

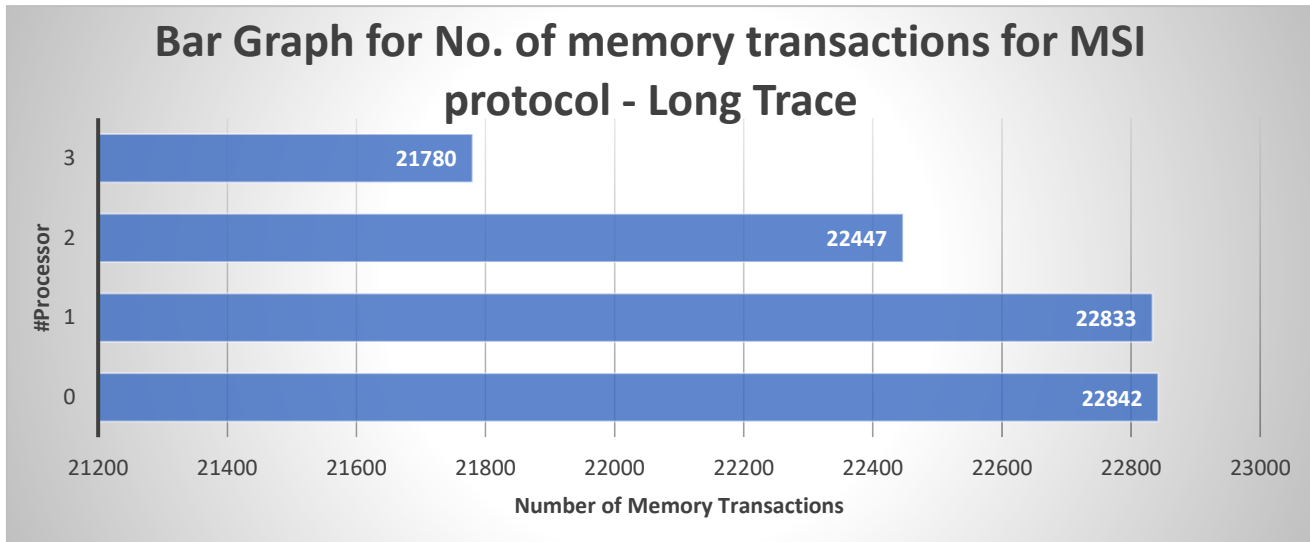
ECE 506: Architecture of Parallel Computers

Project 2 - Coherence Protocols

Padmanabha Nikhil
UnityID: pbhimav
StudentID: 200535343

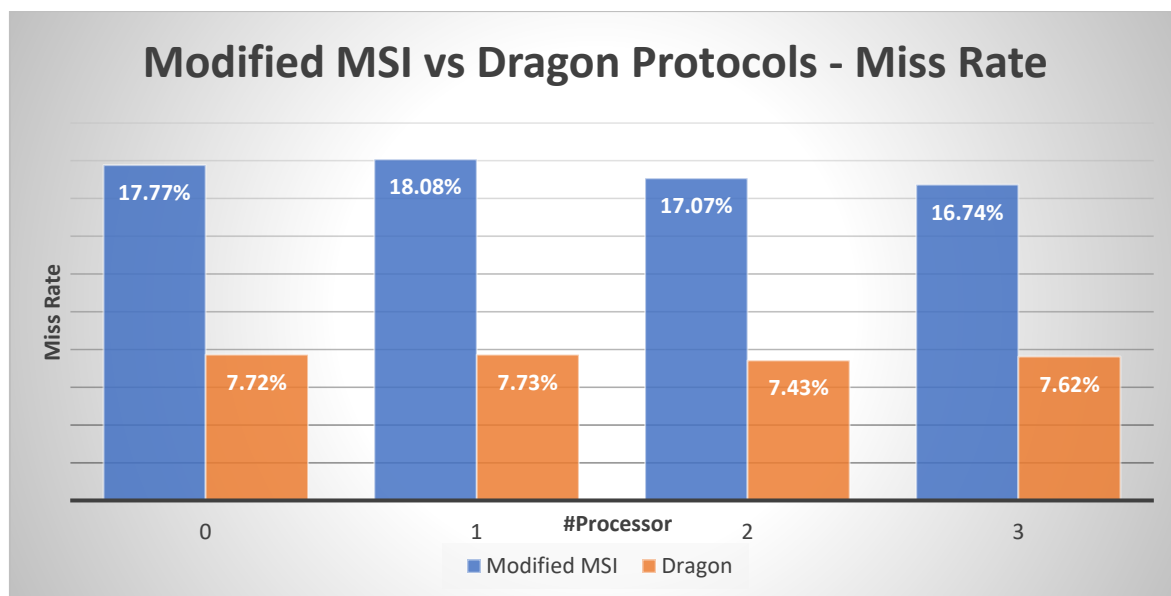
Part 1. Modified MSI

- The Modified MSI protocol has been implemented and the implementation code has been submitted along with the report.
- The MSI protocol for the long trace file has been executed and text file 'modifiedMSI_longTrace.txt' has been added along with the report. Below is the graph with the number of memory transactions for each processor.



Part 2. Modified MSI

- The Dragon protocol has been implemented and the implementation code has been submitted along with the report.
- The modified MSI and the Dragon Protocol have the differences as follows:
 - The modified MSI protocol has the states Modified, Shared and Exclusive whereas the Dragon protocol has the states Modified, Exclusive, SharedModified, SharedClean without invalidations.
 - The modified MSI functions to have only one copy of an address across all the processors. The Dragon can have multiple copies of the address across the processors
 - The Dragon protocol gives a better performance when compared to the modified MSI protocol. Below is the graph provided for the miss rate for the Modified MSI and Dragon Protocol across all the processors: The below test was implemented using the long trace and the cache states have been given in two different text files along with the report.



- The Dragon Protocol provides a performance which is twice better than the Modified MSI Protocol.