

N=99171

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	82310	87974	125162	103723	96374	99108.6	2079
Enhanced Insertion Sort	2087	2051	2484	2256	1583	2092.2	2391
Speed-up	39.43939	42.89322	50.38728	45.97651	60.88061	47.37052	0.869511

N=64000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	43029	33614	40131	29340	37601	36743	441
Enhanced Insertion Sort	899	984	1056	1057	996	998.4	303
Speed-up	47.86318	34.16057	38.00284	27.75781	37.75201	36.80188	1.455446

N=32000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	8788	9306	9067	5428	7608	8039.4	309
Enhanced Insertion Sort	766	518	377	335	261	451.4	123
Speed-up	11.47258	17.96525	24.0504	16.20299	29.14943	17.80992	2.512195

N=16000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	2516	2546	2202	2022	2144	2286	333
Enhanced Insertion Sort	263	125	155	114	158	163	58
Speed-up	9.56654	20.368	14.20645	17.73684	13.56962	14.02454	5.741379

N=8000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	537	248	549	449	428	442.2	29
Enhanced Insertion Sort	151	141	57	87	61	99.4	37
Speed-up	3.556291	1.758865	9.631579	5.16092	7.016393	4.448692	0.783784

N=4000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	93	108	120	130	240	138.2	79
Enhanced Insertion Sort	49	114	174	152	92	116.2	32
Speed-up	1.897959	0.947368	0.689655	0.855263	2.608696	1.189329	2.46875

N=2000

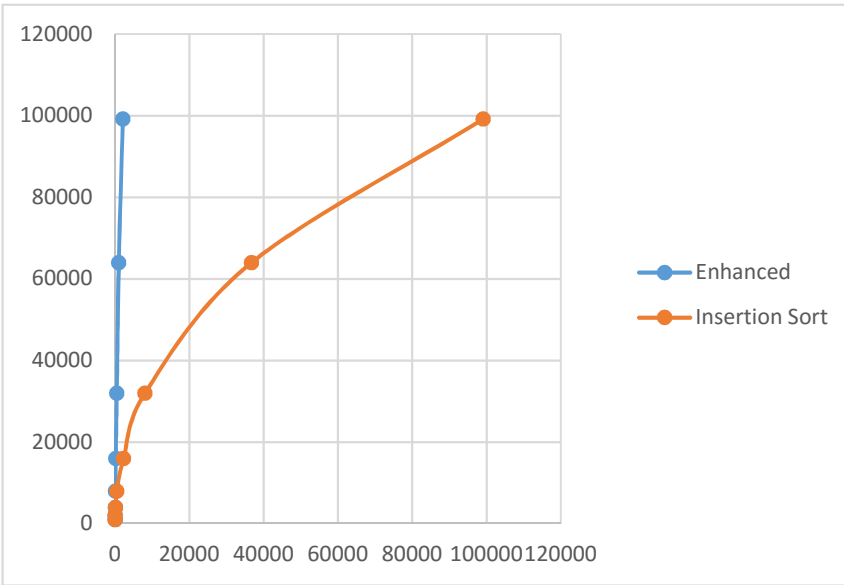
Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	32	56	32	42	40	40.4	12
Enhanced Insertion Sort	36	28	25	28	19	27.2	12
Speed-up	0.888889	2	1.28	1.5	2.105263	1.485294	1

N=1000

Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	20	16	13	29	16	18.8	16
Enhanced Insertion Sort	20	21	23	23	6	18.6	8

Speed-up

1 0.761905 0.565217 1.26087 2.66667 1.010753 2



Method	Comparisons	Shifts	Algorithms
Insertion Sort	$O(N^2)$	$O(N^2)$	$O(N^2)$
Enhanced	$O(\log N)$	$O(N^2)$	$O(N \log N)$