

Non-recursive linear search output

=== Best Case Analysis ===

n	Key	T(n)	G(n)	T(n)/G(n)
2	1	1	1	1.00
4	1	1	1	1.00
6	1	1	1	1.00
8	1	1	1	1.00
10	1	1	1	1.00
12	1	1	1	1.00
14	1	1	1	1.00
16	1	1	1	1.00
18	1	1	1	1.00
20	1	1	1	1.00

=== Worst Case Analysis ===

n	Key	T(n)	G(n)	T(n)/G(n)
2	2	2	2	1.00
4	4	4	4	1.00
6	6	6	6	1.00
8	8	8	8	1.00
10	10	10	10	1.00
12	12	12	12	1.00
14	14	14	14	1.00
16	16	16	16	1.00
18	18	18	18	1.00
20	20	20	20	1.00

=== Random Case Analysis ===

n	Key	T(n)	G(n)	T(n)/G(n)
2	2	2	1	2.00
4	3	3	2	1.50
6	4	4	3	1.33
8	4	4	4	1.00
10	4	4	5	0.80
12	8	8	6	1.33
14	11	11	7	1.57
16	13	13	8	1.62
18	16	16	9	1.78
20	2	2	10	0.20

Non-recursive maximum array element output

=== Best Case Analysis ===

n	Max	T(n)	G(n)	T(n)/G(n)
2	2	1	1	1.00
4	4	3	3	1.00
6	6	5	5	1.00
8	8	7	7	1.00
10	10	9	9	1.00
12	12	11	11	1.00
14	14	13	13	1.00
16	16	15	15	1.00
18	18	17	17	1.00
20	20	19	19	1.00

=== Worst Case Analysis ===

n	Max	T(n)	G(n)	T(n)/G(n)
2	2	1	1	1.00
4	4	3	3	1.00
6	6	5	5	1.00
8	8	7	7	1.00
10	10	9	9	1.00
12	12	11	11	1.00
14	14	13	13	1.00
16	16	15	15	1.00
18	18	17	17	1.00
20	20	19	19	1.00

=== Random Case Analysis ===

n	Max	T(n)	G(n)	T(n)/G(n)
2	886	1	1	1.00
4	915	3	3	1.00
6	649	5	5	1.00
8	926	7	7	1.00
10	862	9	9	1.00
12	929	11	11	1.00
14	980	13	13	1.00
16	996	15	15	1.00
18	814	17	17	1.00
20	932	19	19	1.00

Recursive linear search output

=== Best Case Analysis ===					
n	Key	T(n)	G(n)	T(n)/G(n)	
2	1	1	1	1.00	
4	1	1	1	1.00	
6	1	1	1	1.00	
8	1	1	1	1.00	
10	1	1	1	1.00	
12	1	1	1	1.00	
14	1	1	1	1.00	
16	1	1	1	1.00	
18	1	1	1	1.00	
20	1	1	1	1.00	
=== Worst Case Analysis ===					
n	Key	T(n)	G(n)	T(n)/G(n)	
2	2	2	2	1.00	
4	4	4	4	1.00	
6	6	6	6	1.00	
8	8	8	8	1.00	
10	10	10	10	1.00	
12	12	12	12	1.00	
14	14	14	14	1.00	
16	16	16	16	1.00	
18	18	18	18	1.00	
20	20	20	20	1.00	
=== Random Case Analysis ===					
n	Key	T(n)	G(n)	T(n)/G(n)	
2	2	2	1	2.00	
4	3	3	2	1.50	
6	4	4	3	1.33	
8	4	4	4	1.00	
10	4	4	5	0.80	
12	8	8	6	1.33	
14	11	11	7	1.57	
16	13	13	8	1.62	
18	16	16	9	1.78	
20	2	2	10	0.20	

Recursive binary search output

=== Best Case Analysis ===					
n	Key	T(n)	G(n): 1	T(n)/G(n)	
2	1	1	1	1.00	
4	2	1	1	1.00	
8	4	1	1	1.00	
16	8	1	1	1.00	
32	16	1	1	1.00	
64	32	1	1	1.00	
128	64	1	1	1.00	
256	128	1	1	1.00	
512	256	1	1	1.00	
1024	512	1	1	1.00	
=== Worst Case Analysis ===					
n	Key	T(n)	G(n):log2(n)	T(n)/G(n)	
2	1	1	1.00	1.00	
4	1	2	2.00	1.00	
8	1	3	3.00	1.00	
16	1	4	4.00	1.00	
32	1	5	5.00	1.00	
64	1	6	6.00	1.00	
128	1	7	7.00	1.00	
256	1	8	8.00	1.00	
512	1	9	9.00	1.00	
1024	1	10	10.00	1.00	
=== Random Case Analysis ===					
n	Key	T(n)	G(n):log2(n)	T(n)/G(n)	
2	2	2	1.00	2.00	
4	3	2	2.00	1.00	
8	2	2	3.00	0.67	
16	4	2	4.00	0.50	
32	18	4	5.00	0.80	
64	64	7	6.00	1.17	
128	75	7	7.00	1.00	
256	237	8	8.00	1.00	
512	298	8	9.00	0.89	
1024	206	9	10.00	0.90	

Merge sort

n	Case	T(n)	G(n):nlogn	T(n)/G(n)
2	Random	2	2	1.00
2	Increasing	2	2	1.00
2	Decreasing	2	2	1.00
4	Random	8	8	1.00
4	Increasing	7	8	0.88
4	Decreasing	7	8	0.88
8	Random	24	24	1.00
8	Increasing	19	24	0.79
8	Decreasing	19	24	0.79
16	Random	62	64	0.97
16	Increasing	47	64	0.73
16	Decreasing	47	64	0.73
32	Random	148	160	0.93
32	Increasing	111	160	0.69
32	Decreasing	111	160	0.69
64	Random	376	384	0.98
64	Increasing	255	384	0.66
64	Decreasing	255	384	0.66
128	Random	867	896	0.97
128	Increasing	575	896	0.64
128	Decreasing	575	896	0.64
256	Random	1977	2048	0.97
256	Increasing	1279	2048	0.62
256	Decreasing	1279	2048	0.62
512	Random	4468	4608	0.97
512	Increasing	2815	4608	0.61
512	Decreasing	2815	4608	0.61
1024	Random	9972	10240	0.97
1024	Increasing	6143	10240	0.60
1024	Decreasing	6143	10240	0.60

Quick sort

n	Case	T(n)	G(n):nlogn	T(n)/G(n)
2	Random	1	2	0.50
2	Increasing	1	2	0.50
2	Decreasing	1	2	0.50
4	Random	6	8	0.75
4	Increasing	6	8	0.75
4	Decreasing	6	8	0.75
8	Random	15	24	0.62
8	Increasing	28	24	1.17
8	Decreasing	28	24	1.17
16	Random	50	64	0.78
16	Increasing	120	64	1.88
16	Decreasing	120	64	1.88
32	Random	134	160	0.84
32	Increasing	496	160	3.10
32	Decreasing	496	160	3.10
64	Random	367	384	0.96
64	Increasing	2016	384	5.25
64	Decreasing	2016	384	5.25
128	Random	894	896	1.00
128	Increasing	8128	896	9.07
128	Decreasing	8128	896	9.07
256	Random	2108	2048	1.03
256	Increasing	32640	2048	15.94
256	Decreasing	32640	2048	15.94
512	Random	4722	4608	1.02
512	Increasing	130816	4608	28.39
512	Decreasing	130816	4608	28.39
1024	Random	11027	10240	1.08
1024	Increasing	523776	10240	51.15
1024	Decreasing	523776	10240	51.15