

CS 594

Notes on Assignment #1

The programming that is part of this homework is not the important aspect of the assignment; it is the analysis of what your program is doing. In particular I'm interested in the following, first you should convince me that your program is doing the right thing, that is you should verify that you are computing the "correct" solution. You can do this by using data that when used with your program produces a known result or solution. (Don't use zeros or ones in your data as that may give an incorrect timing behavior.) Or you can compare your results with a routine from a standard numerical library (that you assume is correct) and compute a "residual", say something like:

`|| your solution - known solution ||`

I would like you to analyze your timing results by graphing the rate of execution (ops/sec) as you vary the size of the problem.

I would also like an analysis of the rate you achieve to the theoretical peak performance rate of the processor. You should also describe why the performance you are achieving is so different than the peak.

So there will be 10 points total for this assignment:

- 2 points: programming
- 3 points: demonstrating the correct results
- 5 points: timing analysis