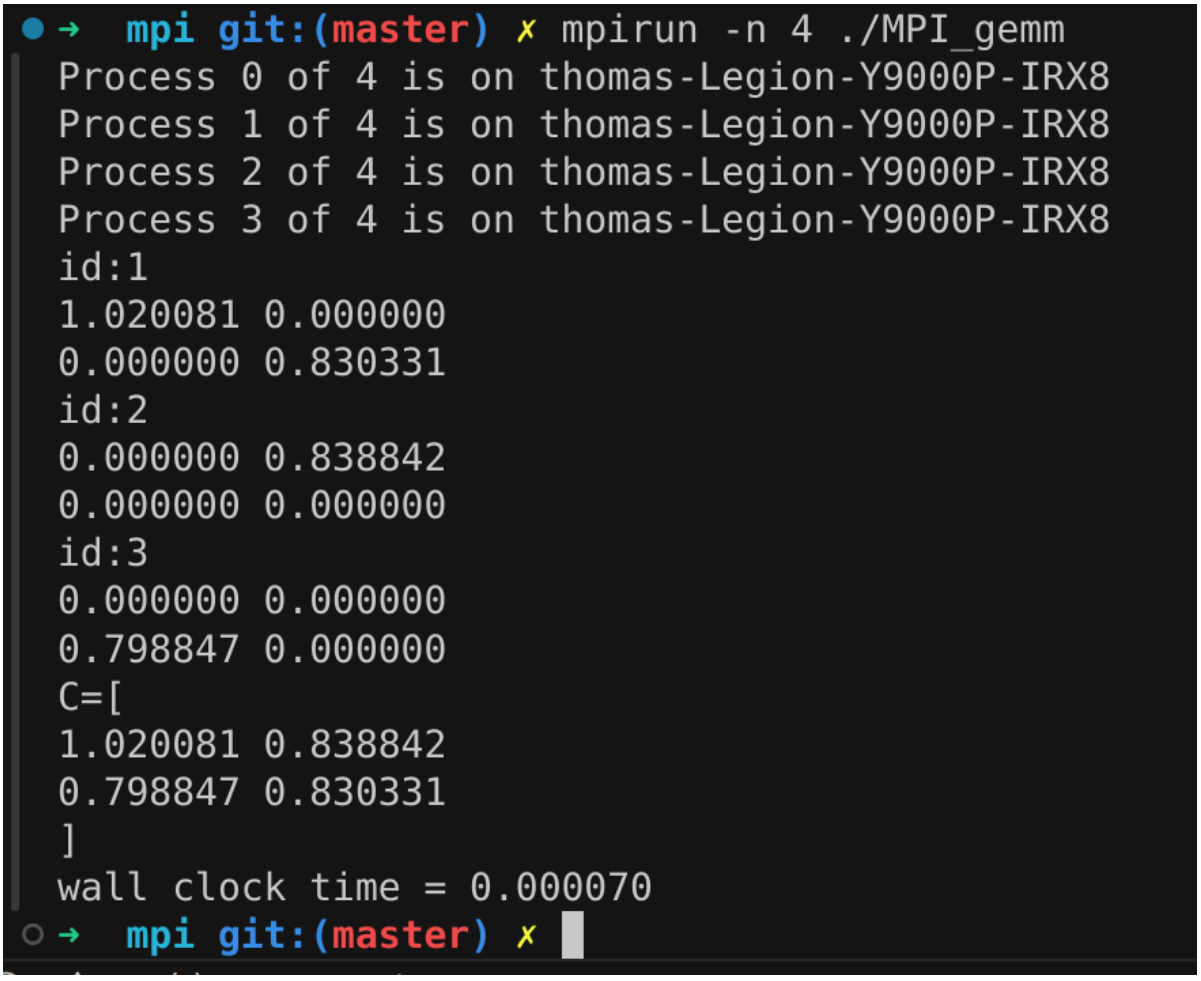
EXP7

运行结果：


➜ mpi git:(master) ✗ mpirun -n 4 ./MPI_gemm
Process 0 of 4 is on thomas-Legion-Y9000P-IRX8
Process 1 of 4 is on thomas-Legion-Y9000P-IRX8
Process 2 of 4 is on thomas-Legion-Y9000P-IRX8
Process 3 of 4 is on thomas-Legion-Y9000P-IRX8
id:1
1.020081 0.000000
0.000000 0.830331
id:2
0.000000 0.838842
0.000000 0.000000
id:3
0.000000 0.000000
0.798847 0.000000
C=[
1.020081 0.838842
0.798847 0.830331
]
wall clock time = 0.000070
➜ mpi git:(master) ✗

```
➜  mpi git:(master) ✗ mpirun -n 4 ./MPI_gemm
Process 0 of 4 is on thomas-Legion-Y9000P-IRX8
Process 1 of 4 is on thomas-Legion-Y9000P-IRX8
id:1
-0.648547 0.000000 0.000000 0.068507
0.000000 0.000000 -0.161491 0.000000
0.000000 -1.185891 0.000000 0.000000
-0.286405 0.000000 0.000000 1.859551
Process 3 of 4 is on thomas-Legion-Y9000P-IRX8
id:3
0.000000 0.000000 -0.288829 0.000000
0.000000 -0.874463 0.000000 0.000000
0.513949 0.000000 0.000000 -0.341329
0.000000 0.000000 -0.000526 0.000000
C=[
-0.648547 -0.697436 -0.288829 0.068507
0.243567 -0.874463 -0.161491 0.137133
0.513949 -1.185891 -0.457502 -0.341329
-0.286405 0.041273 -0.000526 1.859551
]
wall clock time = 0.000120
Process 2 of 4 is on thomas-Legion-Y9000P-IRX8
id:2
0.000000 -0.697436 0.000000 0.000000
0.243567 0.000000 0.000000 0.137133
0.000000 0.000000 -0.457502 0.000000
0.000000 0.041273 0.000000 0.000000
```

```
➜  mpi git:(master) ✗ mpirun -n 4 ./MPI_gemm
Process 1 of 4 is on thomas-Legion-Y9000P-IRX8
Process 3 of 4 is on thomas-Legion-Y9000P-IRX8
Process 2 of 4 is on thomas-Legion-Y9000P-IRX8
Process 0 of 4 is on thomas-Legion-Y9000P-IRX8
id:3
0.000000 0.000000 0.713859 0.000000 0.000000 0.949780 0.000000 0.000000
0.549547 0.000000 0.000000 -1.409116 0.000000 0.000000 0.843544 0.000000
0.000000 1.469986 0.000000 0.000000 1.211029 0.000000 0.000000 -1.250213
0.000000 0.000000 -0.396960 0.000000 0.000000 -0.057406 0.000000 0.000000
0.330351 0.000000 0.000000 1.551175 0.000000 0.000000 0.127171 0.000000
0.000000 1.009126 0.000000 0.000000 -0.285766 0.000000 0.000000 -0.552989
0.000000 0.000000 0.691218 0.000000 0.000000 1.767113 0.000000 0.000000
0.272183 0.000000 0.000000 0.404774 0.000000 0.000000 -0.131978 0.000000
id:1
-0.702490 0.000000 0.000000 0.063581 0.000000 0.000000 -0.119886 0.000000
0.000000 -0.058283 0.000000 0.000000 2.501541 0.000000 0.000000 -0.076647
0.000000 0.000000 -0.015986 0.000000 0.000000 1.221015 0.000000 0.000000
1.568243 0.000000 0.000000 -0.030991 0.000000 0.000000 1.148578 0.000000
0.000000 1.561958 0.000000 0.000000 -0.556509 0.000000 0.000000 -0.734323
0.000000 0.000000 -0.174863 0.000000 0.000000 -1.493150 0.000000 0.000000
-1.375815 0.000000 0.000000 -0.171014 0.000000 0.000000 0.460513 0.000000
0.000000 -0.031813 0.000000 0.000000 -0.438942 0.000000 0.000000 -0.396006
C=[
-0.702490 -0.617593 0.713859 0.063581 1.412361 0.949780 -0.119886 -0.109187
0.549547 -0.058283 0.202383 -1.409116 2.501541 2.480544 0.843544 -0.076647
0.033263 1.469986 -0.015986 -0.063686 1.211029 1.221015 1.691703 -1.250213
1.568243 1.036256 -0.396960 -0.030991 1.298360 -0.057406 1.148578 -0.982446
0.330351 1.561958 -1.425547 1.551175 -0.556509 -2.013690 0.127171 -0.734323
0.695605 1.009126 -0.174863 1.339494 -0.285766 -1.493150 1.240700 -0.552989
-1.375815 -0.853385 0.691218 -0.171014 0.881295 1.767113 0.460513 0.088403
id:2
0.000000 -0.617593 0.000000 0.000000 1.412361 0.000000 0.000000 -0.109187
0.000000 0.000000 0.202383 0.000000 0.000000 2.480544 0.000000 0.000000
0.033263 0.000000 0.000000 -0.063686 0.000000 0.000000 1.691703 0.000000
0.000000 1.036256 0.000000 0.000000 1.298360 0.000000 0.000000 -0.982446
0.000000 0.000000 -1.425547 0.000000 0.000000 -2.013690 0.000000 0.000000
0.695605 0.000000 0.000000 1.339494 0.000000 0.000000 1.240700 0.000000
0.000000 -0.853385 0.000000 0.000000 0.881295 0.000000 0.000000 0.088403
0.000000 0.000000 -1.034846 0.000000 0.000000 -1.226528 0.000000 0.000000
0.272183 -0.031813 -1.034846 0.404774 -0.438942 -1.226528 -0.131978 -0.396006

]
wall clock time = 0.000107
```

问题以及解决方法:

一开始将矩阵C广播给所有线程，这导致每一个线程的C一直是0.

解决措施是不广播C每一个线程算好自己的分块后用MPI_Reduce汇总到C中。