Algoritmi de Sortare

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01
Radix Sort 10

Timpi de rulare

	Vector sortat	Vector sortat inversat	Vector cu elementele egale	Vector random	Vector cu putine inversiuni
N = 1e4	4ms	3ms	2ms	2ms	5ms
N = 1e6	181ms	183ms	171ms	184ms	188ms
N = 1e7	2193ms	2212ms	2184ms	2256ms	2240ms

02 MergeSort

Timpi de rulare - nr intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	7ms	2ms	6ms	2ms	7ms
N = 1e6	334ms	333ms	331ms	438ms	447ms
N = 1e7	3674ms	3678ms	3625ms	5132ms	5012ms

Timpi de rulare – nr. real

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	7ms	3ms	2ms	7ms	3ms
N = 1e6	334ms	352ms	339ms	476ms	482ms
N = 1e7	3815ms	3987ms	4002ms	5710ms	5469ms

03

ShellSort

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	0.7ms	9ms	0.9ms	4ms	4ms
N = 1e6	986ms	341ms	48ms	1287ms	1252ms
N = 1e7	25260ms	31439ms	550ms	29549ms	29178ms

Timpi de rulare - nr. reale

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	1.5ms	0.5ms	0.3ms	1ms	1ms
N = 1e6	939ms	297ms	62ms	1344ms	1343ms
N = 1e7	30352ms	38333ms	607ms	28731ms	27891ms

04

QuickSort Median 5

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	16ms	17ms	435ms	13ms	13ms
N = 1e6	1041ms	1068ms	>10m	1146ms	1138ms
N = 1e7	10775ms	11179ms	>10m	11648ms	11822ms

Timpi de rulare – nr. reale

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	12ms	11ms	493ms	10ms	11ms
N = 1e6	1047ms	1088ms	>10m	1174ms	1173ms
N = 1e7	10966ms	11436ms	>10m	12167ms	12119ms

04

QuickSort First Pivot

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	422ms	257ms	425ms	1ms	1ms
N = 1e6	>10m	>10m	>10m	207ms	1170ms
N = 1e7	>10m	>10m	>10m	13062ms	15120ms

Timpi de rulare – nr. reale

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	445ms	276ms	446ms	1ms	1ms
N = 1e6	>10m	>10m	>10m	226ms	234ms
N = 1e7	>10m	>10m	>10m	13427ms	14022ms

06
RadixSort 2^16

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	2ms	2ms	4ms	5ms	4ms
N = 1e6	112ms	122ms	62ms	112ms	114ms
N = 1e7	1470ms	1470ms	678ms	1495ms	1493ms

05

HeapSort

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	5ms	4ms	0.2ms	2ms	3ms
N = 1e6	327ms	343ms	18ms	437ms	472ms
N = 1e7	4223ms	3935ms	195ms	8632ms	8382ms

Timpi de rulare – nr. reale

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	2ms	2ms	0.1ms	2ms	2ms
N = 1e6	358ms	340ms	18ms	485ms	520ms
N = 1e7	4229ms	4285ms	192ms	9106ms	9140ms

06

TimSort

Timpi de rulare – nr. intregi

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	2ms	2ms	0.7ms	3ms	1ms
N = 1e6	128ms	160ms	126ms	206ms	207ms
N = 1e7	2117ms	2844ms	1804ms	2315ms	2415ms

Timpi de rulare - nr. reale

	Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
N = 1e4	2ms	1ms	1ms	1ms	2ms
N = 1e6	158ms	179ms	162ms	218ms	204ms
N = 1e7	2255ms	2236ms	2091ms	2815ms	2528ms

Teste N = 1e4

Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
1) Shell Sort 2) Radix 2^16 3) Tim Sort 4) Radix 10 5) Heap Sort 6) Merge Sort 7) Quick Sort Median 5 8) Quick Sort Last Pivot	1) Merge Sort 2) Radix 2^16 3) Tim Sort 4) Radix 10 5) Heap Sort 6) Shell Sort 7) Quick Sort Median 5 8) Quick Sort Last Pivot	1) Heap Sort 2) Tim Sort 3) Shell Sort 4) Radix 10 5) Radix 2^16 6) Merge Sort 7) Quick Sort Last Pivot 8) Quick Sort Median 5	1) Quick Sort Last Pivot 2) Heap Sort 3) Radix 10 4) Merge Sort 5) Tim Sort 6) Shell Sort 7) Radix 2^16 8) Quick Sort Median 5	1) Quick Sort Last Pivot 2) Tim Sort 3) Heap Sort 4) Shell Sort 5) Radix 2^16 6) Radix 10 7) Merge Sort 8) Quick Sort Median 5

Teste N = 1e6

Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
1) Radix 2^16 2) Tim Sort 3) Radix 10 4) Heap Sort 5) Merge Sort 6) Shell Sort 7) Quick sort Median 5 8) Quick Sort Last Pivot	1) Radix 2^16 2) Tim Sort 3) Radix 10 4) Heap Sort 5) Merge Sort 6) Shell Sort 7) Quick Sort Median 5 8) Quick Sort Last Pivot	1) Heap Sort 2) Shell Sort 3) Radix 2^16 4) Tim Sort 5) Radix 10 6) Merge Sort 7) Quick Sort Last Pivot 8) Quick Sort Median 5	1) Radix 2^16 2) Radix 10 3) Tim Sort 4) QuickSort 5) Heap Sort 6) Merge Sort 7) Quick Sort Median 5 8) Shell Sort	1) Radix 2^16 2) Radix 10 3) Tim Sort 4) Merge Sort 5) Heap Sort 6) Quick Sort Median 5 7) Quick Sort Last Pivat 8) Shell Sort

Teste N = 1e7

Vector sortat	Vector sortat inversat	Vector cu elemente egale	Vector random	Vector cu putine inversiuni
1) Radix 2^16 2) Tim Sort 3) Radix 10 4) Heap Sort 5) Merge Sort 6) Quick Sort Median 5 7) Shell Sort 8) Quick Sort Last Pivot	1) Radix 2^16 2) Radix 10 3) Tim Sort 4) Merge Sort 5) Heap Sort 6) Quick Sort Median 5 7) Shell Sort 8) Quick Sort Last Pivot	1) Heap Sort 2) Shell Sort 3) Radix 2^16 4) Tim Sort 5) Radix 10 6) Merge Sort 7) Quick Sort Last Pivot 8) Quick Sort Median 5	1) Radix 2^16 2) Radix 10 3) Tim Sort 4) QuickSort 5) Heap Sort 6) Merge Sort 7) Quick Sort Median 5 8) Shell Sort	1) Radix 2^16 2) Radix 10 3) Tim Sort 4) Merge Sort 5) Heap Sort 6) Quick Sort Median 5 7) Quick Sort Last Pivat 8) Shell Sort