

HW-5

Distributed Pairing 1 (a client-server application)

This program is implemented using the MPI library in C. The teacher (with rank = 0) receives requests from all students. For every pair of requests received the teacher forms a group out of the two students and sends a message to both students to let them know that they are in a group. If there is an odd number of students who sent in a request then the last student left is partnered with itself.

Distributed Pairing 2 (a peer-to-peer application)

This program is implemented using the MPI library in C. The program stores all actors in an array where the indices represent the number of the actor. For Example, the teacher is placed in index 0, while student 4 is placed in index 4. For every index of a student the number of its partner is stored. The teacher (with rank = 0) randomly chooses a student and sends to the chosen student a message with the array. The chosen student then finds a partner from the available students. After the student finds a partner, the student writes the partner number for itself and its partner. A message is sent to the partner to let them know that they have received a partner. Then it proceeds to find another student from the array which has no partner yet so that it can send it a message to repeat the process. If there is an odd number of students who sent in a request then the last student left is partnered with itself.