Tim Siwula
CS 220 - 001
September 4, 2015

Homework #1

In both programs, only node/core 0 has access to the solution. Describe how to modify both programs so that when the program is completed, all the nodes/cores will have access to the solution

1. The first parallelization was for a shared memory MIMD system:

   You need to do the following:

   - Use a busy wait loop until core #1 computes the sum. If you don't a race condition will incur among the other cores and corrupt the variable sum. Because addition is not an atomic operation you have to use the busy wait loop to give core #1 atomicity when computing sum.

2. The second parallelization was for a distributed memory MIMD system:

   You need to do the following:

   -Have each core contain a private sum variable that core 1 broadcasts to the other cores after it has finished computing the sum.