
Assignment #2

1. Understand the microbenchmark program available for estimating the cache parameters in a machine (See e.g., Problem 5.8 (page 351-352) in H&P, Compute Architecture Book, Ed.4.). Run it on any machine on which you have access and answer the following :
 - (a) How many levels of cache are there?
 - (b) What are the overall size and block size of the first-level cache?
 - (c) What are the overall size and block size of the second-level cache, if there is one?
 - (d) What are the associativities at level one and two?
 - (e) What is the page size?
 - (f) How many entries are there in TLB?
2. Implement Matrix Multiplication of 4096x4096 double matrices on any machines that you normally use. Apply Loop interchange, blocking, etc to reduce the Execution time.
3. Use any of the performance tuning tools to measure various performance metrics (cache misses, exec. Time, etc.) and reason the performance of different versions of the matrix multiplication program.

(Due: Oct. 17, 2014)