Project #4: Vectorized Array Multiplication/Reduction using SSE

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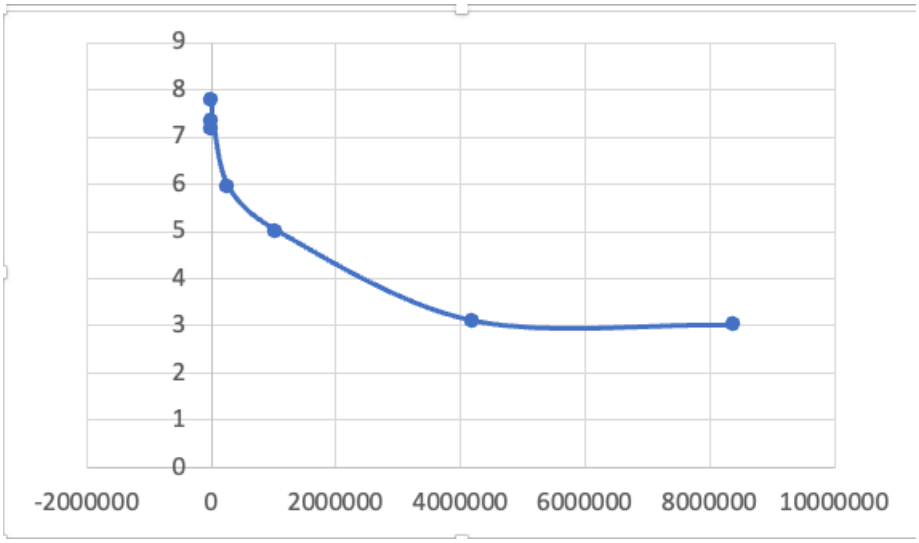
- What machine you ran this on
  I ran this project on OSU Linux flip server.
- Show the table of performances for each array size and the corresponding speedups

Arraysize	NonSimd	Simd	Speedup	NonSimdMul	SimdMul	Speedup
1024	167.93	1301.2	7.75	167.93	1295.07	7.71
4096	117.76	843.1	7.16	119.68	972.7	8.13
16384	166.84	1223.42	7.33	169.27	900.78	5.32
262144	163.7	972.95	5.94	173.81	1400.76	8.06
1048576	118.03	590.13	5	130.59	1013.72	7.76
4194304	206.76	641.89	3.1	217.95	776.82	3.56
8388608	204.77	615.99	3.01	217.32	1003.92	4.62

- Show the graph of SIMD/non-SIMD speedup versus array size (one curve only)



- What patterns are you seeing in the speedups?
  When the array size is small, the speedup is higher. However, when the array size becomes larger (nearly4000000), the speedup value tends to a constant value (nearly 3).
- Are they consistent across a variety of array sizes?
  No, they are not consistent across a variety of array sizes.
- Why or why not, do you think?
  This is because the speedup value is higher when the array size is small, but when the array size becomes larger, the speedup value is not as pronounced as it is for smaller arrays. The acceleration value is less pronounced when the array size becomes larger, because the acceleration value is not as pronounced in smaller arrays of size.