Summary: Comparison Based Sort Properties

Sorting Algorithm	Strategy employed	Worst case complexity	Average case complexity	Stable
Bubble Sort	Exchange	$O(n^2)$	$O(n^2)$	Yes
Selection Sort	Selection	$O(n^2)$	$O(n^2)$	No
Insertion Sort	Insertion	$O(n^2)$	$O(n^2)$	Yes
Heapsort	Selection	$O(n \log n)$	$O(n \log n)$	No
Quicksort	D & C	$O(n^2)$	$O(n \log n)$	Maybe
Mergesort	D & C	$O(n \log n)$	$O(n \log n)$	Yes

Summary: Empirical Sort Timings

Algorithm	128	256	512	1024	O1024	R1024	2048
Bubble Sort	54	221	881	3621	1285	5627	14497
Selection Sort	12	45	164	634	643	833	2497
Insertion Sort	15	69	276	1137	6	2200	4536
Heapsort	21	45	103	236	215	249	527
Quicksort	12	27	55	112	1131	1200	230
Quicksort2	6	12	24	57	1115	1191	134
Mergesort	18	36	88	188	166	170	409
Mergesort2	6	22	48	112	94	93	254

- Column titles show the number of items sorted
- O1024: 1024 items already in ascending order
- R1024: 1024 items already in descending order
- Quicksort2 and Mergesort2: sort switches to selection sort during recursion once size of array drops to 16 or less.