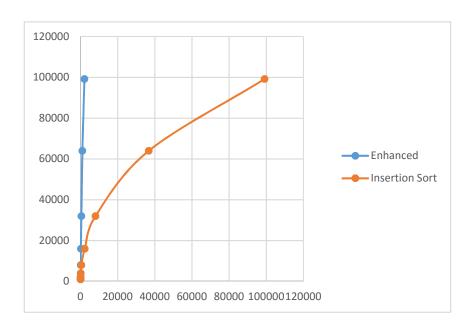
N=99171							
Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
Insertion Sort	82310	87974	125162	103723	96374	99108.6	2079
<b>Enhanced Insertion Sort</b>	2087	2051	2484	2256	1583	2092.2	2391
Speed-up	39.43939	42.89322	50.38728	45.97651	60.88061	47.37052	0.869511
	_						
N=64000							
Time (ms)	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	l						
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		
эреей-ир	11.47236	17.30323	24.0304	10.20233	23.14343	17.00332	2.512155
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		17.73684			
эрсси ир	3.30034	20.500	14.20043	17.75004	15.50502	14.02434	3.741373
N=8000							
N=8000 Time (ms)	Test1	Test2	Test3	Test4	Test5	Mean	Ordered
	Test1 537	Test2 248	Test3 549	Test4 449	Test5 428	Mean 442.2	Ordered 29
Time (ms)							
Time (ms) Insertion Sort	537	248	549	449	428 61	442.2 99.4	29 37
Time (ms) Insertion Sort Enhanced Insertion Sort	537 151	248 141	549 57	449 87	428 61	442.2 99.4	29 37
Time (ms) Insertion Sort Enhanced Insertion Sort	537 151	248 141	549 57	449 87	428 61	442.2 99.4	29 37
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms)	537 151 3.556291 Test1	248 141 1.758865 Test2	549 57 9.631579 Test3	449 87 5.16092 Test4	428 61 7.016393 Test5	442.2 99.4 4.448692 Mean	29 37 0.783784 Ordered
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort	537 151 3.556291 Test1 93	248 141 1.758865 Test2 108	549 57 9.631579 Test3 120	449 87 5.16092 Test4 130	428 61 7.016393 Test5 240	442.2 99.4 4.448692 Mean 138.2	29 37 0.783784 Ordered 79
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort	537 151 3.556291 Test1 93 49	248 141 1.758865 Test2 108 114	549 57 9.631579 Test3 120 174	449 87 5.16092 Test4 130 152	428 61 7.016393 Test5 240 92	442.2 99.4 4.448692 Mean 138.2 116.2	29 37 0.783784 Ordered
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort	537 151 3.556291 Test1 93 49	248 141 1.758865 Test2 108 114	549 57 9.631579 Test3 120 174	449 87 5.16092 Test4 130 152	428 61 7.016393 Test5 240	442.2 99.4 4.448692 Mean 138.2 116.2	29 37 0.783784 Ordered 79
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up	537 151 3.556291 Test1 93 49	248 141 1.758865 Test2 108 114	549 57 9.631579 Test3 120 174	449 87 5.16092 Test4 130 152	428 61 7.016393 Test5 240 92	442.2 99.4 4.448692 Mean 138.2 116.2	29 37 0.783784 Ordered 79 32
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000	537 151 3.556291 Test1 93 49 1.897959	248 141 1.758865 Test2 108 114 0.947368	549 57 9.631579 Test3 120 174 0.689655	449 87 5.16092 Test4 130 152 0.855263	428 61 7.016393 Test5 240 92 2.608696	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329	29 37 0.783784 Ordered 79 32 2.46875
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms)	537 151 3.556291 Test1 93 49 1.897959	248 141 1.758865 Test2 108 114 0.947368	549 57 9.631579 Test3 120 174 0.689655	449 87 5.16092 Test4 130 152 0.855263	428 61 7.016393 Test5 240 92 2.608696	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329	29 37 0.783784 Ordered 79 32 2.46875
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort	537 151 3.556291 Test1 93 49 1.897959	248 141 1.758865 Test2 108 114 0.947368 Test2 56	549 57 9.631579 Test3 120 174 0.689655 Test3 32	449 87 5.16092 Test4 130 152 0.855263 Test4 42	428 61 7.016393 Test5 240 92 2.608696 Test5 40	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort	537 151 3.556291 Test1 93 49 1.897959 Test1 32 36	248 141 1.758865 Test2 108 114 0.947368 Test2 56 28	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28	428 61 7.016393 Test5 240 92 2.608696 Test5 40 19	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4 27.2	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12 12
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort	537 151 3.556291 Test1 93 49 1.897959	248 141 1.758865 Test2 108 114 0.947368 Test2 56	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28	428 61 7.016393 Test5 240 92 2.608696 Test5 40 19	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up	537 151 3.556291 Test1 93 49 1.897959 Test1 32 36	248 141 1.758865 Test2 108 114 0.947368 Test2 56 28	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28	428 61 7.016393 Test5 240 92 2.608696 Test5 40 19	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4 27.2	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12 12
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up	537 151 3.556291 Test1 93 49 1.897959 Test1 32 36 0.888889	248 141 1.758865 Test2 108 114 0.947368 Test2 56 28 2	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25 1.28	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28 1.5	428 61 7.016393 Test5 240 92 2.608696 Test5 40 19 2.105263	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4 27.2 1.485294	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12 12
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up	537 151 3.556291 Test1 93 49 1.897959 Test1 32 36 0.888889	248 141 1.758865 Test2 108 114 0.947368 Test2 56 28 2	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25 1.28	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28 1.5	428 61 7.016393 Test5 240 92 2.608696 Test5 40 19 2.105263	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4 27.2 1.485294	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12 12 1
Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=4000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up  N=2000 Time (ms) Insertion Sort Enhanced Insertion Sort Speed-up	537 151 3.556291 Test1 93 49 1.897959 Test1 32 36 0.888889	248 141 1.758865 Test2 108 114 0.947368 Test2 56 28 2	549 57 9.631579 Test3 120 174 0.689655 Test3 32 25 1.28	449 87 5.16092 Test4 130 152 0.855263 Test4 42 28 1.5	428 61 7.016393 Test5 240 92 2.608696 Test5 40 2.105263 Test5	442.2 99.4 4.448692 Mean 138.2 116.2 1.189329 Mean 40.4 27.2 1.485294	29 37 0.783784 Ordered 79 32 2.46875 Ordered 12 12



Method	Comparisons	Shifts	Algorithms
Insertion Sort	$O(N^2)$	$O(N^2)$	$O(N^2)$
Enhanced	O(logN)	$O(N^2)$	O(NlogN)