Chp 6 - Exercise 1 - Individual

•Get the basic code to run and compile.
  •Be sure to include the print statements
  •Run the code with number of processors set to 2, 4, and 8 to see how it responds.

Grading Rubric
____ (1 Point) Copy of the code
____ (2 Points) In top comments add in what was printed out when running with 2, 4, and 8 processors

```
#include <iostream>
#include <sstream>
#include <mpi.h>

int main( int argc, char * argv[])
{
  MPI_Init(&argc,&argv);
// at this point I now have 8 processes running and all of them are going
// to run the code below (we will say ways to control this later)

// if I run with -n 8 this will say I have 8 parocessors
  int num_tasks;
  MPI_Comm_size(MPI_COMM_WORLD, &num_tasks);

  int task_id;
  MPI_Comm_rank(MPI_COMM_WORLD, &task_id);

// when I run the code this will print out somthing for each processor
  std::stringstream ss;
  ss << "Printing from task " << task_id << '/' << num_tasks << '\n';
  std::cout << ss.str();
// Below stops all the processors running
  MPI_Finalize();
  return 0;

}
```

```
sa7233@sloop:~/fall2024/HPC$ mpirun -n 8 ./0_mpi
Printing from task 1/8
Printing from task 3/8
Printing from task 4/8
Printing from task 5/8
Printing from task 6/8
Printing from task 0/8
Printing from task 2/8
Printing from task 7/8
sa7233@sloop:~/fall2024/HPC$ mpirun -n 6 ./0_mpi
Printing from task 0/6
Printing from task 3/6
Printing from task 4/6
Printing from task 5/6
Printing from task 2/6
Printing from task 1/6
sa7233@sloop:~/fall2024/HPC$ mpirun -n 4 ./0_mpi
Printing from task 3/4
Printing from task 0/4
Printing from task 2/4
Printing from task 1/4
sa7233@sloop:~/fall2024/HPC$ mpirun -n 2 ./0_mpi
Printing from task 0/2
Printing from task 1/2
sa7233@sloop:~/fall2024/HPC$
```