Challenge Outputs

Timing for Version #2 Methods (C++)

Size for 1000 by 1000

Addition

Time: 5.686 ms

Subtraction

Time: 6.074 ms

Multiplication

Time: 17157.6 ms

Size for 2000 by 2000

Addition

Time: 21.598 ms

Subtraction

Time: 21.641 ms

Multiplication

Time: 179818 ms

Timing for Version #3 Methods (C++)

Size for 1000 by 1000

Addition

Time: 10.69 ms

Subtraction

Time: 10.557 ms

Multiplication

Time: 18069.7 ms

Size for 2000 by 2000

Addition

Time: 47.318 ms

Subtraction

Time: 46.359 ms

Multiplication

Time: 168670 ms

Timing for Version #4 Methods (Java)

Size for 1000 by 1000

That took 9.0 ms

That took 11.0 ms

That took 2201.0 ms

Size for 2000 by 2000

That took 3.0 ms

That took 2.0 ms

That took 2382.0 ms

Based on these results, the Matrix ADT was able to conduct the operations the fastest overall; between the two C++ programs, Version #2 was faster in all operations versus Version #3, with the exception of multiplication of larger matrix sizes, in which Version #3 was a little bit faster.