTOP-I9TIAMG:~/CENG342$
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