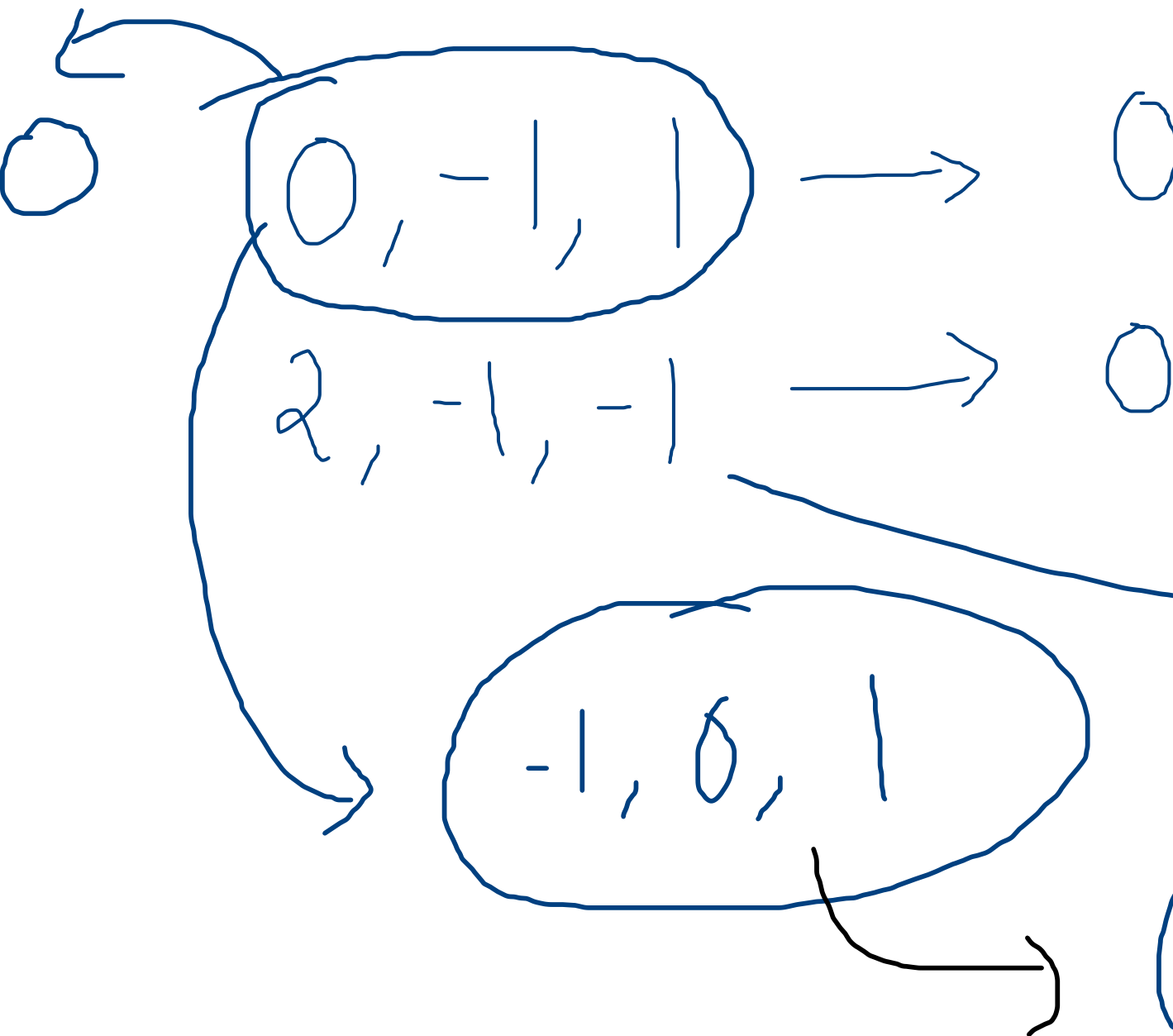


$[-1, 0, 1, 2, -1, -4]$

sorting

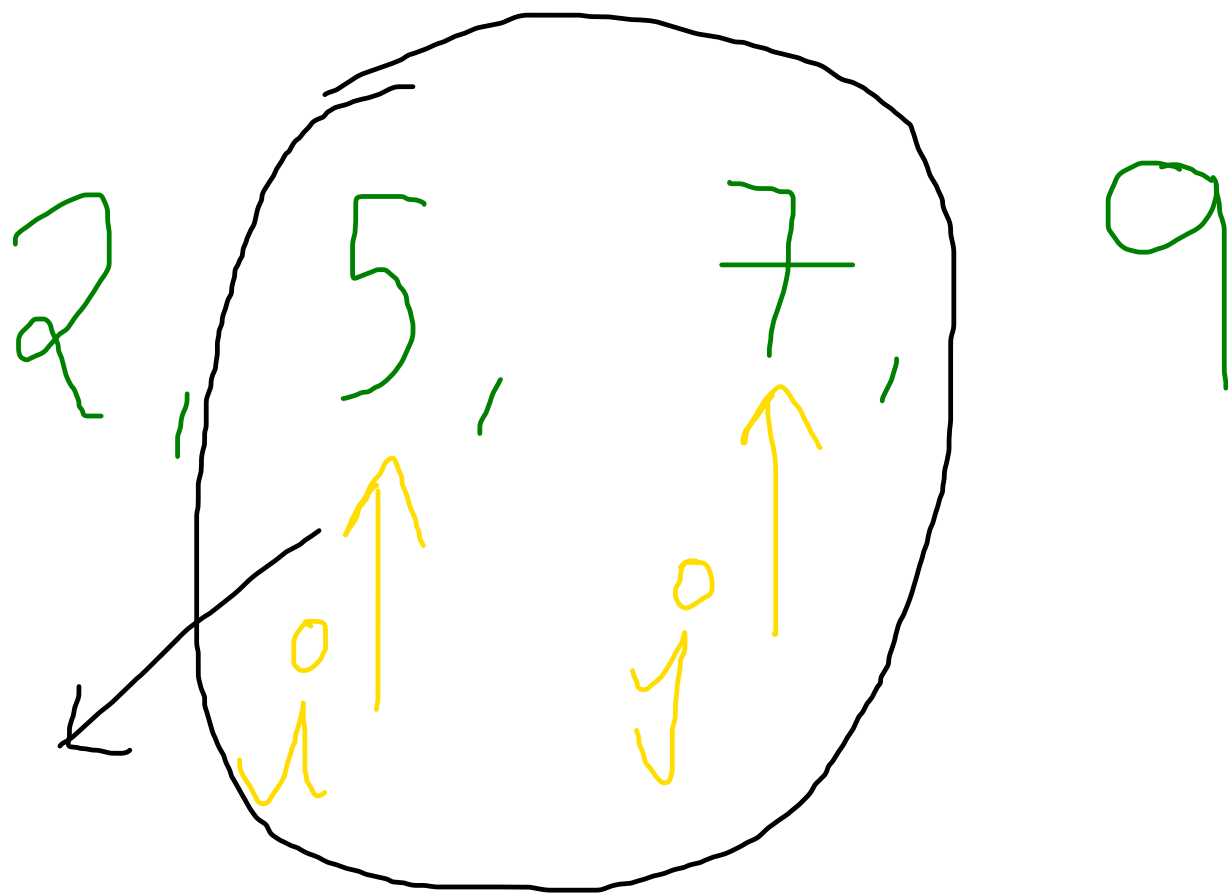
$[-4, -1, -1, 0, 1, 2]$



numbers

order
change

Sorted
array

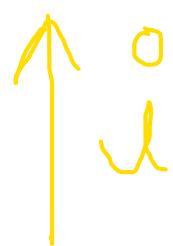
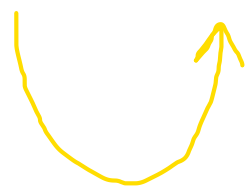


12

14 > 12



-4, -1, -1, 0, 1, 2



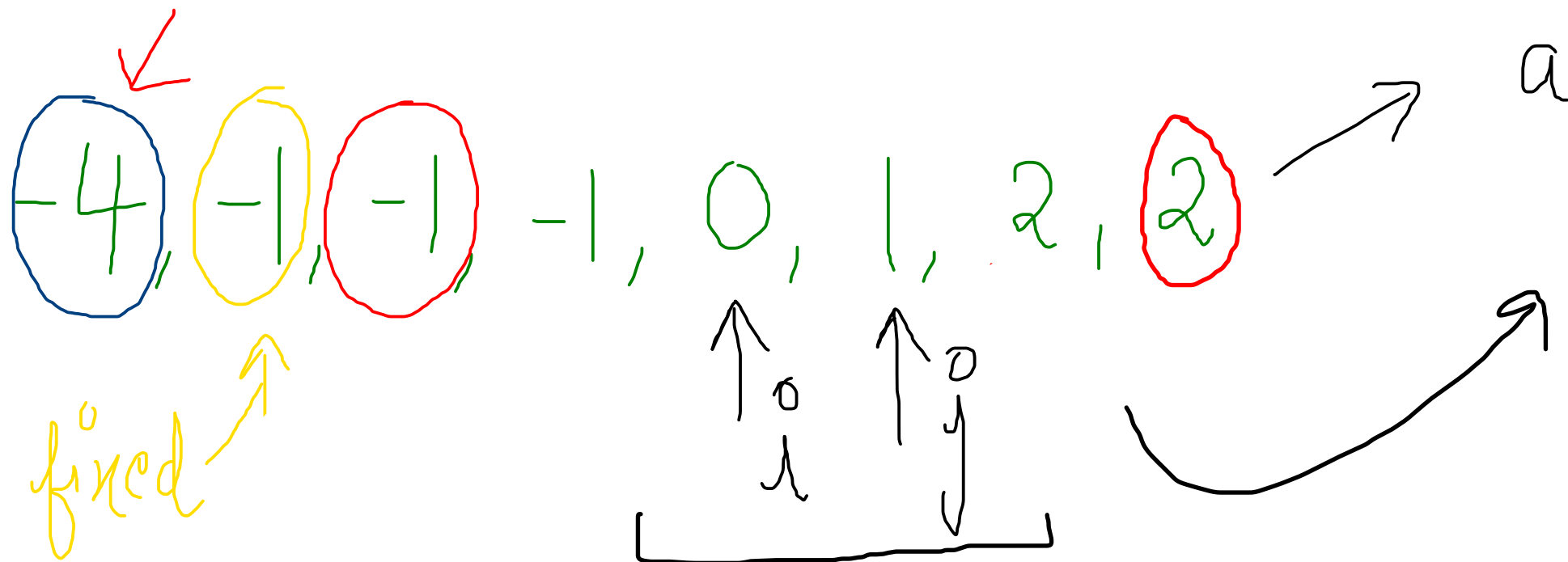
$$a + b + c = 0$$



✓ $-4 + (a + b) \rightarrow +4$

$-1 + (a + b) \rightarrow +1$

0

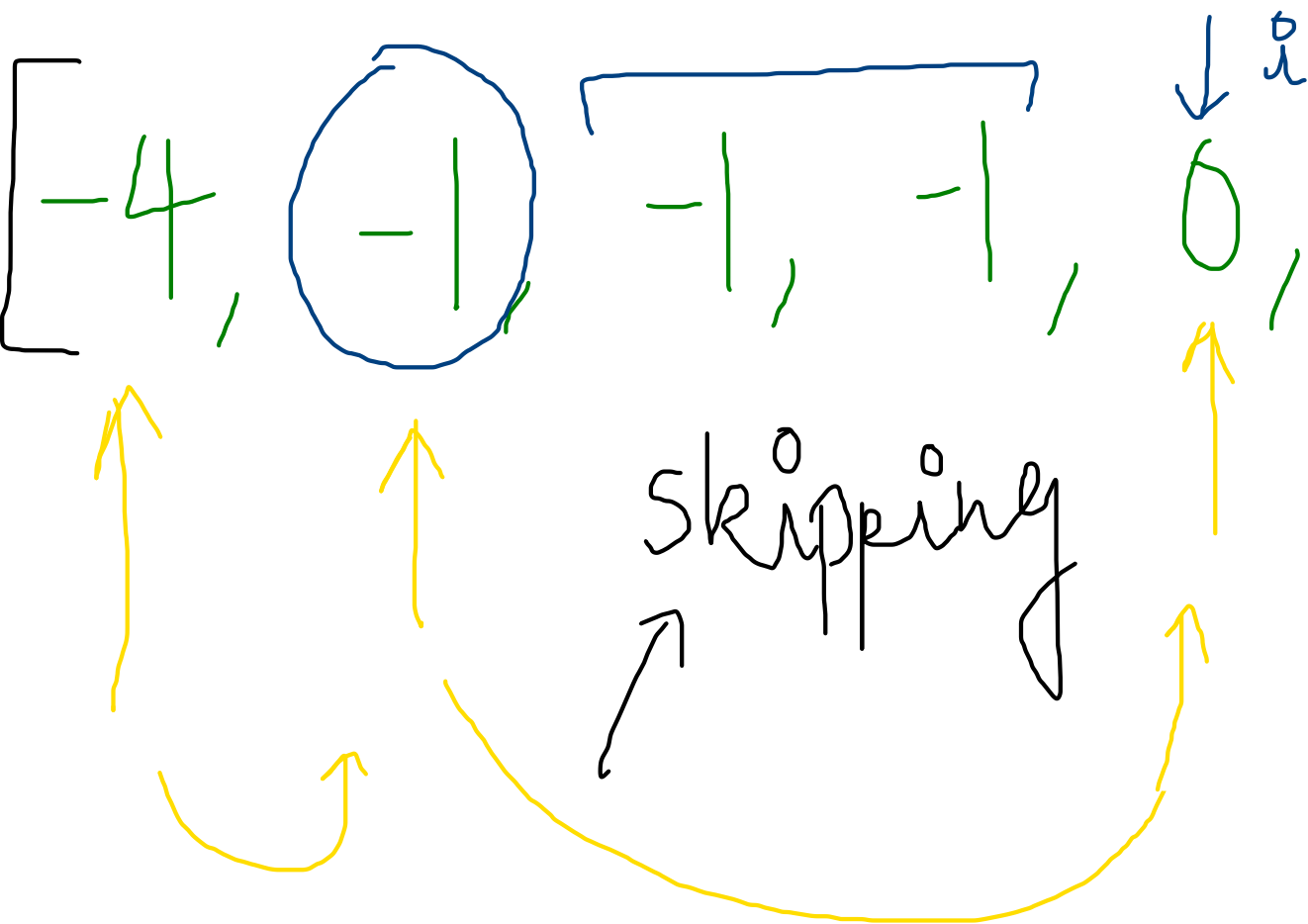


$-4, 2, 2$

$-1, -1, 2$

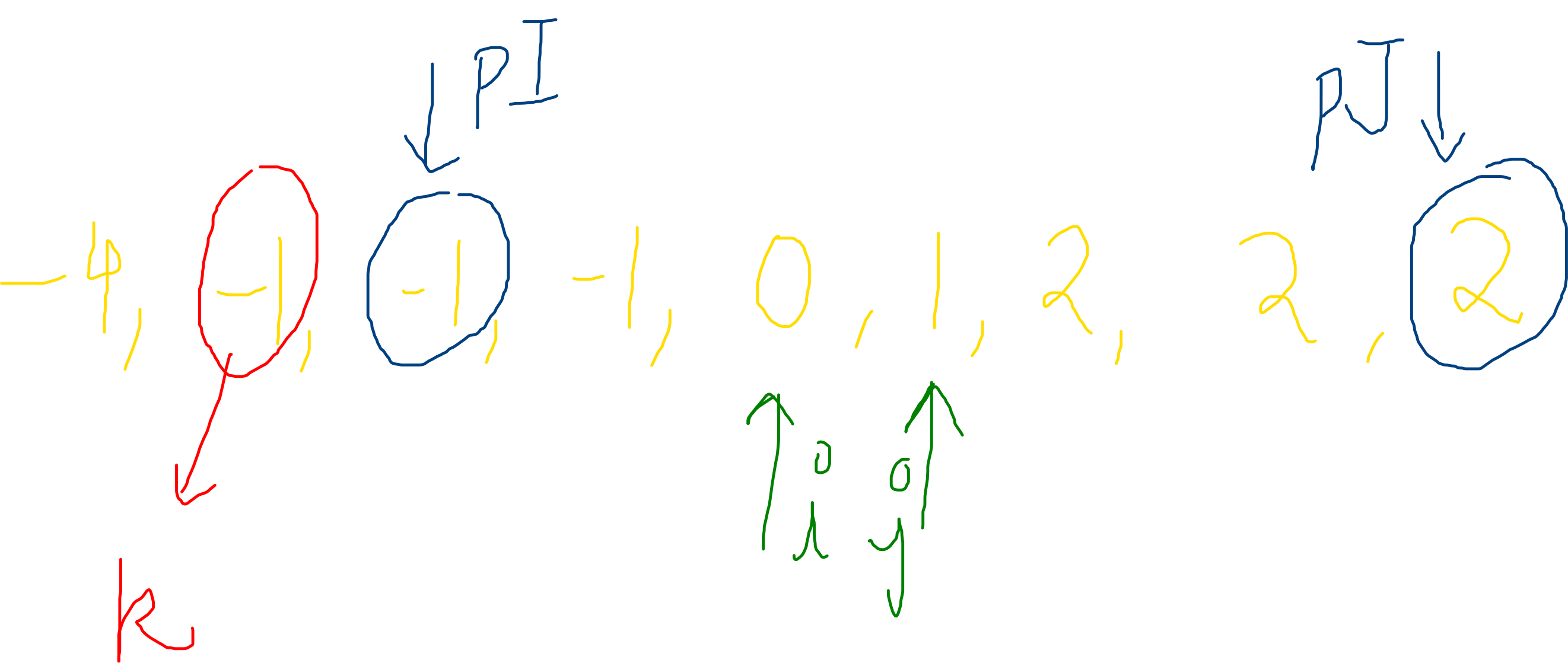
$-1, -1, 2$

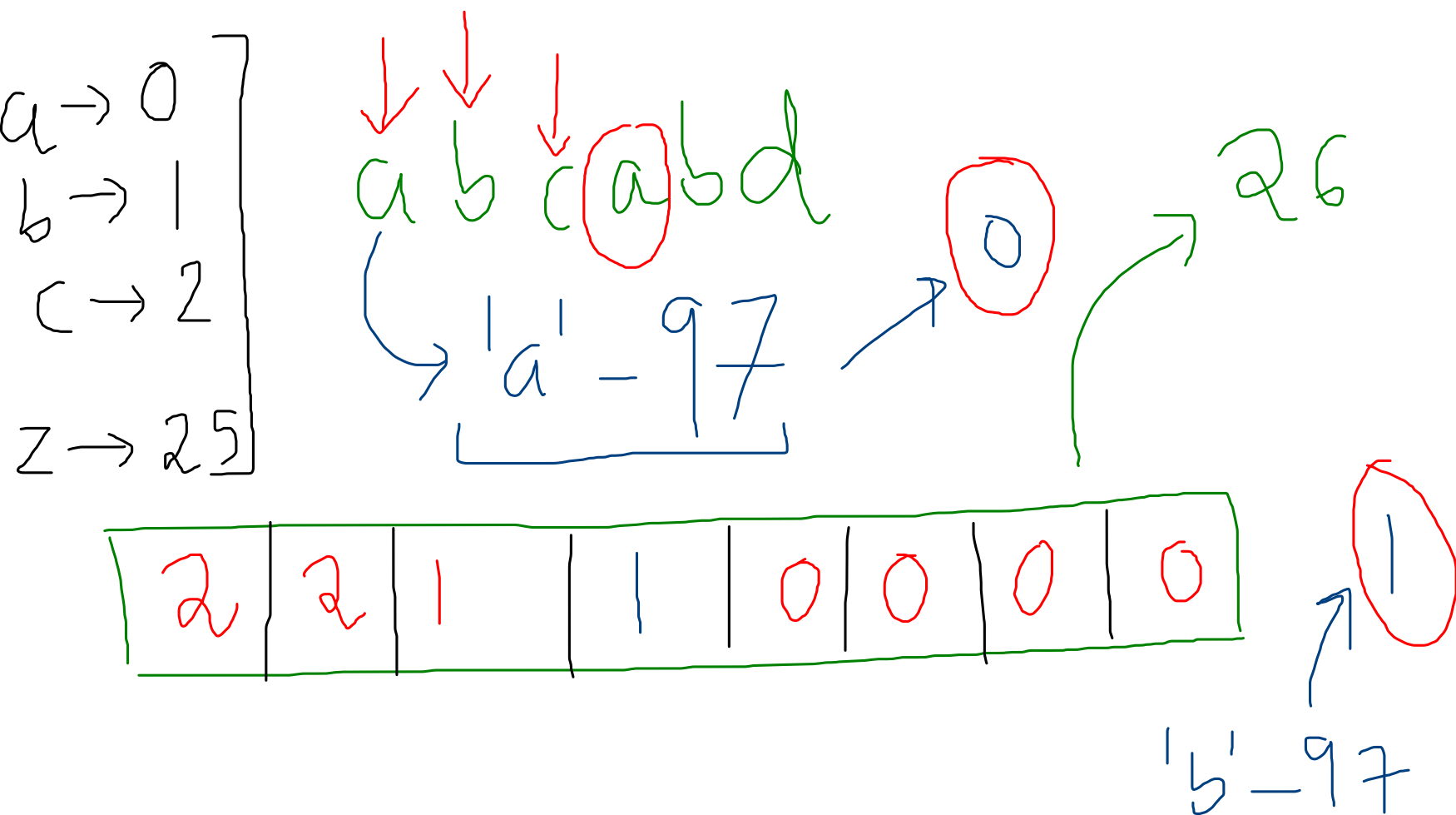
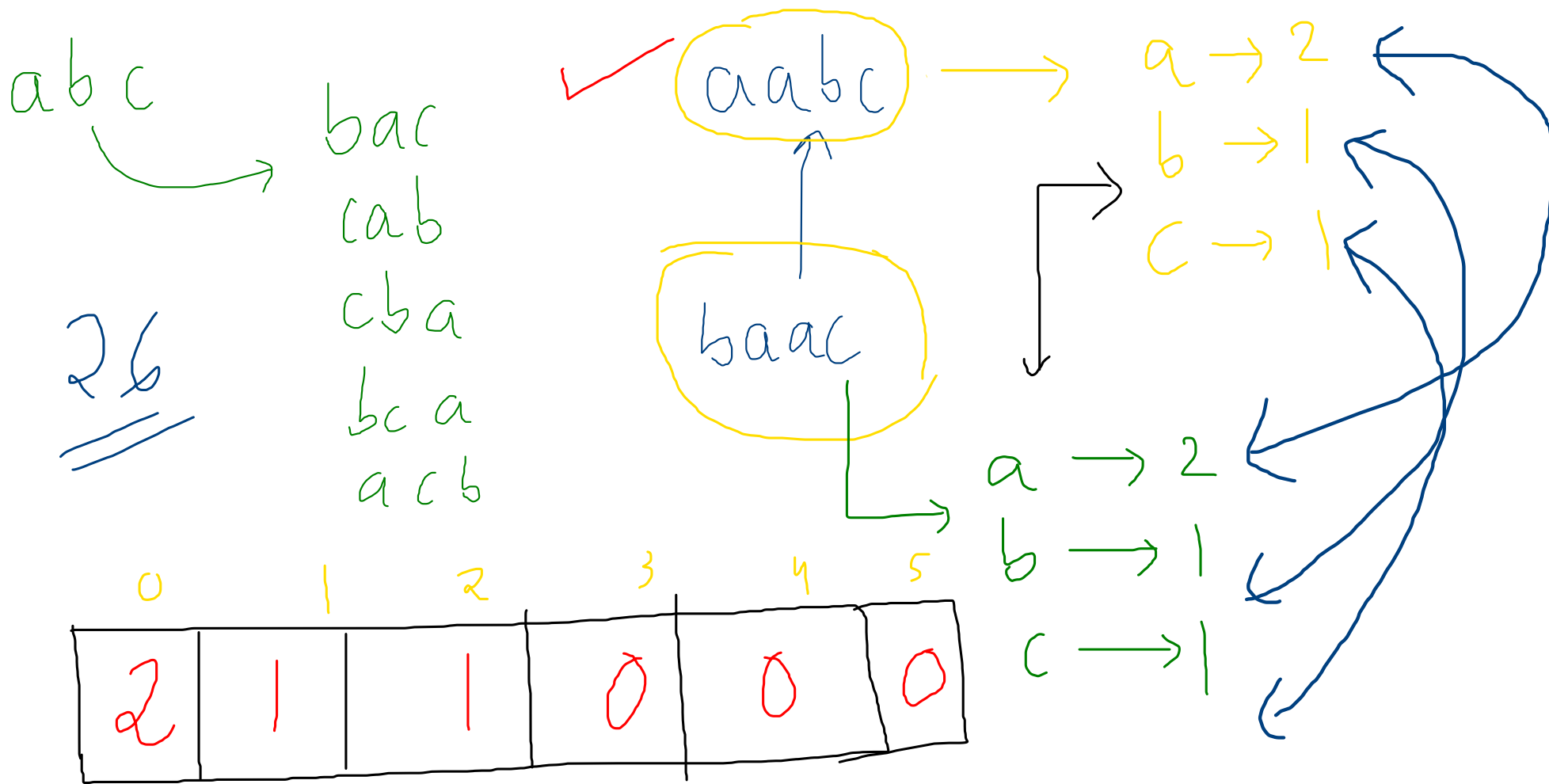
$$-1 + \underbrace{a[i] + a[j]}_{\rightarrow 1}$$

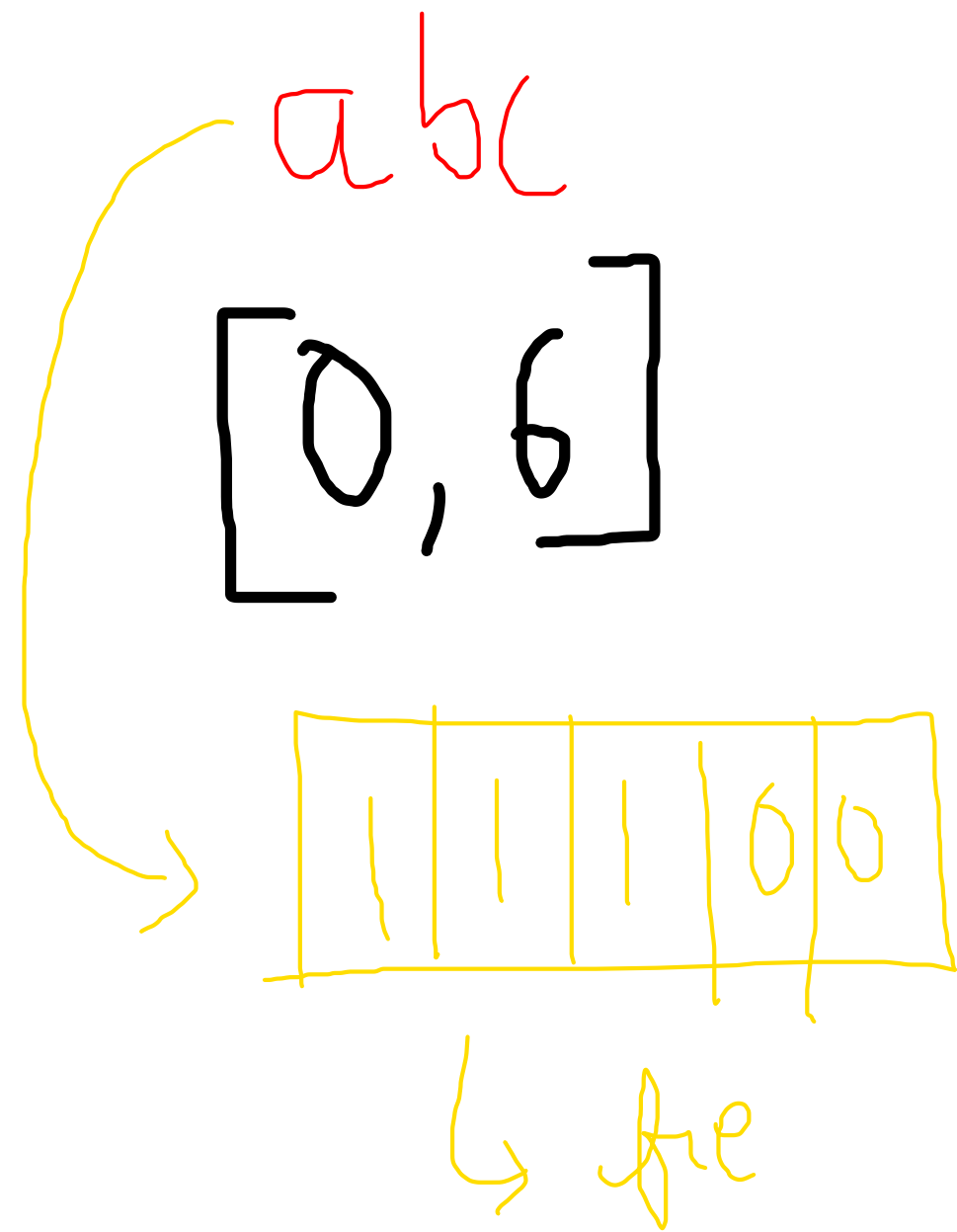
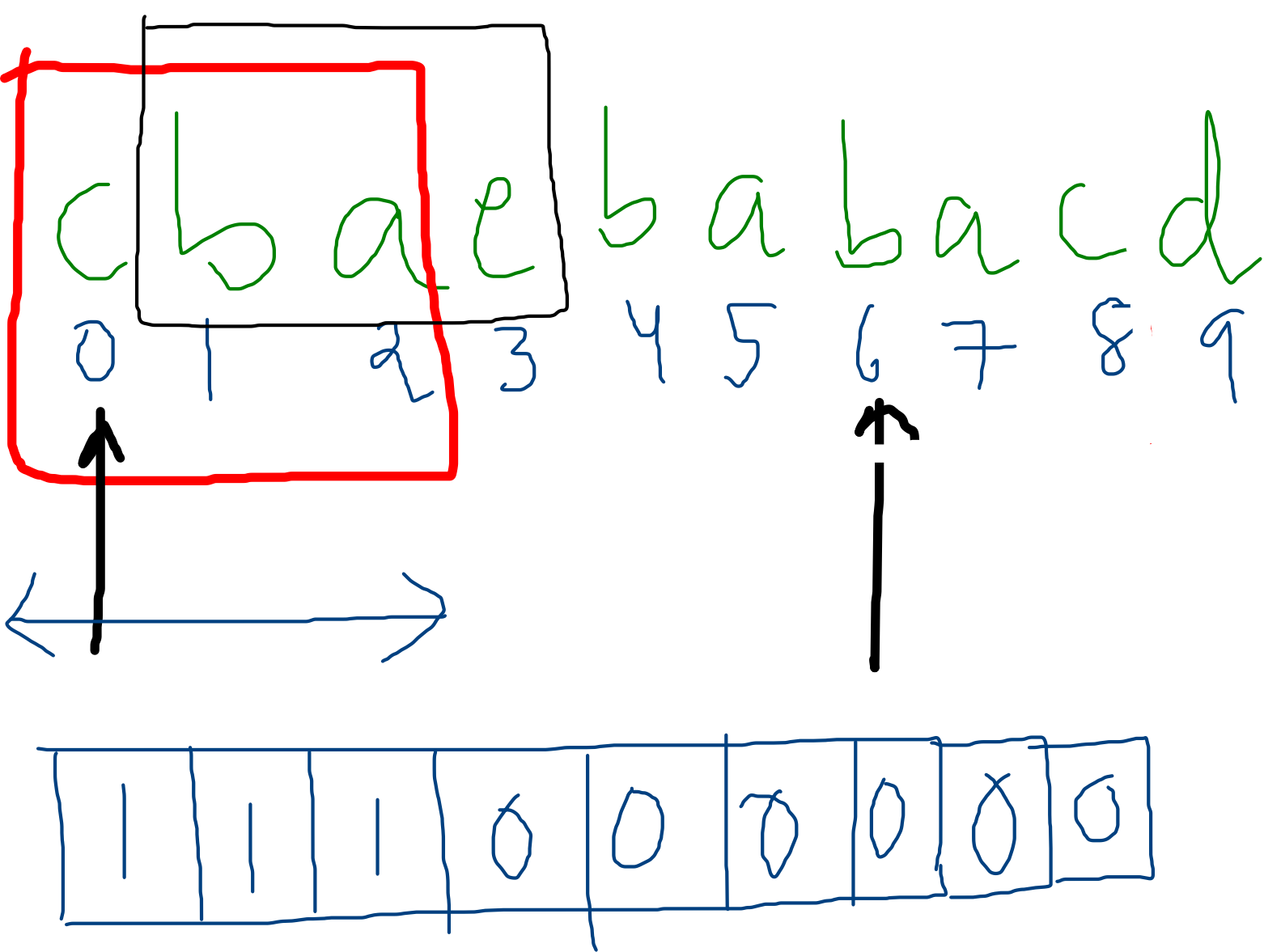


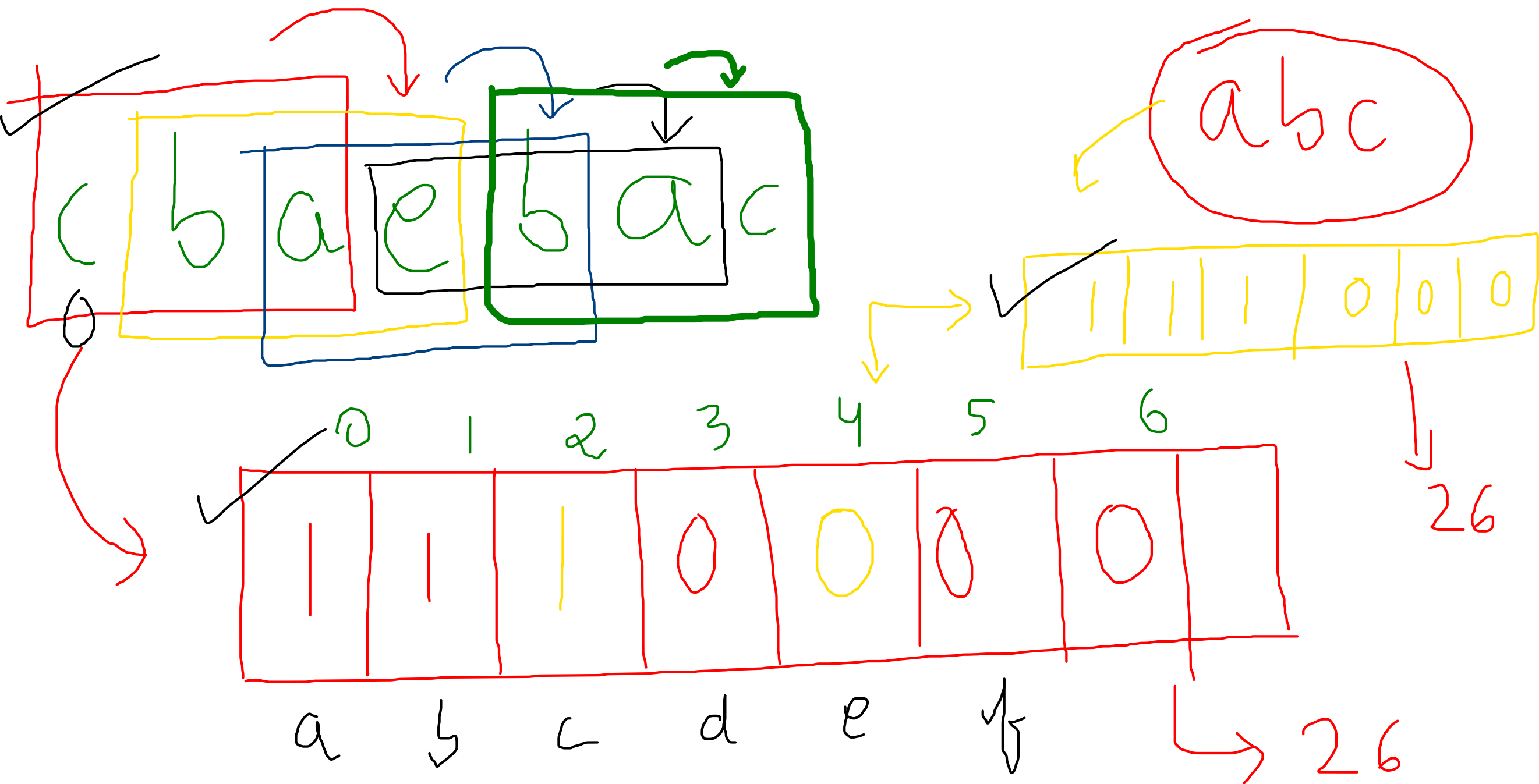
$1, 2, 2]$ $\nearrow a$

```
int prev = -1;
while (a[i] == prev)
{
    i++;
}
```









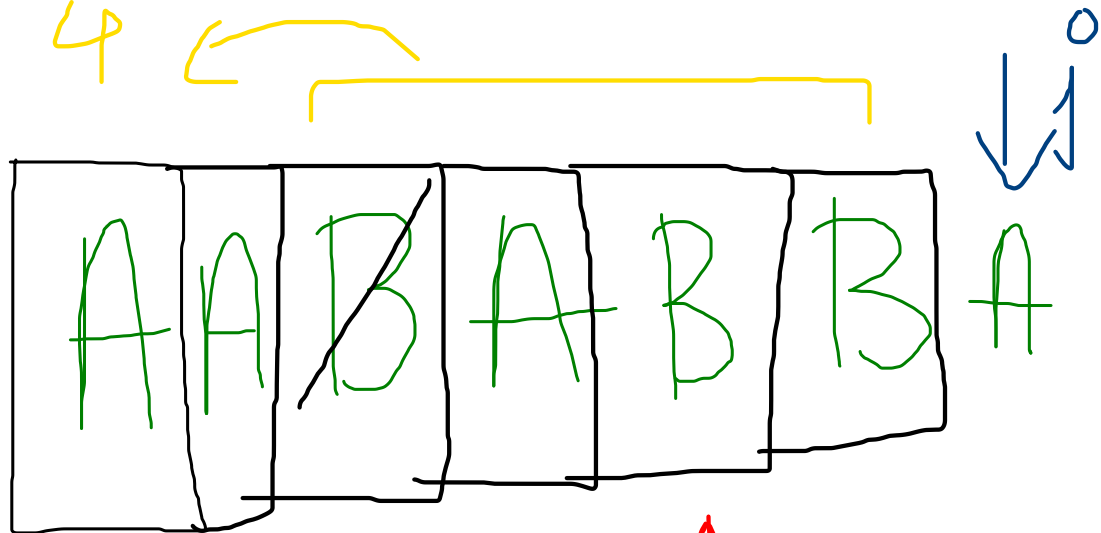
↓ ↓
a b a b a
a-3
b-2

3	2	0	0	0	0
0	1	2	3		

a - 'a'

↳ 26

$R=1$



A → 1

B → 2

4

3

i → ending, inc

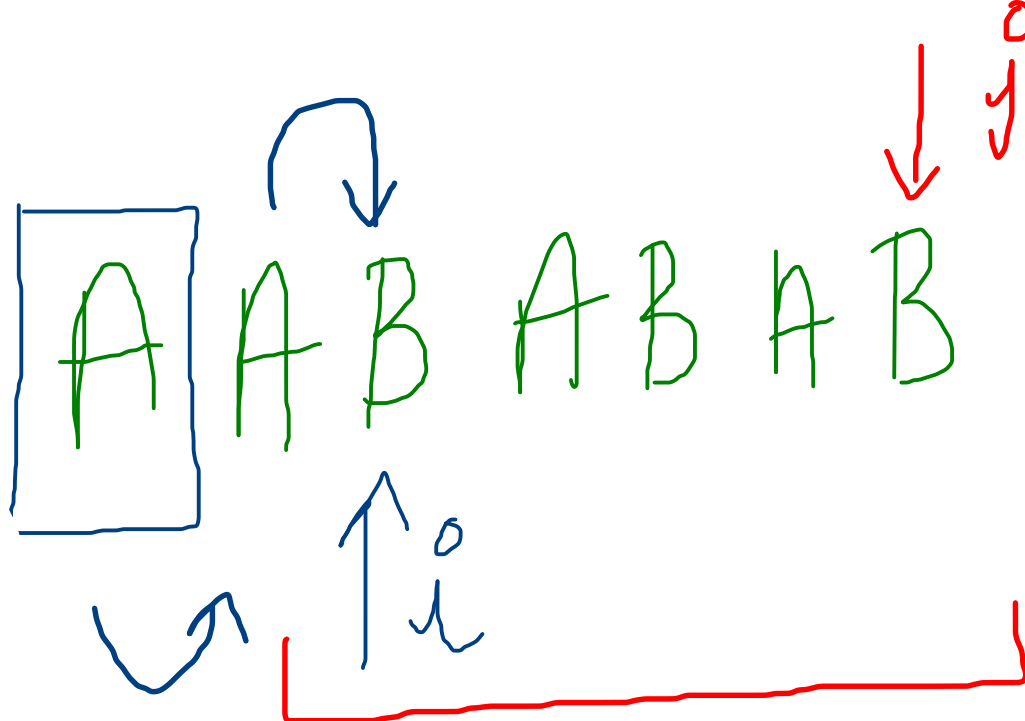
i → starting, dec

current → 3

longest → 4

A → 2

B → 3



$k = 2$



i → starting

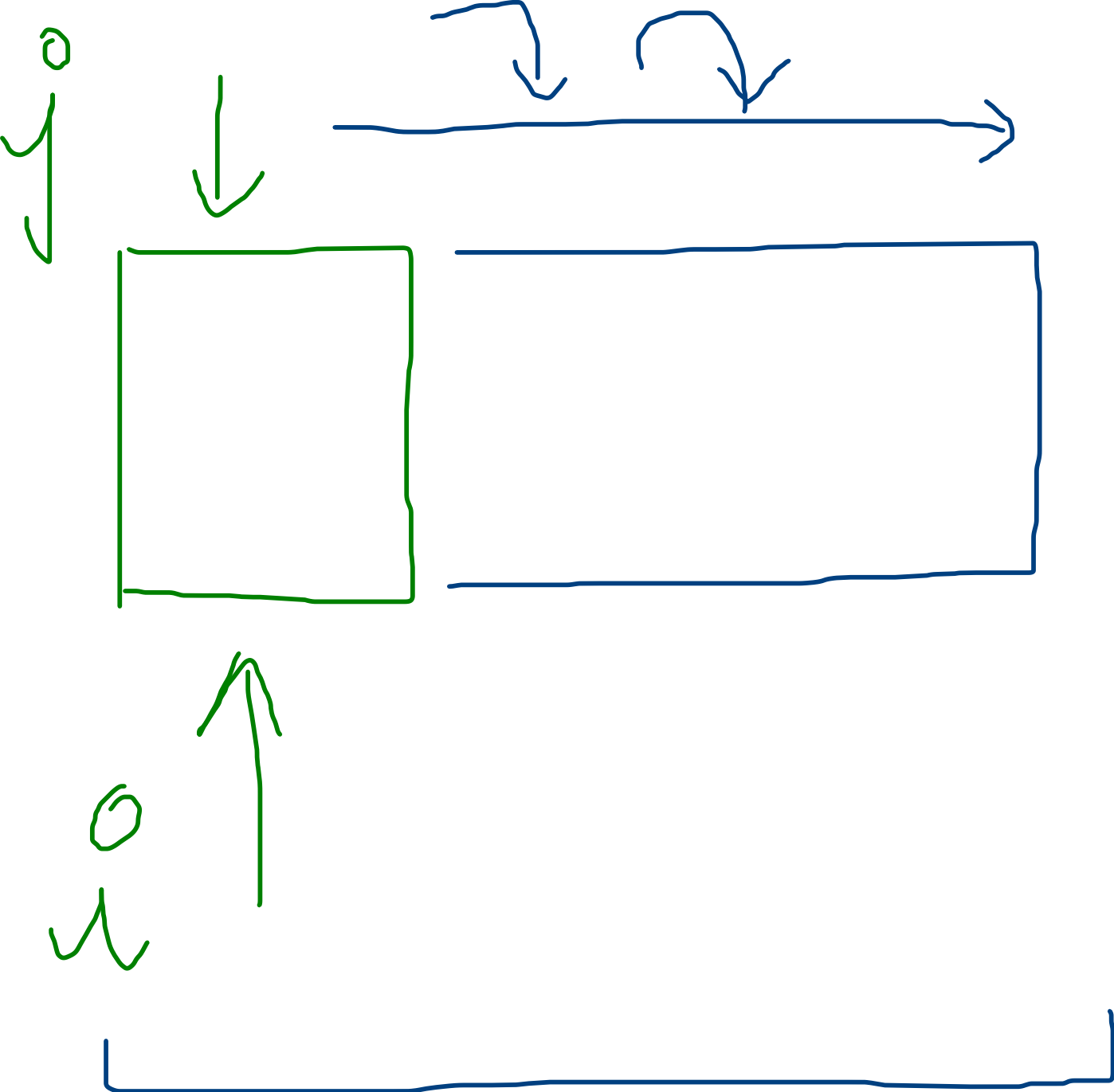
j → ending

5

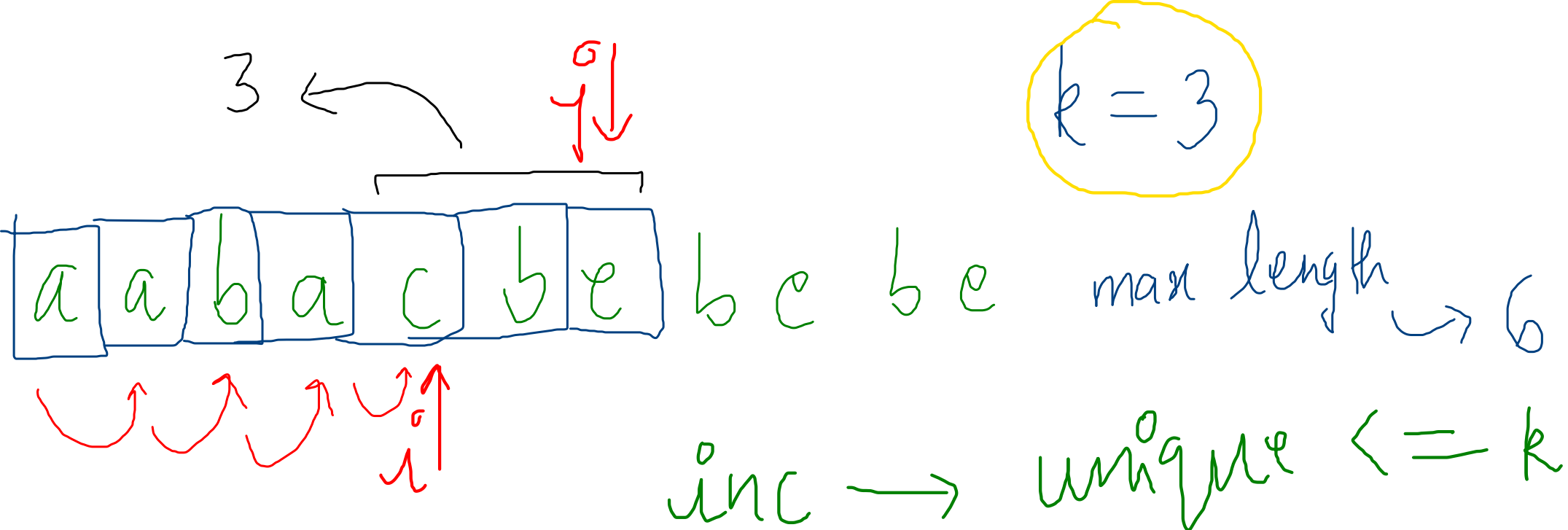
current → $j - i + 1$ → 6

max window →

~~6~~
6



→ correct window



i \rightarrow starting point of window, Used for decreasing the window size
 j \rightarrow ending point of window, Used for increasing the window size

Length of current window - $(j - i + 1)$
 Out of all length we find the maximum

5, 2, 6, 7, 4

42 - 8

└──────────┘

↓

34

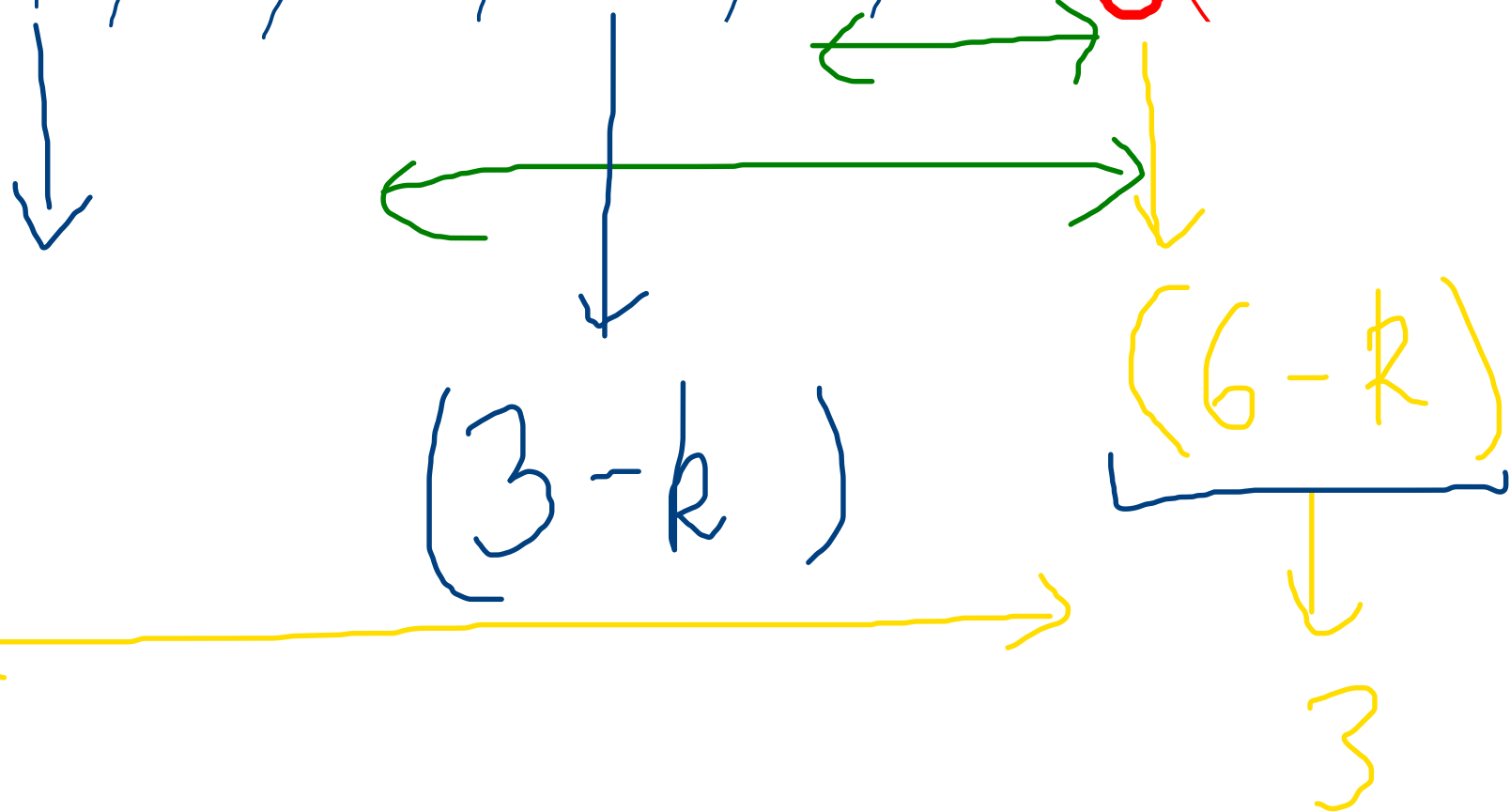
$$\underbrace{a * b}_{7 * 6} - \underbrace{c * d}_{2 * 4}$$

7 * 6

2 * 4

1, 2, 3, -3, 1, 1, 1, 4, 2, -3

1, 3, 6, 3, 4, 5, 6, 10, 12, 9



$k=3$

1 \rightarrow 1
3 \rightarrow 2
0 \rightarrow 1

1, 2, 3, -3, 1

1, 1, 4, 2



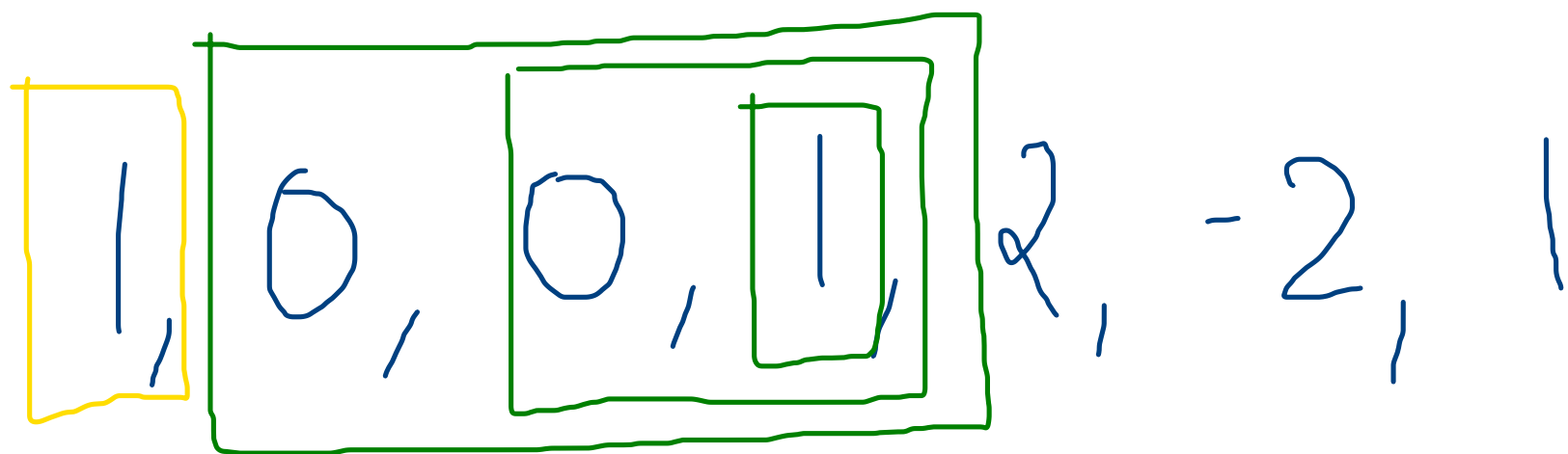
$i+1 \text{ --- } j$

$\hookrightarrow \text{prefix}[i]$

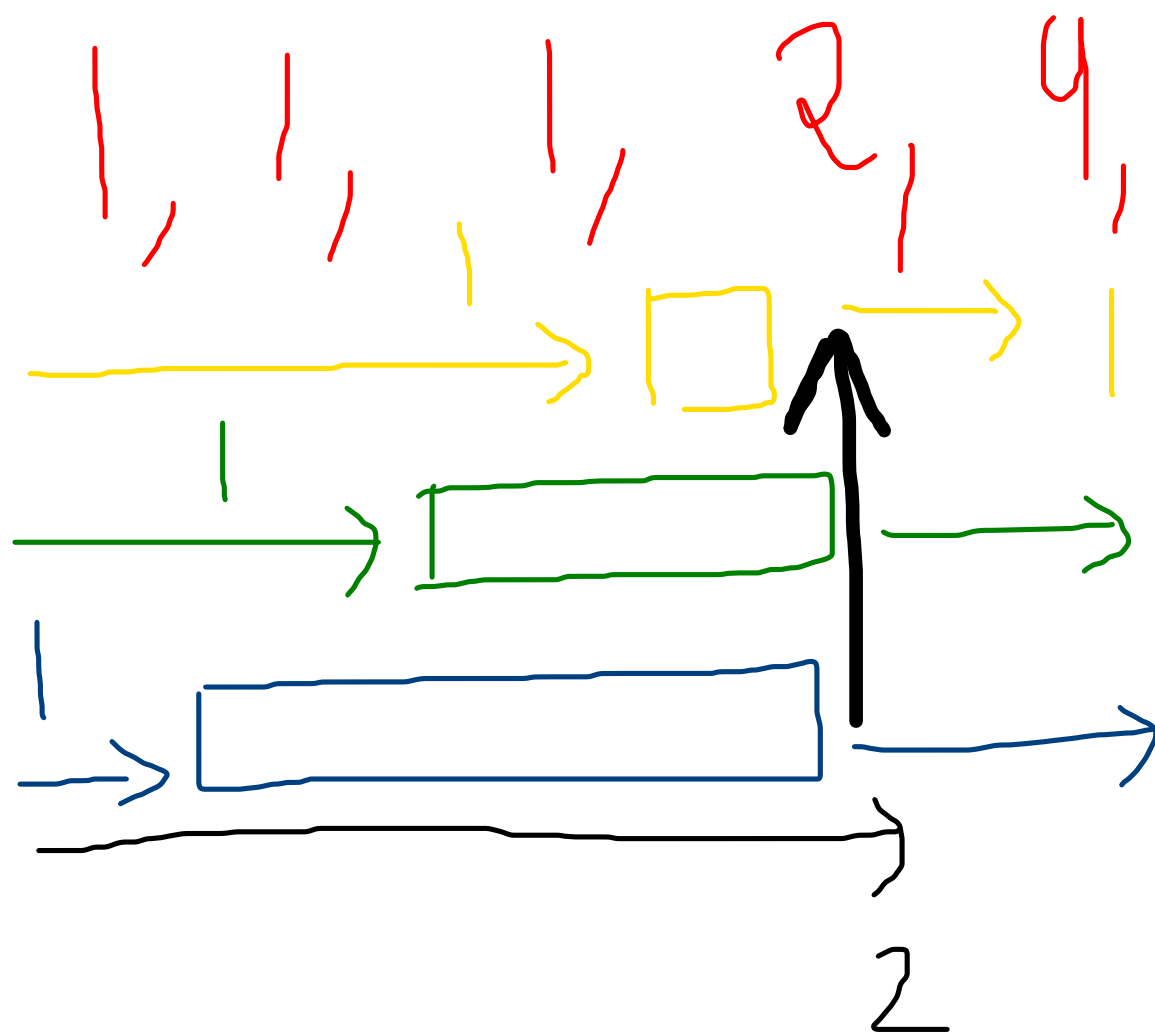
$\text{prefix}[i]$

$P[i] - P[j]$





$$\underline{\underline{k=1}}$$



Frequency

8, 1, 2, 2, 3

1, 2, 2, 3, 8
↓ ↓ ↓ ↓ ↓
0 1 1 3 4

4, 0, 1, 1, 3

frequency

0	1	2	1	0	0	0	0	1
---	---	---	---	---	---	---	---	---

0 1 2 3 4 5 6 7 8

0 1 3 4 4 4 4 4 5

prefix

1, 1, 1, 3, 4 \rightarrow 0, 0, 0, 3, 4 $O(N)$

0	1	2	3	4
0	3	0	1	1

0 3 3 4 5
3

value \rightarrow
 $P[\text{value} - 1]$

$\left\{ \begin{array}{l} 1 \rightarrow P[0] \\ 3 \rightarrow P[2] \\ 4 \rightarrow P[3] \end{array} \right.$