MTCS-103P Lab Work- 14 & 15

Bubble sort

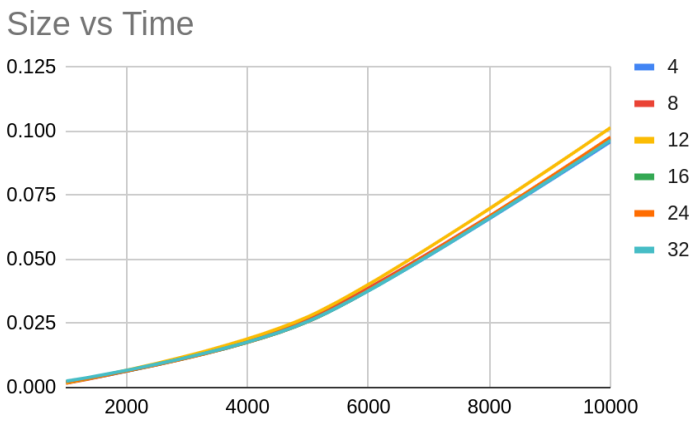
Regd no: 22555

Introduction

Bubble sort is a straightforward technique for sorting. It contrasts the first two items of a given dataset and when the first one exceeds the second it switches out the elements. This procedure is carried out until it reaches each pair of neighboring items. The entire procedure is repeated until there are no more swaps on the final pass. The typical runtime and worst-case scenario Bubble sorting sequentially takes $O(n^2)$ time. As a result, sequential bubble sort is hardly used in a huge dataset.

OpenMP:

N	Size	Time(s)
	1000	0.001852
4	5000	0.02579
	10000	0.09596
	1000	0.001567
8	5000	0.02673
	10000	0.096735
	1000	0.001735
12	5000	0.027563
	10000	0.101352
	1000	0.002114
16	5000	0.025746
	10000	0.097113
	1000	0.00211
24	5000	0.025726
	10000	0.097643
	1000	0.002395
32	5000	0.025713
	10000	0.096392



MPI:

N	Size	Time(s)
4	1000	0.000193
	2000	0.000681
	3000	0.001431
	5000	0.003831
3	1000	0.000319
	2000	0.001211
	3000	0.00231
	5000	0.006581
2	1000	0.000647
	2000	0.002132
	3000	0.005221
	5000	0.015712
1	1000	0.002327
	2000	0.008912
	3000	0.022142
	5000	0.065394