#include <stdlib.h>

#include <mpi.h>

#include <iostream>

using namespace std;

// function Sendrecv\_replace

// only 2 process !

int main(int argc,char \*\*argv)

{

int rank, size, rc, tag1=6, n1=5, proc;

float x[n1];

MPI\_Comm comm;

MPI\_Status status;

rc=MPI\_Init(&argc, &argv);

comm=MPI\_COMM\_WORLD;

rc=MPI\_Comm\_size(comm, &size);

rc=MPI\_Comm\_rank(comm, &rank);

cout <<"size = "<< size << endl;

for(int j=0; j<=10\*(rank+1); j++)

{ for(int k=0; k<n1; k++)

{ x[k]=(float)rand()/RAND\_MAX; } }

cout <<"process "<< rank <<" Send x = ";

for(int k=0; k<n1; k++) cout << x[k] <<" ";

cout << endl;

if(rank==0) proc=size-1;

else if(rank==size-1) proc=0;

else proc=MPI\_PROC\_NULL;

rc=MPI\_Sendrecv\_replace(&x, n1, MPI\_FLOAT, proc, tag1,

proc, tag1, comm, &status);

cout <<"process "<< rank <<" Recv x = ";

for(int k=0; k<n1; k++) cout << x[k] <<" ";

cout << endl;

rc=MPI\_Finalize();

return 0; }