20BCE1025
Abhishek N N

Parallel and Distributed Computing(CSE4001)

Lab 8 - MPI Basics

Code:

```
#include <mpi.h>
#include <stdio.h>

int main(int argc, char** argv) {
    // Initialize the MPI environment
    MPI_Init(NULL, NULL);

    // Get the number of processes
    int world_size;
    MPI_Comm_size(MPI_COMM_WORLD, &world_size);

    // Get the rank of the process
    int world_rank;
    MPI_Comm_rank(MPI_COMM_WORLD, &world_rank);

    // Get the name of the processor
    char processor_name[MPI_MAX_PROCESSOR_NAME];
    int name_len;
    MPI_Get_processor_name(processor_name, &name_len);

    // Print off a hello world message
    printf("Hello world from processor %s, rank %d out of %d
processors\n", processor_name, world_rank, world_size);

    // Finalize the MPI environment.
    MPI_Finalize();
}
```

Running:

```
abhishek_n_n_20bce1025@ud:/mnt/D/ccpp$ mpicc mpi_example.c -o mpi_example
abhishek_n_n_20bce1025@ud:/mnt/D/ccpp$ mpirun -np 1 ./mpi_example
hwloc/linux: Ignoring PCI device with non-16bit domain.
Pass --enable-32bits-pci-domain to configure to support such devices
(warning: it would break the library ABI, don't enable unless really needed).
Hello world from processor ud, rank 0 out of 1 processors
abhishek_n_n_20bce1025@ud:/mnt/D/ccpp$ mpirun -np 2 ./mpi_example
hwloc/linux: Ignoring PCI device with non-16bit domain.
Pass --enable-32bits-pci-domain to configure to support such devices
(warning: it would break the library ABI, don't enable unless really needed).
Hello world from processor ud, rank 0 out of 2 processors
Hello world from processor ud, rank 1 out of 2 processors
abhishek_n_n_20bce1025@ud:/mnt/D/ccpp$
```