Structuri de date - Tema 1

Sortări - comparare a timpilor de rulare

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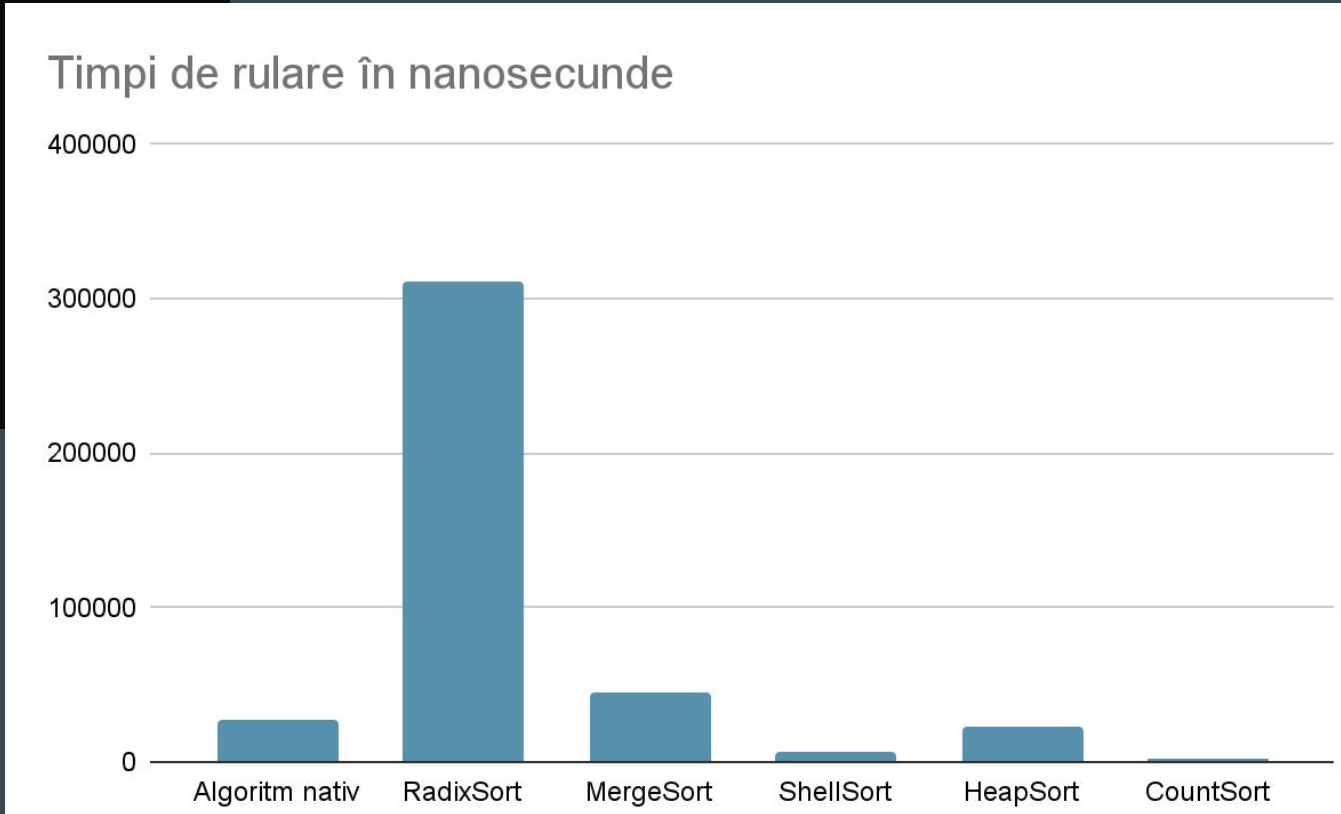
Algoritmi implementați:

- RadixSort
- MergeSort
- ShellSort
- HeapSort
- CountSort

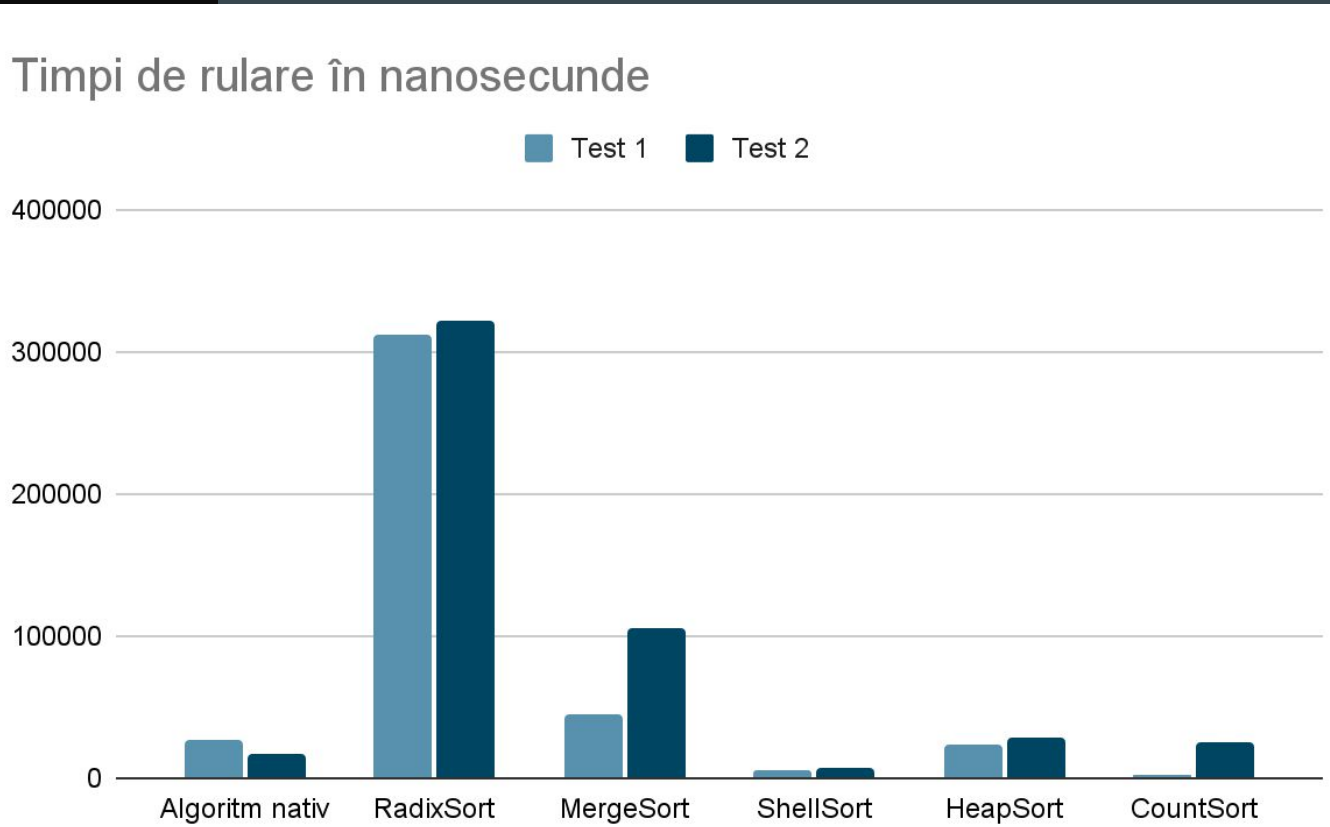
```
TEST 1-------------------------------------------------
numar elemente = 100
maxim = 100

Algoritm nativ de sortare timp de executie: 27100ns
SORTARE CORECTA

RadixSort timp de executie: 311400ns
SORTARE CORECTA

MergeSort timp de executie: 44700ns
SORTARE CORECTA

ShellSort timp de executie: 6400ns
SORTARE CORECTA

HeapSort timp de executie: 23300ns
SORTARE CORECTA

CountSort timp de executie: 2800ns
SORTARE CORECTA
```

Test 1



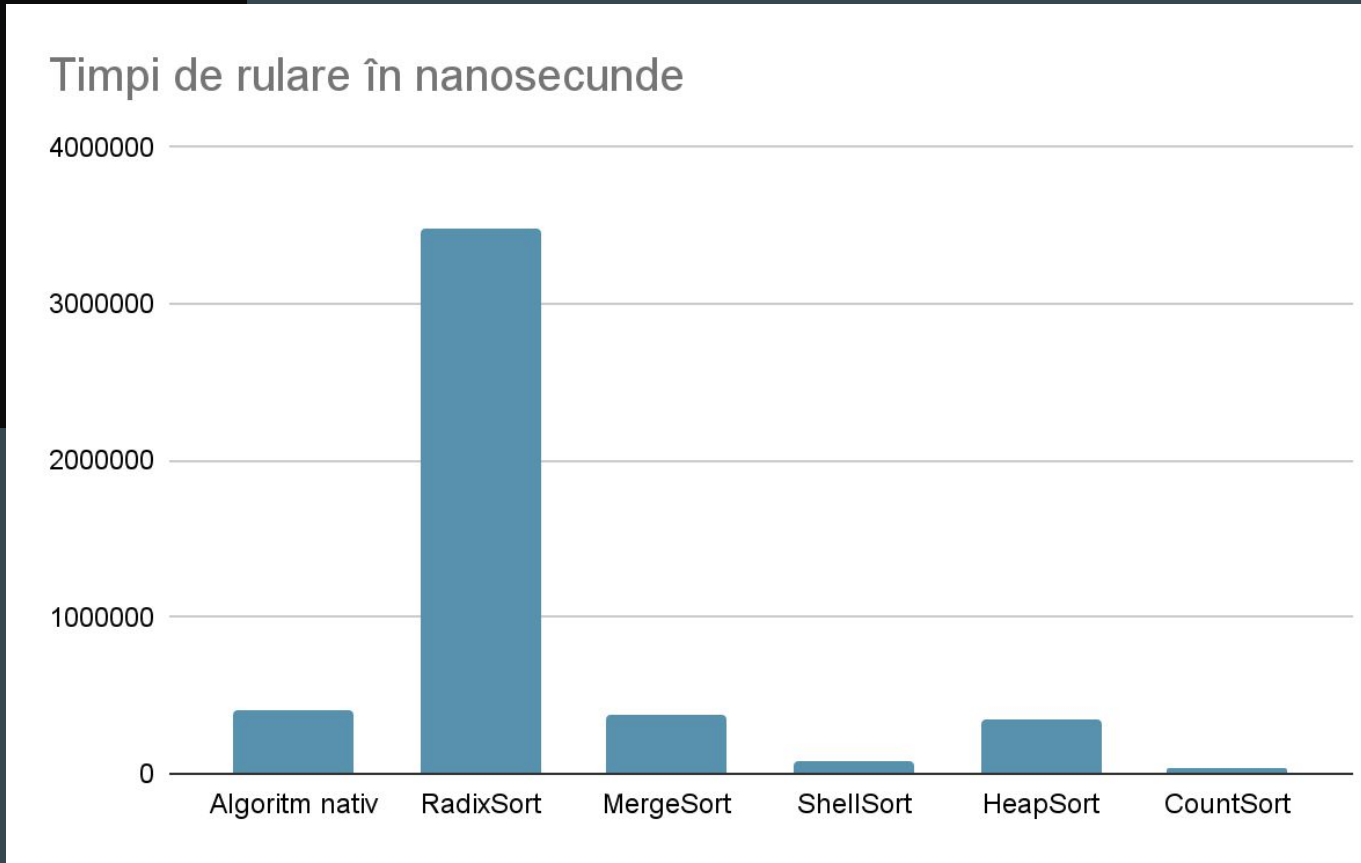
```
TEST 2-------------------------------------------------
numar elemente = 100
maxim = 1000

Algoritm nativ de sortare timp de executie: 17200ns
SORTARE CORECTA

RadixSort timp de executie: 322500ns
SORTARE CORECTA

MergeSort timp de executie: 105400ns
SORTARE CORECTA

ShellSort timp de executie: 7500ns
SORTARE CORECTA

HeapSort timp de executie: 28700ns
SORTARE CORECTA

CountSort timp de executie: 25400ns
SORTARE CORECTA
```

Test 2



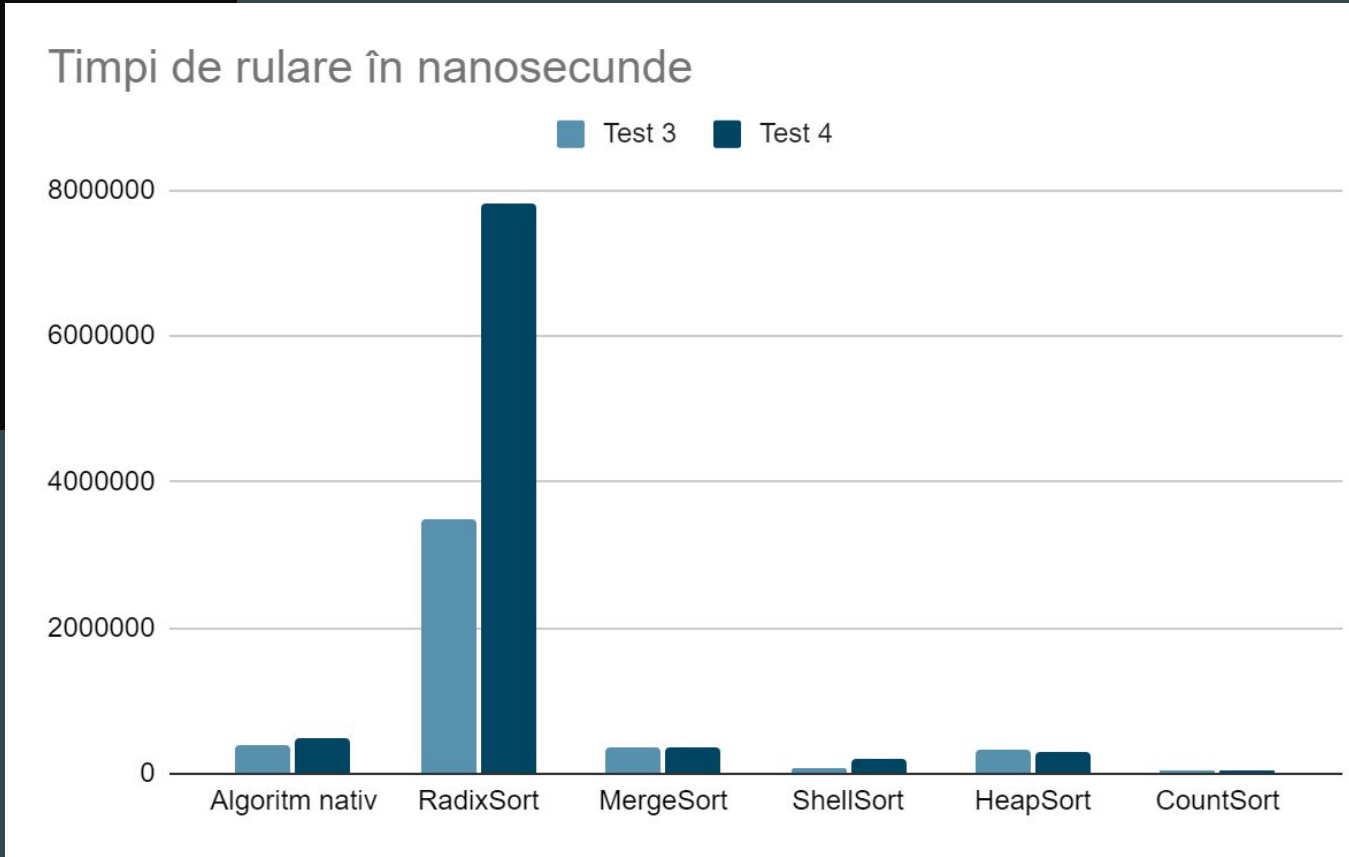
```
TEST 3-----------------------------------------------
numar elemente = 1000
maxim = 1000

Algoritm nativ de sortare timp de executie: 402000ns
SORTARE CORECTA

RadixSort timp de executie: 3480800ns
SORTARE CORECTA

MergeSort timp de executie: 369300ns
SORTARE CORECTA

ShellSort timp de executie: 81300ns
SORTARE CORECTA

HeapSort timp de executie: 340500ns
SORTARE CORECTA

CountSort timp de executie: 34900ns
SORTARE CORECTA
```

Test 3



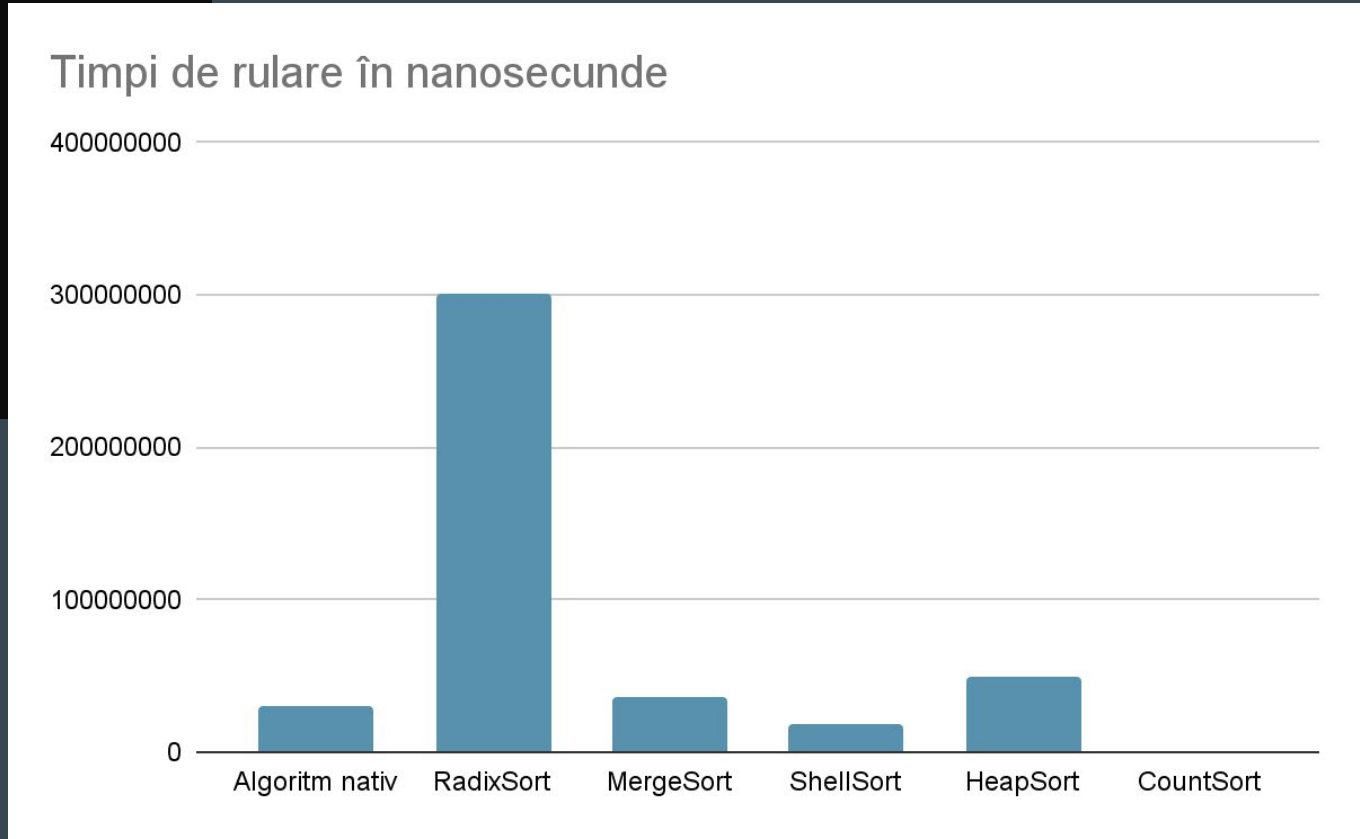
```
TEST 4-------------------------------------------------
numar elemente = 1000
maxim = 10000

Algoritm nativ de sortare timp de executie: 495700ns
SORTARE CORECTA

RadixSort timp de executie: 7815600ns
SORTARE CORECTA

MergeSort timp de executie: 360800ns
SORTARE CORECTA

ShellSort timp de executie: 196100ns
SORTARE CORECTA

HeapSort timp de executie: 291800ns
SORTARE CORECTA

CountSort timp de executie: 51900ns
SORTARE CORECTA
```

Test 4



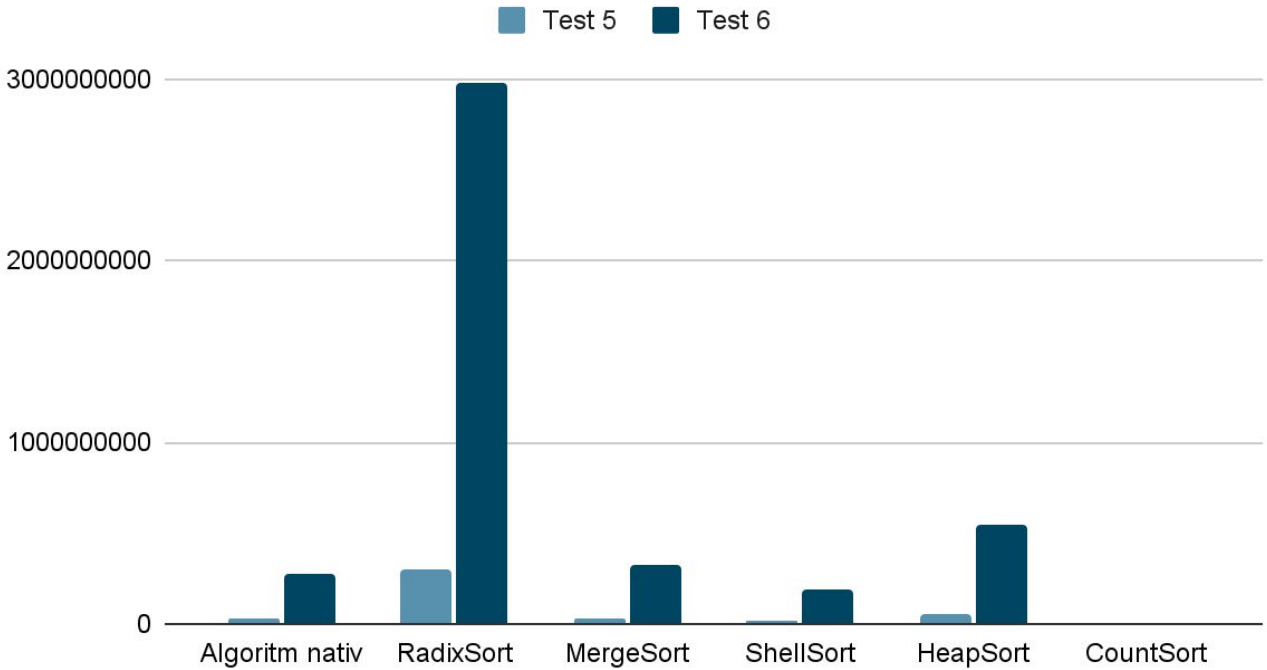
```
TEST 5-------------------------------------------------
numar elemente = 100000
maxim = 1000

Algoritm nativ de sortare timp de executie: 30595000ns
SORTARE CORECTA

RadixSort timp de executie: 300370900ns
SORTARE CORECTA

MergeSort timp de executie: 35534400ns
SORTARE CORECTA

ShellSort timp de executie: 18931000ns
SORTARE CORECTA

HeapSort timp de executie: 48957400ns
SORTARE CORECTA

CountSort timp de executie: 370000ns
SORTARE CORECTA
```

Test 5



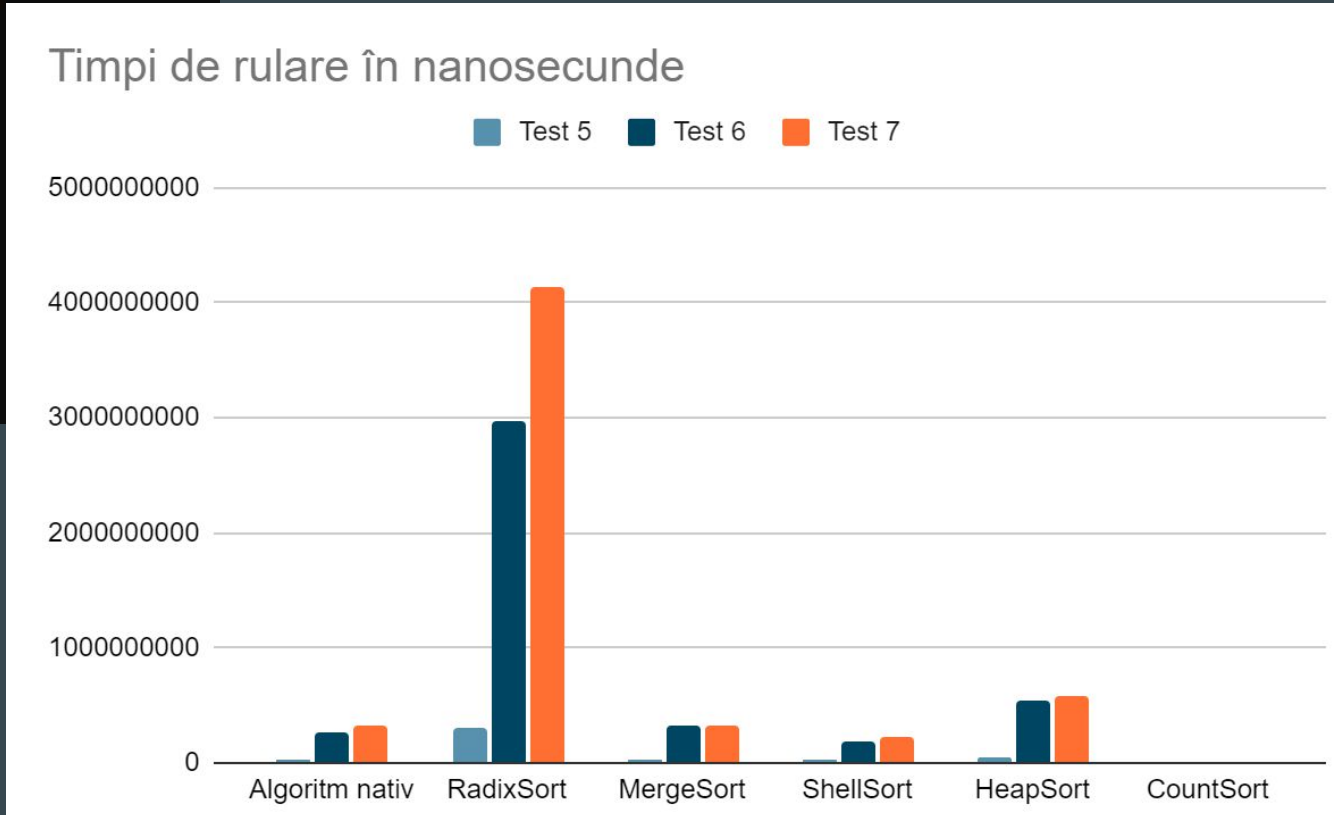
```
TEST 6-------------------------------------------------
numar elemente = 1000000
maxim = 1000

Algoritm nativ de sortare timp de executie: 274205900ns
SORTARE CORECTA

RadixSort timp de executie: 2977961900ns
SORTARE CORECTA

MergeSort timp de executie: 321154800ns
SORTARE CORECTA

ShellSort timp de executie: 188276600ns
SORTARE CORECTA

HeapSort timp de executie: 546416300ns
SORTARE CORECTA

CountSort timp de executie: 3294800ns
SORTARE CORECTA
```

Test 6



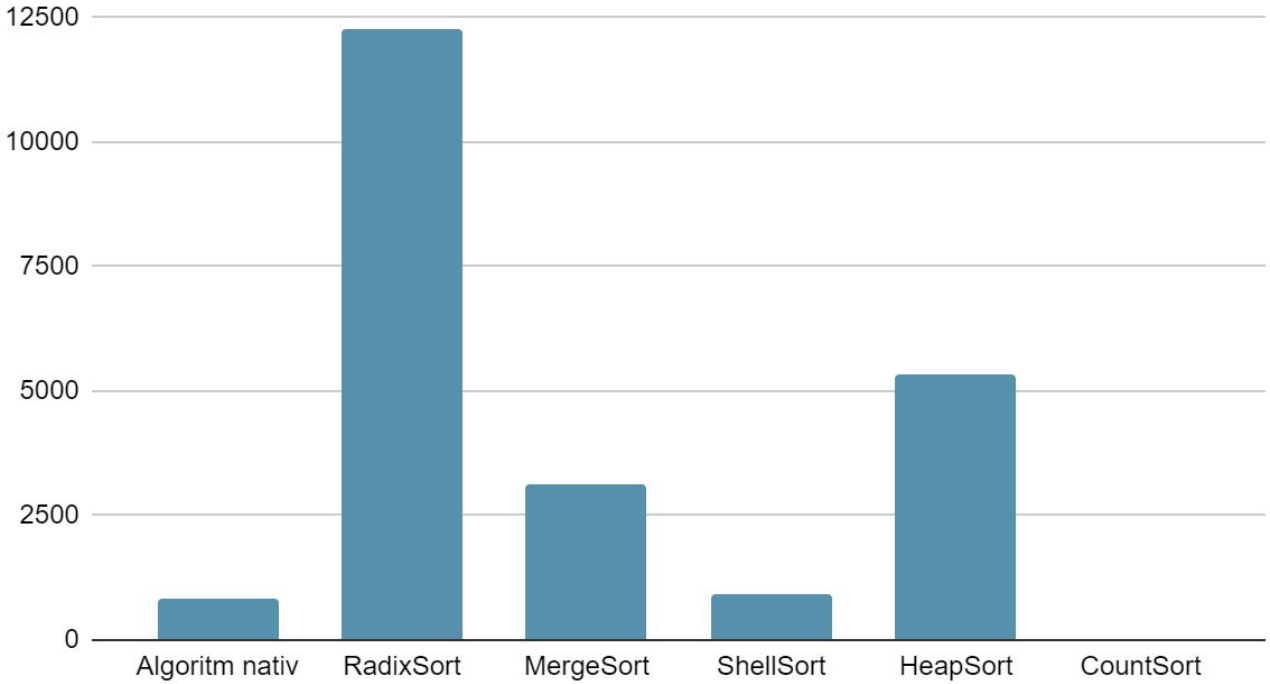
```
TEST 7-------------------------------------------------
numar elemente = 1000000
maxim = 10000

Algoritm nativ de sortare timp de executie: 333160400ns
SORTARE CORECTA

RadixSort timp de executie: 4137747400ns
SORTARE CORECTA

MergeSort timp de executie: 328837200ns
SORTARE CORECTA

ShellSort timp de executie: 216272000ns
SORTARE CORECTA

HeapSort timp de executie: 583829400ns
SORTARE CORECTA

CountSort timp de executie: 4875700ns
SORTARE CORECTA
```

Test 7



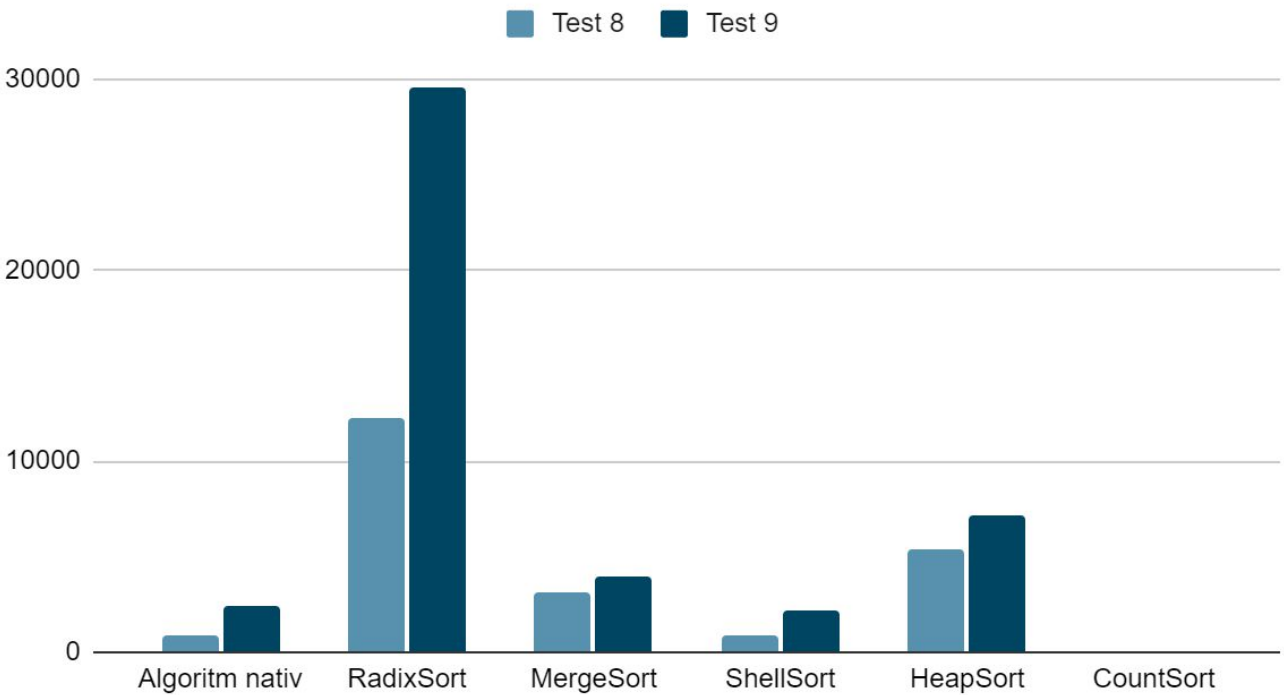
```
TEST 8-------------------------------------------------
numar elemente = 10000000
maxim = 10

Algoritm nativ de sortare timp de executie: 830514500ns
SORTARE CORECTA

RadixSort timp de executie: 12259559700ns
SORTARE CORECTA

MergeSort timp de executie: 3144437200ns
SORTARE CORECTA

ShellSort timp de executie: 912154100ns
SORTARE CORECTA

HeapSort timp de executie: 5354339200ns
SORTARE CORECTA

CountSort timp de executie: 33557200ns
SORTARE CORECTA
```

Test 8



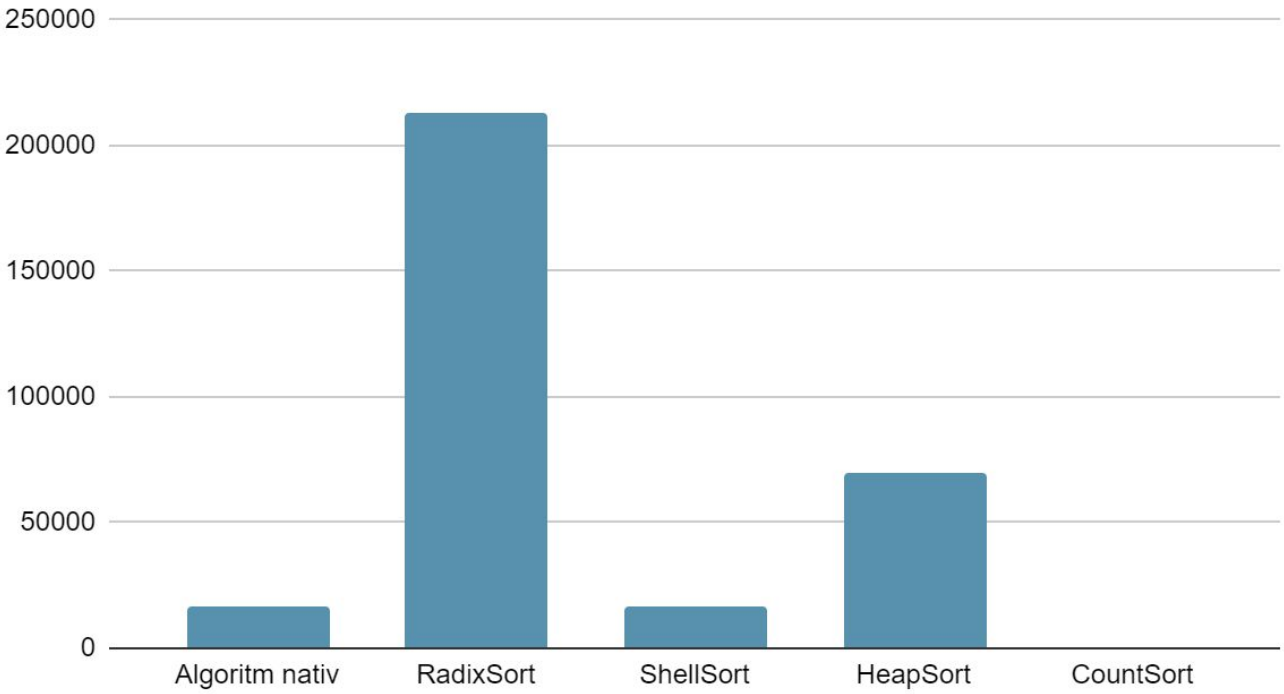
```
TEST 9-------------------------------------------------
numar elemente = 10000000
maxim = 1000

Algoritm nativ de sortare timp de executie: 2404705000ns
SORTARE CORECTA

RadixSort timp de executie: 29593076000ns
SORTARE CORECTA

MergeSort timp de executie: 3976956800ns
SORTARE CORECTA

ShellSort timp de executie: 2168597800ns
SORTARE CORECTA

HeapSort timp de executie: 7197772700ns
SORTARE CORECTA

CountSort timp de executie: 36170900ns
SORTARE CORECTA
```

Test 9

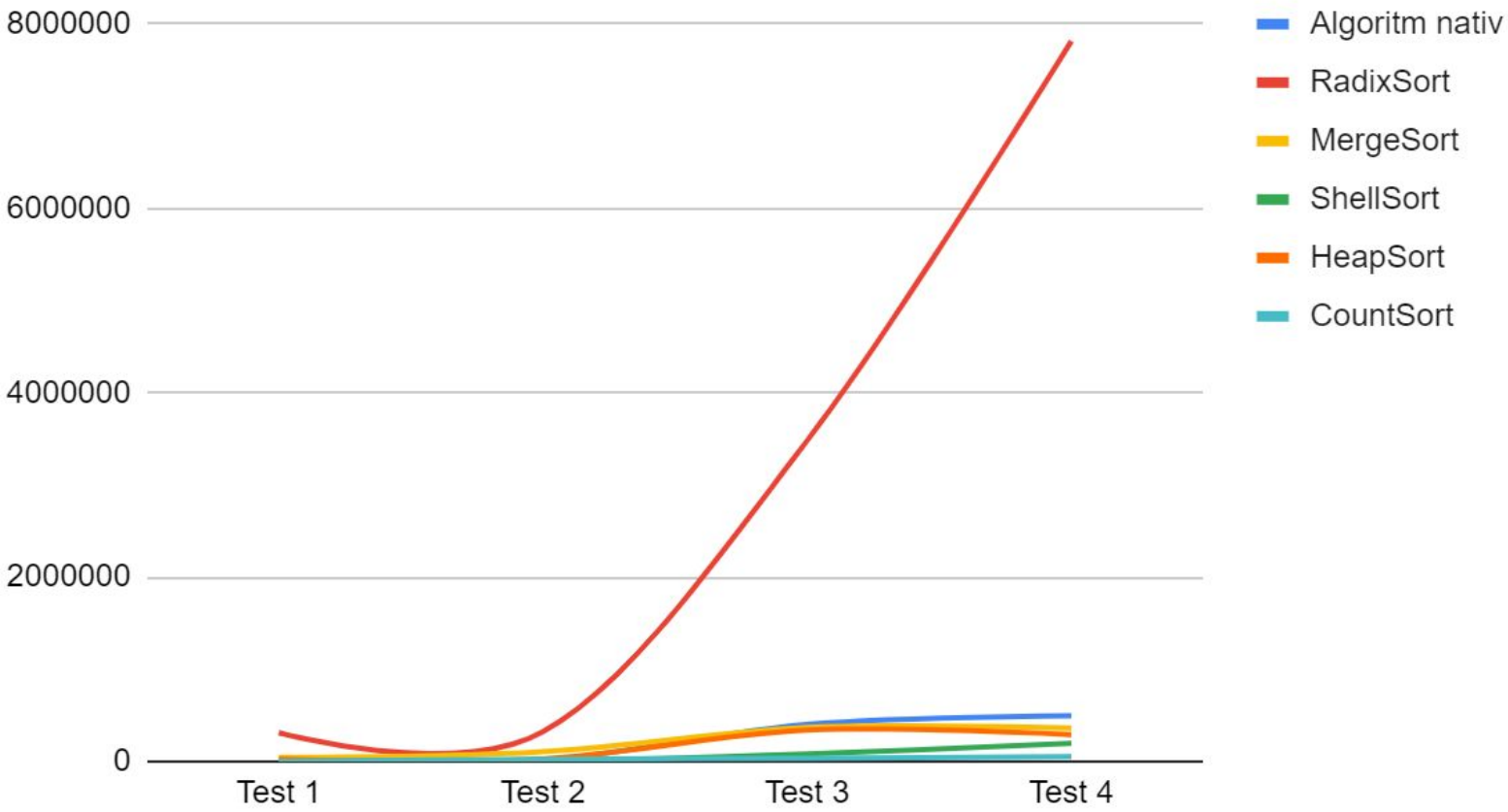


```
TEST 10-------------------------------------------------
numar elemente = 100000000
maxim = 100

Algoritm nativ de sortare timp de executie: 16814425800ns
SORTARE CORECTA

RadixSort timp de executie: 212646873200ns
SORTARE CORECTA

MergeSort nu poate sorta.

ShellSort timp de executie: 16934513400ns
SORTARE CORECTA

HeapSort timp de executie: 69754265100ns
SORTARE CORECTA

CountSort timp de executie: 347747900ns
SORTARE CORECTA
```

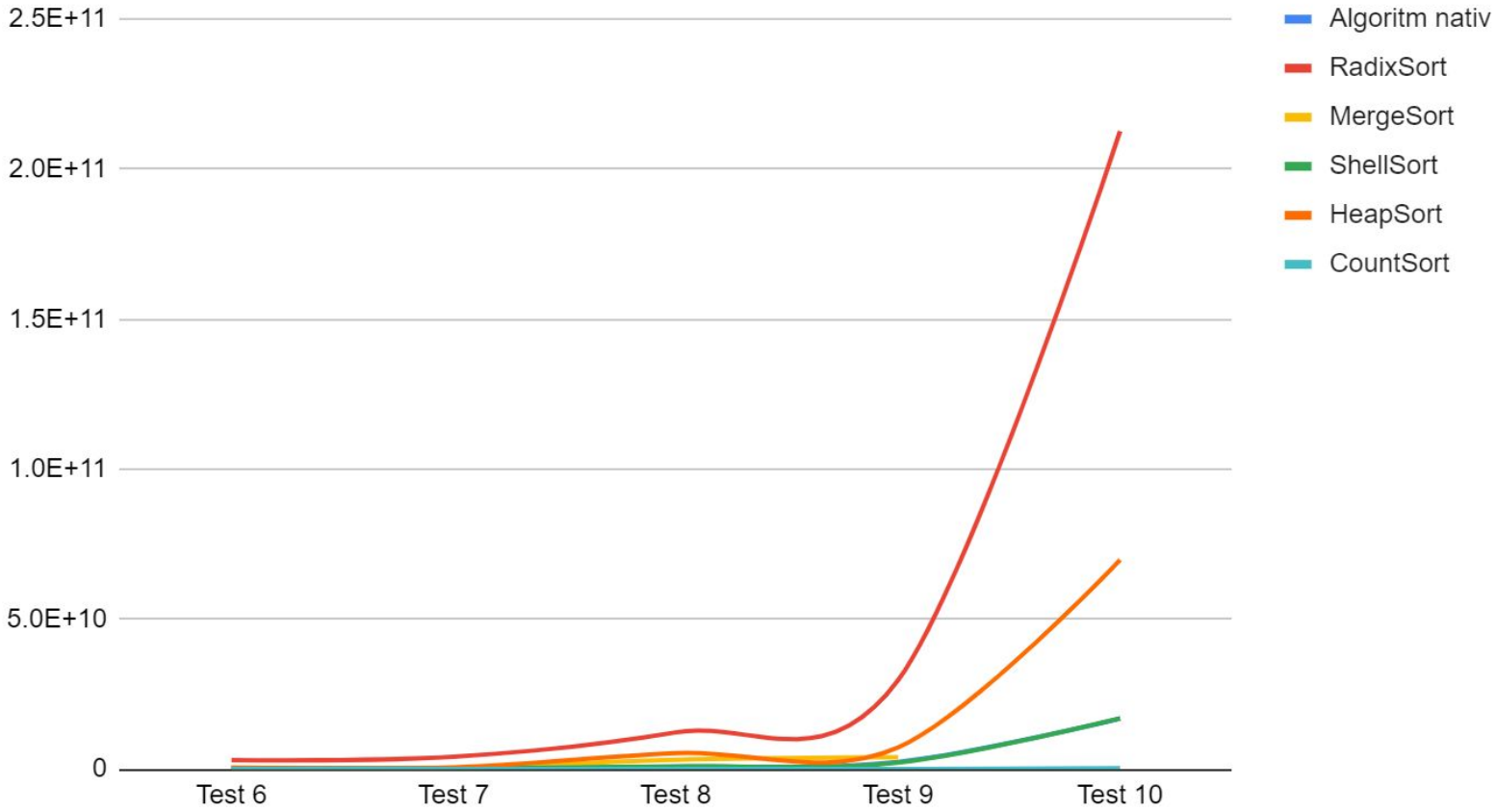
Test 10



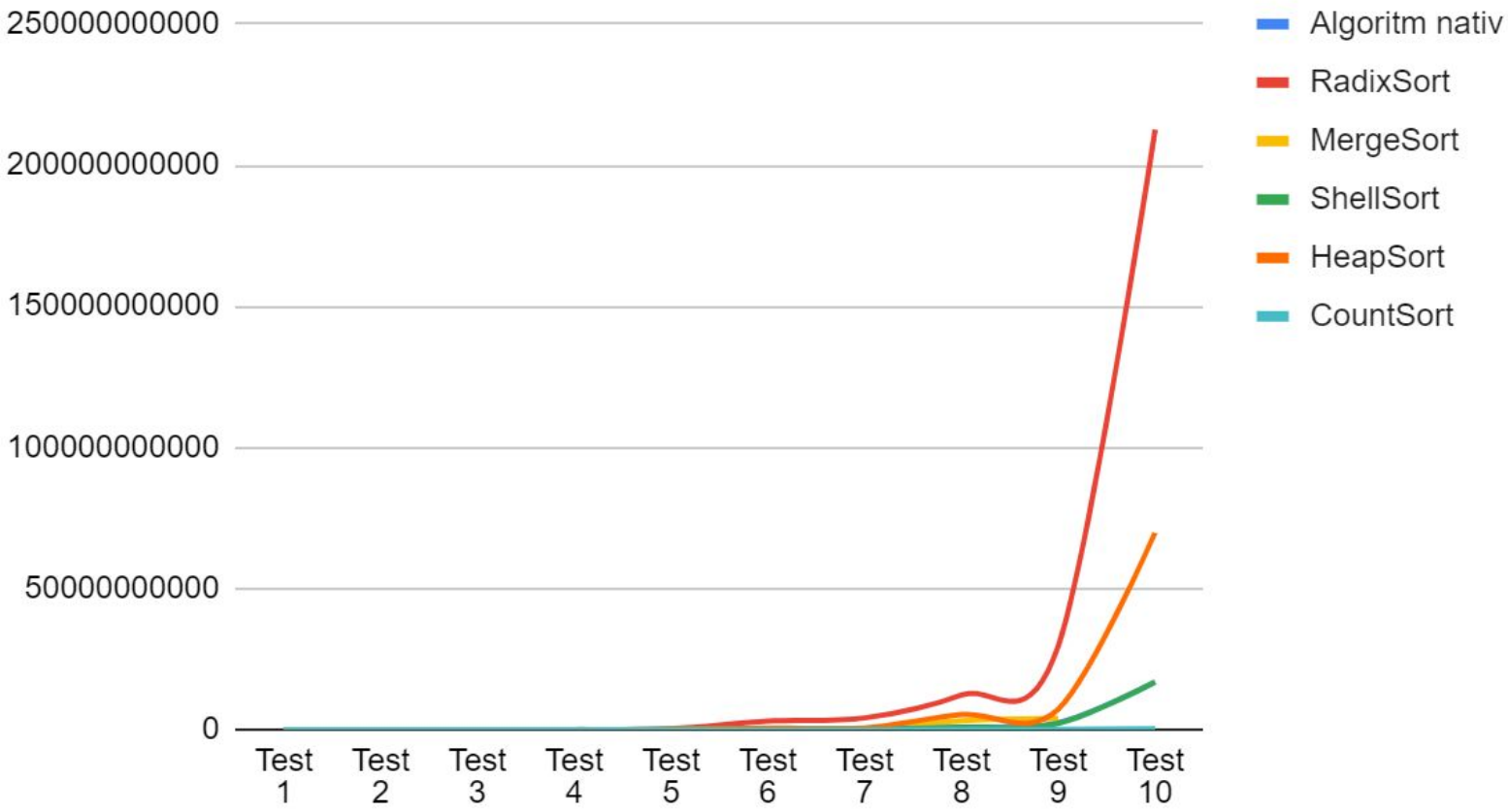
Sortări


8000000
6000000
4000000
2000000
0
Test 1
Test 2
Test 3
Test 4
Algoritm nativ
RadixSort
MergeSort
ShellSort
HeapSort
CountSort

Sortări


2.5E+11
2.0E+11
1.5E+11
1.0E+11
5.0E+10
0
Test 6
Test 7
Test 8
Test 9
Test 10
Algoritm nativ
RadixSort
MergeSort
ShellSort
HeapSort
CountSort

Sortări


250000000000
200000000000
150000000000
100000000000
50000000000
0
Test 1
Test 2
Test 3
Test 4
Test 5
Test 6
Test 7
Test 8
Test 9
Test 10
Algoritm nativ
RadixSort
MergeSort
ShellSort
HeapSort
CountSort