

Sorting Test Cases

Sorting algorithm	Test No.	Elapsed time (second)					Number of comparisons					Time complexity			Stability
		Number of items					Number of items					Best	Average	Worst	
		100	500	1000	1500	2000	100	500	1000	1500	2000				
Selection sort	1st	0.0	0.015	0.050	0.060	0.064	4950	124750	499500	1124250	1999000	O(n ²)	O(n ²)	O(n ²)	No
	2nd	0.0	0.015	0.048	0.098	0.063	4950	124750	499500	1124250	1999000				
	3rd	0.0	0.015	0.053	0.063	0.065	4950	124750	499500	1124250	1999000				
	Ave.	0.000	0.015	0.050	0.074	0.064	4950	124750	499500	1124250	1999000				
Insertion sort	1st	0.0	0.006	0.032	0.052	0.062	2595	62646	246744	571847	985074	O(n)	O(n ²)	O(n ²)	Yes
	2nd	0.0	0.005	0.046	0.053	0.057	2615	59943	247628	561415	966216				
	3rd	0.0	0.006	0.028	0.052	0.059	2349	63858	242777	566757	1011707				
	Ave.	0.000	0.006	0.035	0.052	0.059	2520	62149	245716	566673	987666				
Bubble sort	1st	0.002	0.016	0.043	0.100	0.109	4950	124750	499500	1124250	1999000	O(n)	O(n ²)	O(n ²)	Yes
	2nd	0.001	0.013	0.047	0.089	0.078	4950	124750	499500	1124250	1999000				
	3rd	0.001	0.015	0.042	0.047	0.061	4950	124750	499500	1124250	1999000				
	Ave.	0.001	0.015	0.044	0.079	0.083	4950	124750	499500	1124250	1999000				
Quick sort	1st	0.0	0.001	0.002	0.023	0.004	711	5102	11092	17935	26852	O(n log n)	O(n log n)	O(n ²)	Depends
	2nd	0.0	0.001	0.001	0.009	0.017	677	5463	11110	17155	24507				
	3rd	0.0	0.000	0.002	0.004	0.008	685	4653	11704	18355	24514				
	Ave.	0.000	0.001	0.002	0.012	0.010	691	5073	11302	17815	25291				
Merge sort	1st	0.0	0.001	0.002	0.004	0.041	542	3861	8676	13940	19464	O(n log n)	O(n log n)	O(n log n)	Yes
	2nd	0.0	0.001	0.003	0.004	1.282	537	3840	8730	13977	19412				
	3rd	0.0	0.001	0.002	0.016	0.007	537	3855	8690	13968	19393				
	Ave.	0.000	0.001	0.002	0.008	0.443	539	3852	8699	13962	19423				