CSE179: Introduction to Parallel Computing

Lab Session 6 Report:

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Section: Lab-03L, Thursday 5:30-8:20pm

In Lab Session 6 we were given 3 different tasks to complete, all files can be compiled through the makefile within Lab06 folder. I will describe the work done in each task in the following section headed by the task number.

Task 1: Collective Communication

** s = seconds

Task 1.1:

# of MPI Processes:	Time(Value = 5):	Time(Value = 10):	Time(Value = 15):
4	0.000041 s	0.000049 s	0.000043 s
6	0.000084 s	0.000105 s	0.000097 s
8	0.000071 s	0.000968 s	0.000068 s

Task 1.2:

# of MPI Processes:	Time(size = 64):	Time(size = 96):	Time(size = 128):
4	0.000047 s	0.000058 s	0.000089 s
6	0.000167 s	0.000111 s	0.000263 s
8	0.000262 s	0.001707 s	0.000408 s

Task 2: Cartesian topology

1. All processes, the local and global MPI_COMM_WORLD rank shared the same value.
2. Calculations:

Process 0 = 6.6	Process 4 = 7.4	Process 8 = 11.4	Process 12 = 5.8
Process 1 = 5.2	Process 5 = 6	Process 9 = 10	Process 13 = 4.4
Process 2 = 6.2	Process 6 = 7	Process 10 = 11	Process 14 = 5.4
Process 3 = 7.2	Process 7 = 8	Process 11 = 12	Process 15 = 6.4

Task 3: MPI I/O