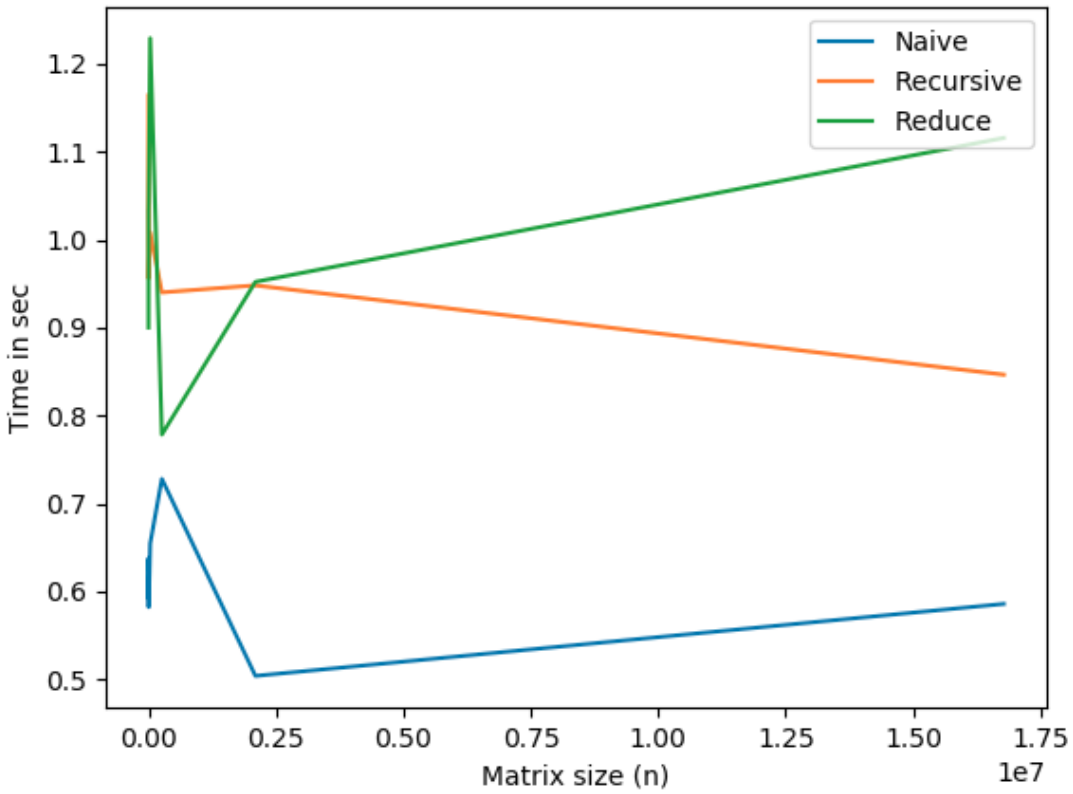
LAB 3

Vector Addition & sorting

Execution time is noted after n/p values are distributed among the process, as the distribution step is common in all the approaches. Time is calculated in sec. The execution was done by setting n=128 processors in all the methods.

n	Naïve Method	Recursive method	Reduce API
64	0.593096	1.163996	0.900003
512	0.637663	1.052003	1.032009
4096	0.582247	0.956008	1.044532
32768	0.654490	1.008000	1.229014
262144	0.727998	0.940016	0.778395
2097152	0.504028	0.948010	0.952009
16777216	0.585898	0.846477	1.115640

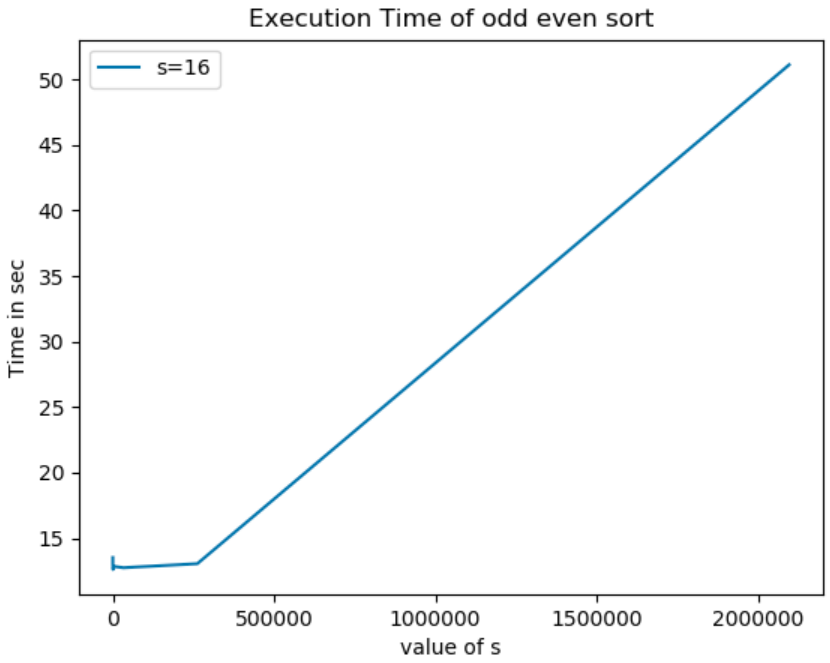


The observation is different from what is usually expected. Although the difference is not much to come to a conclusion, nevertheless naïve method performed best.

ODD EVEN SORT

The experiment was performed by setting n=128 processor.

s	Time (in sec)
8	13.511984
64	13.038856
512	12.607202
4096	12.835029
32768	12.739965
262144	13.046608
2097152	51.120001



The behavior is as expected as the size of vector increase an increase in execution time is observed. Also, as odd even sort is of O(n) time complexity, a linear increase is also interpolated as expected.