

Sortari Avansate

Binsort / Counting sort

i

a 5 2 1 3 4 0

0 2 1 3 4 5

0 1 2 3 4 5

0 1 2 3 4 5 6

1 3 0 4 6 5 2

5 3 0 4 6 1 2

3 5 0 4 6 1 2

4 5 0 3 6 1 2

0 5 4 3 6 1 2

2 5 4 3 6 1 0

6 5 4 3 2 1 0

distribution checker

a 5 2 1 5 3 5 4 2 0 1 1

d 0 1 2 3 4 5

0	0	0	0	0	0
1	2	4	1	1	1
	2	2			2
	3				3

position → 4 6 7 8

0 2 8

2 5

1

$d[a[i]]++$

0 1 1 1 2 2 0

0	1	2				
0	1	1	1	2	2	

- I Compresses pointer table → freq.
 - II Address directly → stores in table
- original
- $\text{swap}(a[i], a[n-1-a[i]])$

Radix Sort

→ time cost de cifre (+ baza de numeratie)

① Radix cu interschimbare

	4	3	2	1	0
7	0	0	1	1	1
4	0	0	1	0	0
14	0	1	1	1	0
13	0	1	1	0	1
2	0	0	0	1	0
16	1	0	0	0	0
18	1	0	0	1	0
9	0	1	0	0	1

00	111
00	100
01	110
01	01
00	10
01	01
10	10
10	00

↓ partitionare

00	111
00	100
00	010
01	101
01	110
01	001
10	010
10	000

000	10	2
001	00	4
00	111	7
01	001	9
01	110	13
01	101	14
10	010	16
10	000	18

$$\begin{array}{r} 200 \\ 102 \\ 113 \\ 203 \\ 201 \end{array}$$

$$\begin{array}{r} 113 \\ 102 \\ \hline 200 \\ 203 \\ 201 \end{array}$$

$$\begin{array}{r} 102 \\ 113 \\ \hline 200 \\ 203 \\ 201 \end{array}$$

$$\begin{array}{r} 102 \\ 113 \\ \hline 200 \\ 201 \\ 203 \end{array}$$

(2) Radix Sort

$$\begin{array}{r} 200 \\ 102 \\ 113 \\ 203 \\ 201 \end{array}$$

$$\begin{array}{c|c|c|c} d & 0 & 1 & 2 & 3 \\ \hline & 1 & 1 & 1 & 2 \\ \hline \end{array}$$

$$\begin{array}{cccc} 1 & 2 & 3 & 5 \end{array}$$

$$\begin{array}{cccccc} 0 & 1 & 2 & 3 & 4 \\ 200 & 201 & 102 & 113 & 203 \end{array}$$

$$\begin{array}{r} 200 \\ 201 \\ 102 \\ 113 \\ 203 \end{array}$$

$$\begin{array}{c|c|c|c|c} d & 0 & 1 & 2 & 3 \\ \hline & 4 & 1 & & \\ \hline \end{array}$$

$$\begin{array}{cccc} 4 & 5 & 5 & 5 \end{array}$$

$$\begin{array}{cccccc} 0 & 1 & 2 & 3 & 4 \\ 200 & 201 & 102 & 203 & 113 \end{array}$$

$$\begin{array}{r} 200 \\ 201 \\ 102 \\ 203 \\ 113 \end{array}$$

$$\begin{array}{c|c|c|c|c} d & 0 & 1 & 2 & 3 & 4 \\ \hline & 2 & 3 & & \\ \hline \end{array}$$

$$\begin{array}{cccc} 0 & 2 & 5 & 5 & 5 \end{array}$$

→ grupuri de biți: $d_1 \rightarrow sf$

	0	1	2	3
index	00	01	10	11
val	2	2	3	1
	2	4	7	8

7	000111
4	000100
14	001110
13	001101
2	000010
16	010000
18	010010
9	001001

"100 de femei nu valorează cât un testicul"

1

200000 EUR

Confucius

→ val. femei < 2000 EUR
hoeflation