Assignment 4 – Report

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1. Sequential Program with File IO – bsort-file.c

   - Working as expected. No problems encountered

2. MPI Version – bsort-mpi.c

   - Working as expected. No major problems encountered. However, it took a while to understand the requirements and follow them.

3. Second MPI version – bsort-mpi2.c

   - Working as expected.
   - Encountered problems understanding that the program needed 2 levels of collective communication. One to exchange bucket sizes and ultimately the alltoallv to share all the data between the processes.
   - I faced another problem while getting the alltoallv routine to work. As the send buffer was a 2D array, even though my send/recv counts and displacements were correctly calculated, data was correctly received by process 0 and did not for other processes.
   - In order to tackle this issue, I converted the 2D array to 1D array before calling the alltoallv routine.