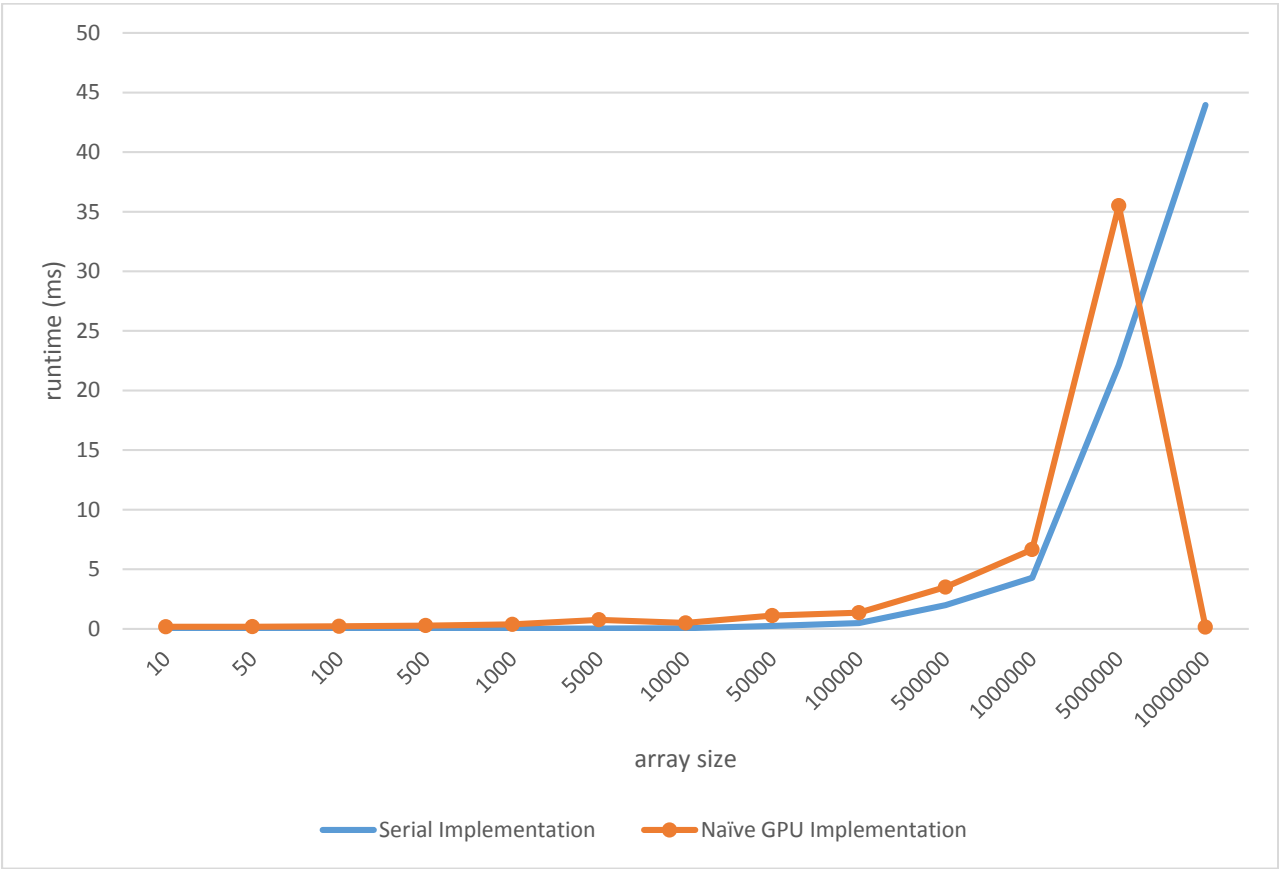


Project-2
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Serial vs. Naïve prefix scan



Size	1000	5000	10000	50000	100000	500000	1000000	5000000	10000000
Serial	0.006842	0.028225	0.058161	0.253599	0.49223	1.98731	4.28381	22.123	43.947
Naïve	0.380992	0.75904	0.497632	1.1176	1.35654	3.50685	6.65933	35.5035	0.145952

Runtime (microseconds) of serial vs. naïve GPU implementation of prefix scan

It's difficult to see from the graph itself, but a look at the table will make it clear that the serial implementation scales much more quickly than my naïve GPU implementation. This is because the GPU implementation roughly scales on $\log(n)$, one wave per depth, while the serial implementation is on the order of n , since it makes n calculations on the array to get the final result.

Naïve vs. Shared Memory Prefix Scan

-N/A-