

# Parallel Odd-Even Transposition Sort

## Description :

In this homework, you are required to write a parallel odd-even transposition sort by using MPI. A parallel odd-even transposition sort is performed as follows:

/\* Initially,  $m$  numbers are distributed to  $n$  processes, respectively.\*/

1. For each process with odd rank  $P$ , send its number to the process with rank  $P-1$ .
2. For each process with rank  $P-1$ , compare its number with the number sent by the process with rank  $P$  and send the larger one back to the process with rank  $P$ .
3. For each process with even rank  $Q$ , send its number to the process with rank  $Q-1$ .
4. For each process with rank  $Q-1$ , compare its number with the number sent by the process with rank  $Q$  and send the larger one back to the process with rank  $Q$ .
5. Repeat 1-4 until the numbers are sorted.

## Where and What to Turn in Your Homework :

1. Please turn in a report (at least 10 pages) includes
  - The design approaches
  - Performance analysis
  - The source code of your programs (sequential and parallel versions)
2. Send your source code to BB
3. No late homework assignment submission!!!