

Assignment 2: k-way parallel merge sort using MPI.

Problem Definition:

Implement k-way (assume $k=2$) Parallel Merge Sort in MPI.

Follow the below-mentioned instructions.

1. Ask for 8 nodes.
2. Generate 1 billion random integer numbers (using lehmer random number generator) in MPI environment. Explain the best possible way for the generation.
3. Divide the number into two parts – list1, list2.
4. Create two subgroups (subgrp1, subgrp2) each consists of 4 nodes.
5. Sort list1 (using parallel merge sort) in subgrp1.
6. Sort list2 (using parallel merge sort) in subgrp2.
7. Merge list1 and list2. Explain the best possible way of merging two sorted lists (list1 and list2) using a parallel MPI environment.