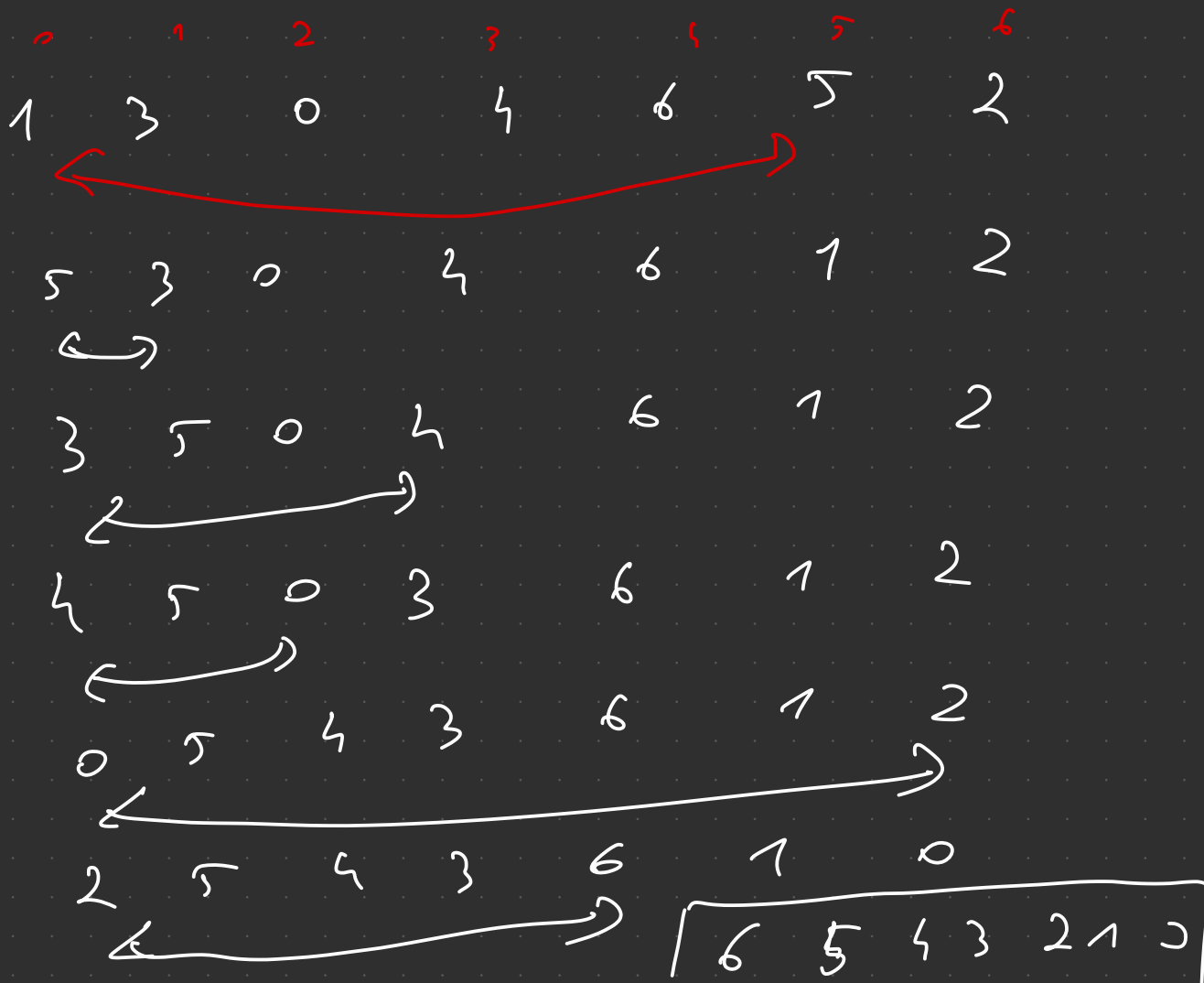
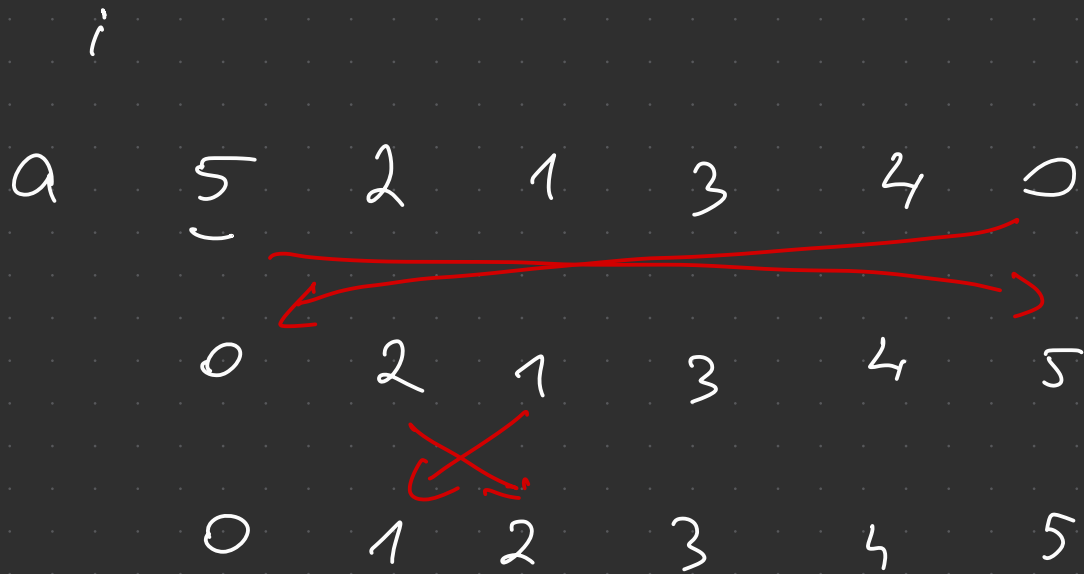


# Sortari Avansate

## Binsort / Counting sort



# distribution checker

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

d      0      1      2      3      4      5

<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>
1	2	4	1	1	1
	<del>2</del>	2			<del>2</del>
	3				3

position → 4      5      6      7      8

0      1      2      3      4

$d[a[i]]++$

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

2  
4  
7  
9  
13  
14  
16  
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  
hoefflation