Thomas Cole Amick

Daniel Davis

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|  | **With No Optimization** | **With Optimization** |
| Write Row | 0.519118675 | 0.020312914 |
| Write Column | 4.018312679 | 0.241618637 |
| Read Row | 0.390512598 | 0.000005641 |
| Read Column | 2.709164135 | 0.000005669 |

Row major was the quickest because there was a lower number of page faults compared to Column major. Column major took the longest because of generating so many (millions) of page faults. The memory analysis problem also demonstrates the same results with the page faults. The simulation was also ran with optimization turned on, and the time required to run the simulation was reduced. This optimization is controlled by the compiler optimizing the code. The optimization was turned off in the MAKE file. The matrix had to be global variable and could not be on the stack or heap due to the size of the matrix. A segmentation fault occurred if it was on the stack.

When storing large amounts of data consideration should be made about the page size and layout. If the performance of a program is critical than the code can be written in a way that avoids excessive page faulting.