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1  //-----
2  // MPIHelloWorld.cpp
3  //-----
4  #if (defined __linux__ ) || (defined _AIX) || (defined __APPLE__)
5      #include <sys/types.h>
6      #include <sys/stat.h>
7      #include <unistd.h>
8  #elif (defined _WIN32) || (defined _WIN64)
9      #include <conio.h>
10     #include <direct.h>
11 #endif
12
13 #include "mpi.h"
14 #include <stdlib.h>
15 #include <iostream>
16 using namespace std;
17
18 int main(int argc, char* argv[])
19 {
20     int size, rank;
21
22     MPI_Init(&argc, &argv);
23     MPI_Comm_size(MPI_COMM_WORLD, &size);
24     MPI_Comm_rank(MPI_COMM_WORLD, &rank);
25     if (rank == 0) {
26         cout << "There are " << size << " processes\n";
27         std::fflush(stdout);
28     }
29     if (rank == 0) {
30         char helloStr0[] = "Hello World";
31         MPI_Send(helloStr0, 12, MPI_CHAR, 1, 0, MPI_COMM_WORLD);
32     }
33     else if (rank == 1) {
34         char helloStr1[12];
35         MPI_Recv(helloStr1, 12, MPI_CHAR, 0, 0, MPI_COMM_WORLD, MPI_STATUS_IGNORE);
36         printf("\nProcess 1 has received string \"%s\" from process 0.\n", helloStr1);
37     }
38
39     MPI_Finalize();
40     return 0;
41 }
```