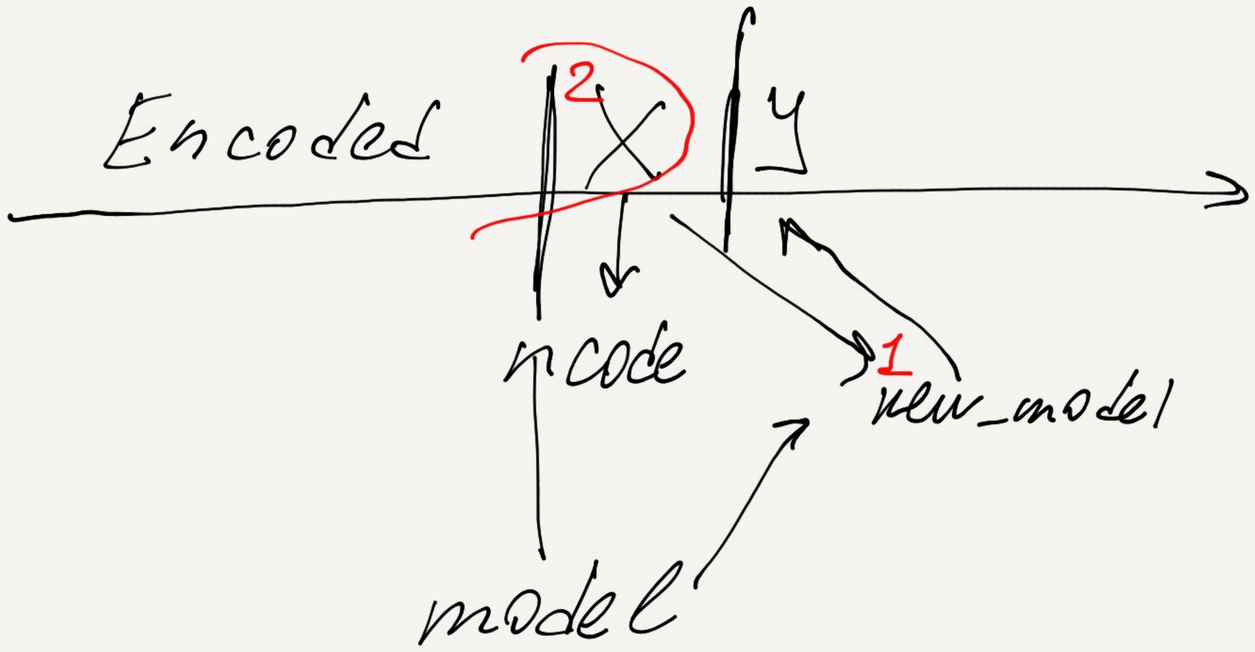
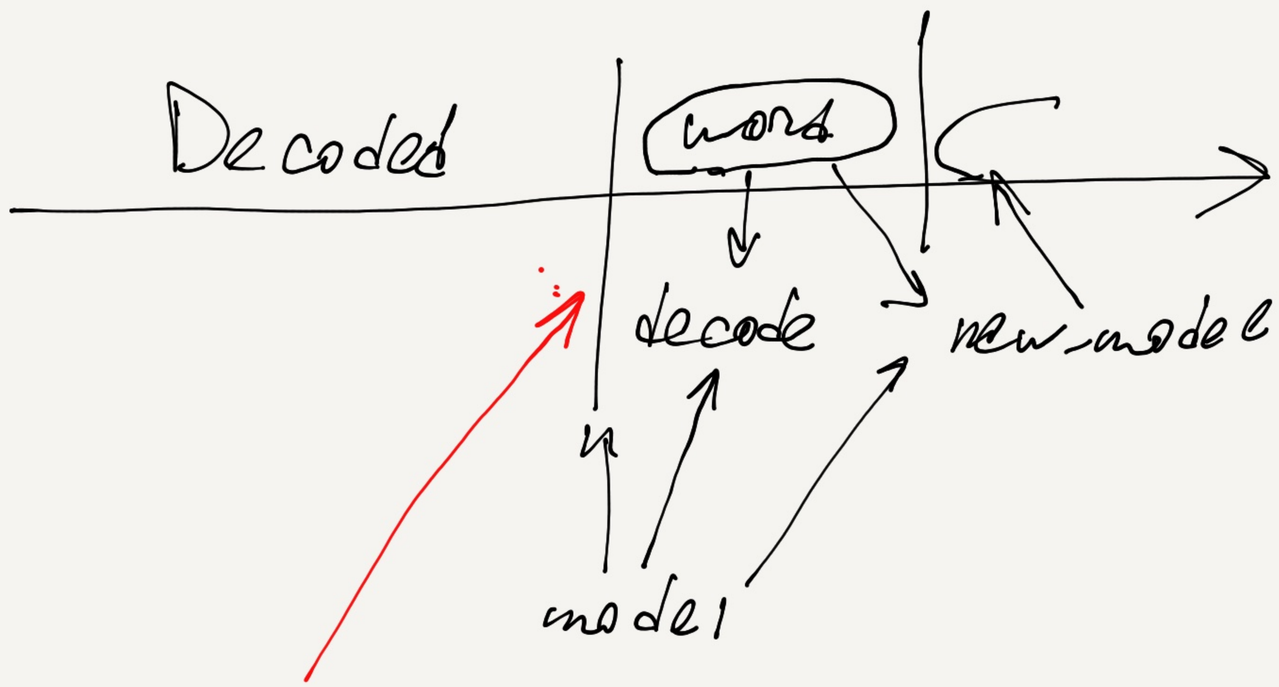
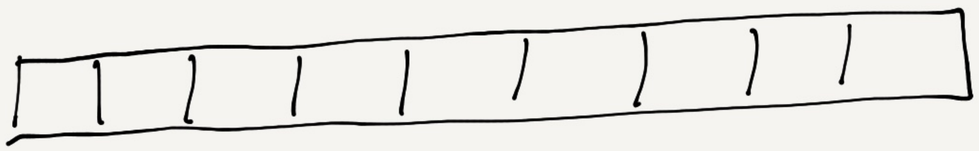


Azfificial
ART

ART_A1 | ART_A2





$\forall i : \quad a_i \geq a_{i+1}$

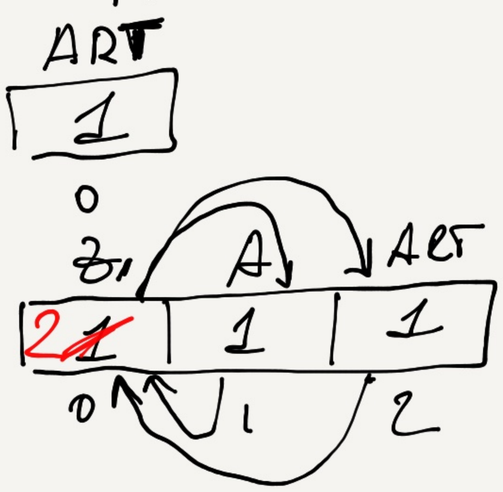
a_{2i+1}, a_{2i+2} — братья.

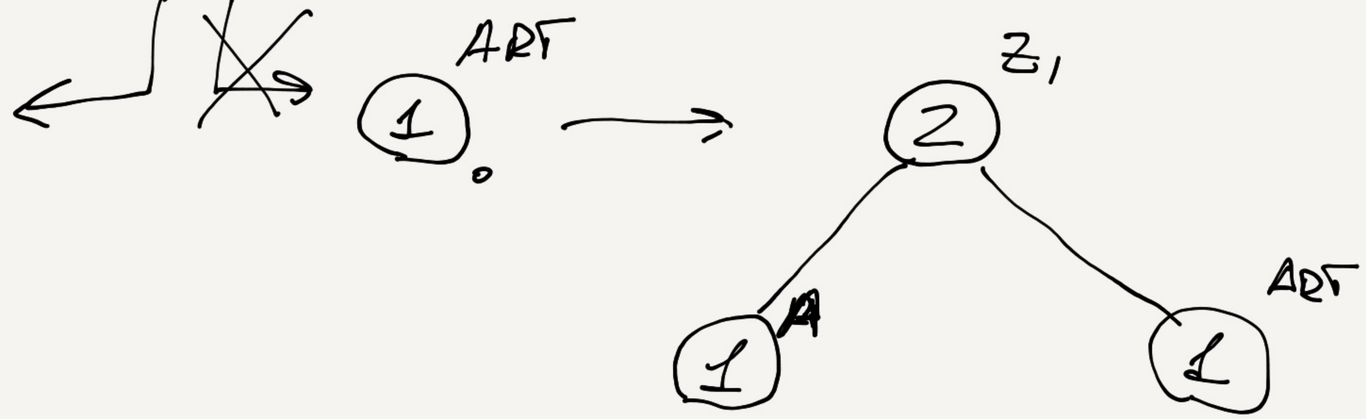
АРТ, А, АРТ, 5, АРТ, Р, А

А, 1, 5, 01, Р, 01.

АБРАКАДАБРА

$A_{1,1}$

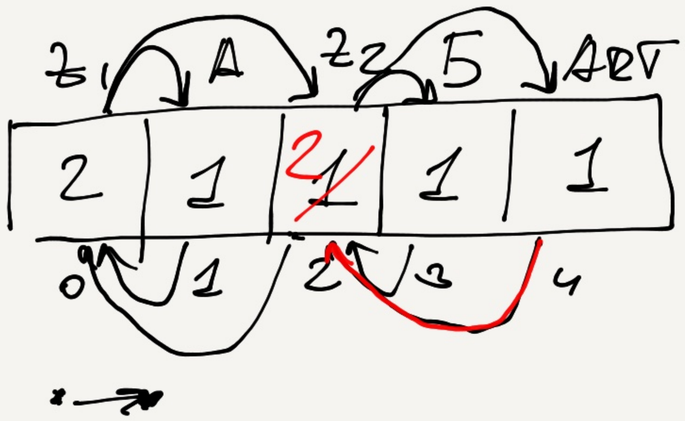


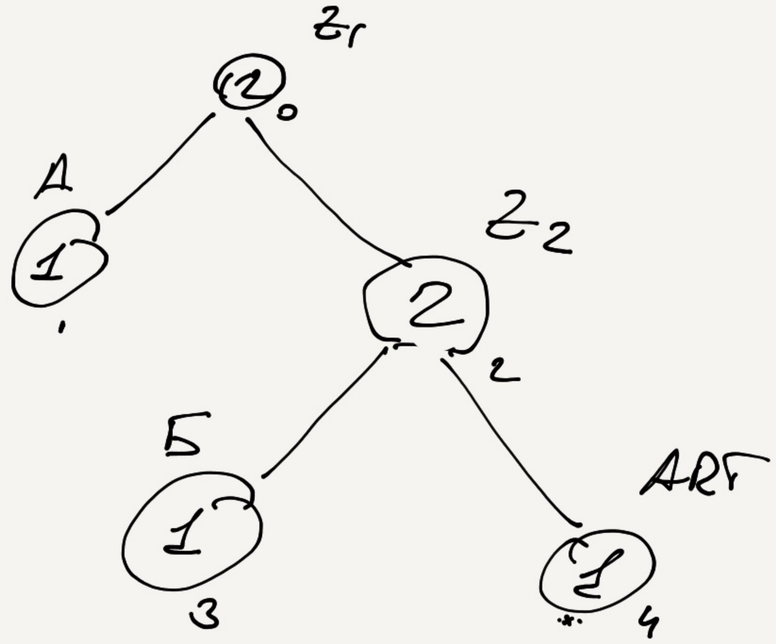


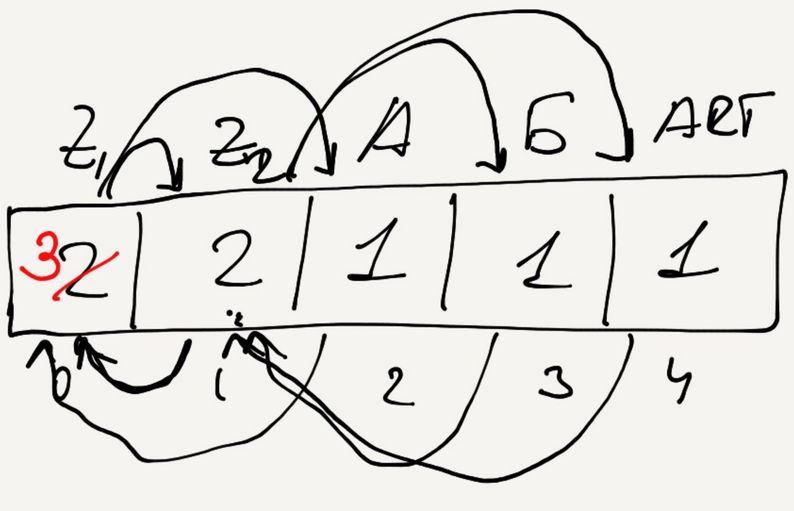
index % 2 == 0 → 1 ...

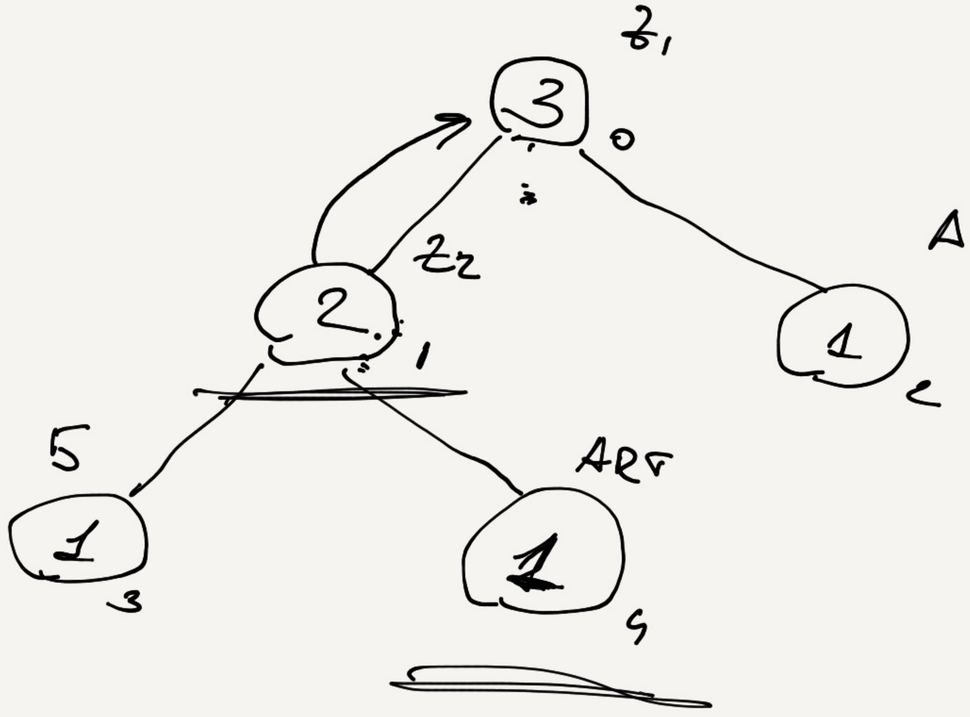
== 1 → 0

~~index~~

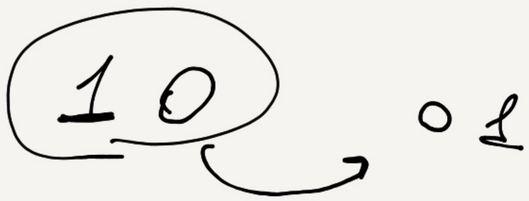

z1
A
z2
5
ART
2
1
2
1
1
0
1
2
3
4


z1
2
0
A
1
1
z2
2
2
5
1
3
ART
1
4

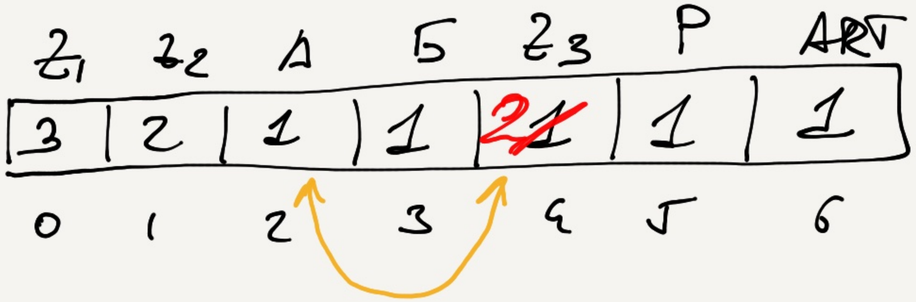

z1
z2
A
5
ART
3
2
2
1
1
1
0
1
2
3
4

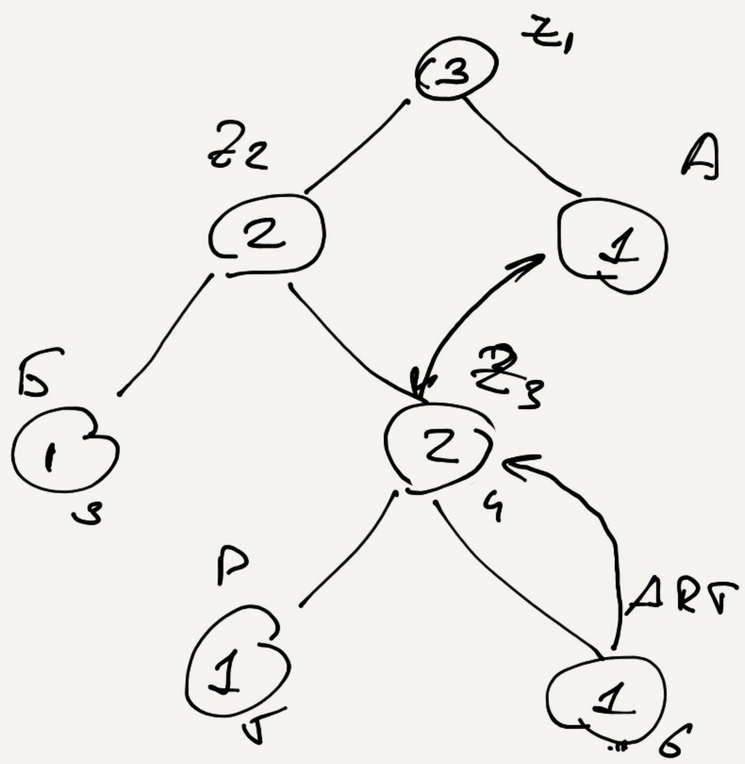

z1
3
0
z2
2
1
A
1
2
5
1
3
ART
1
4

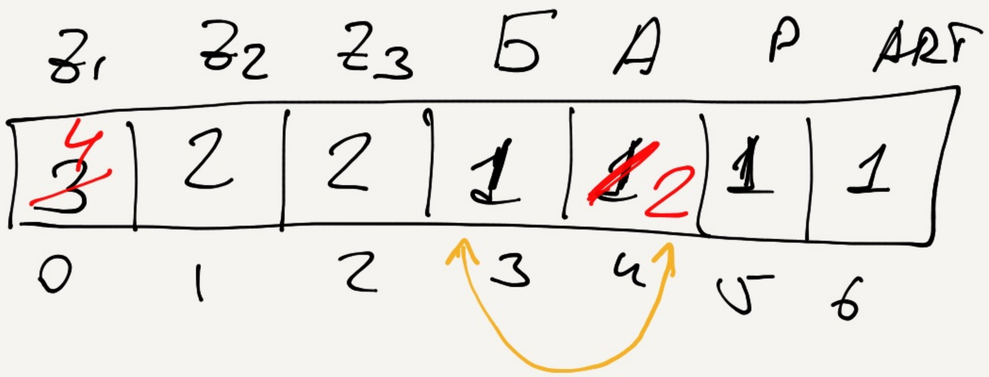
4 % 2 = 0


1 0
0 1

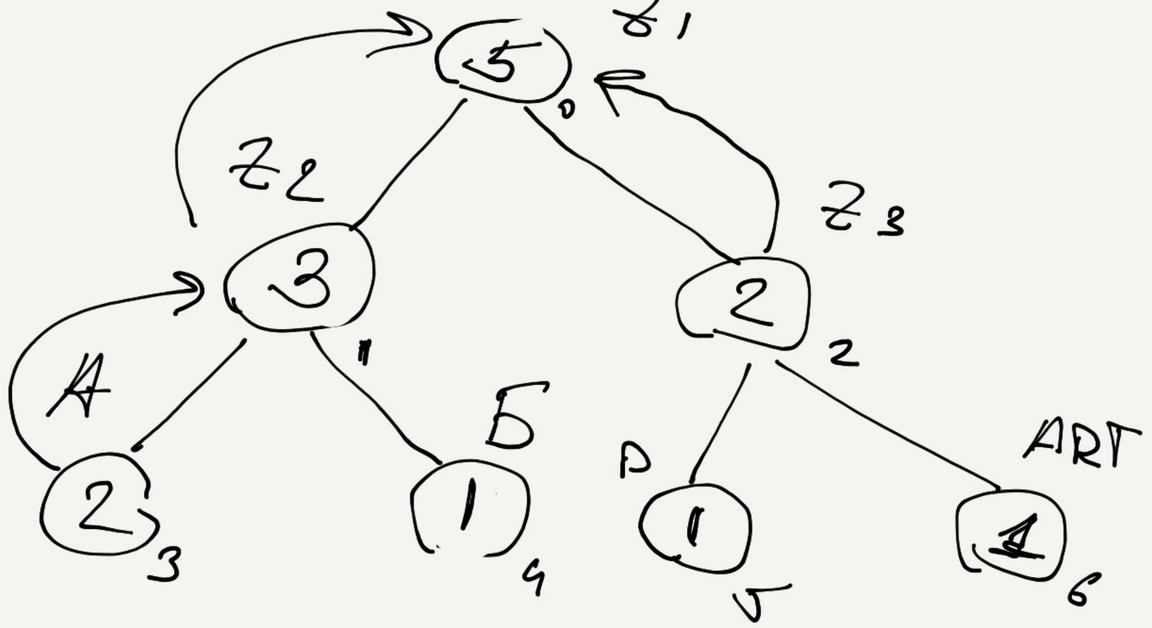
1 % 2 = 1

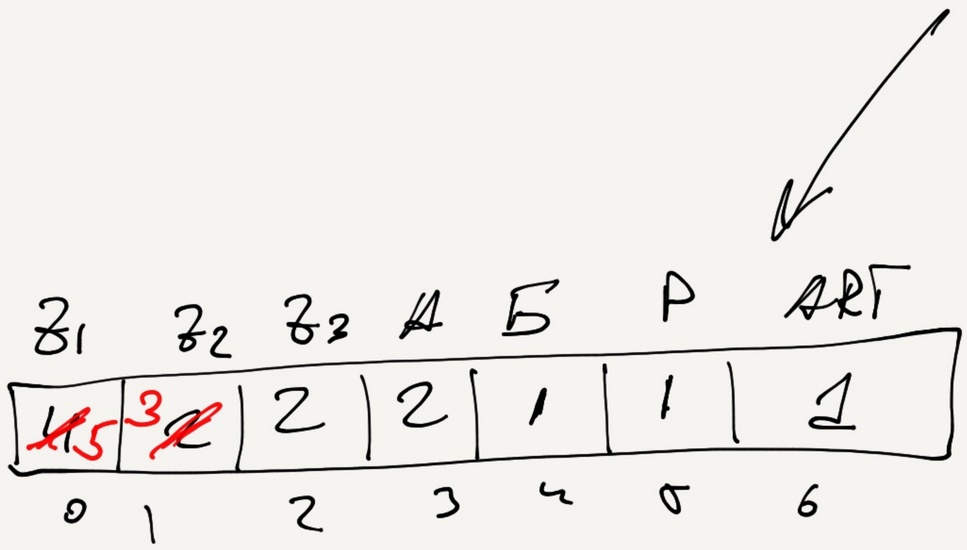

Z1 Z2 A Б Z3 P ARГ
3 2 1 1 2 1 1
0 1 2 3 4 5 6

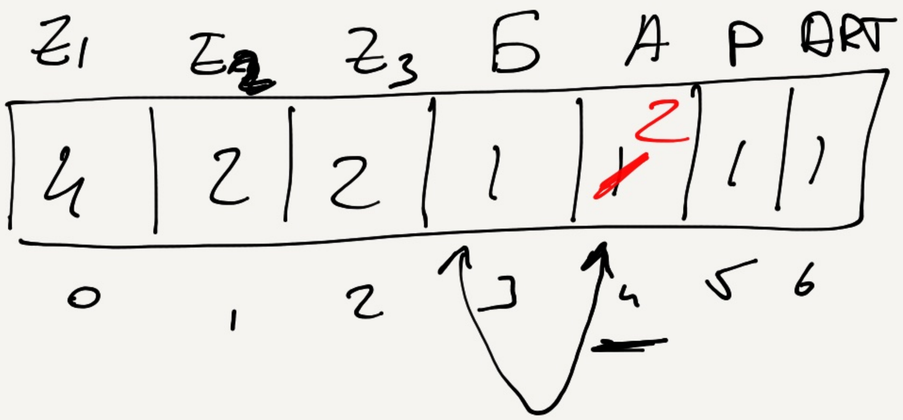

Z1
3
Z2
A
2
1
Б
Z3
1
2
4
P
ARГ
1
1
3
5
6

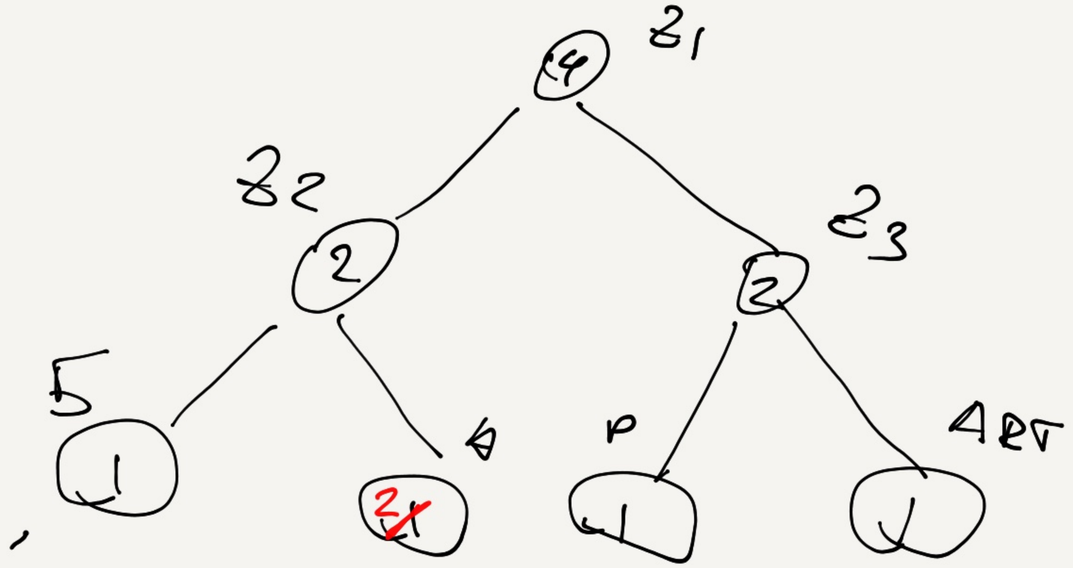

Z1 Z2 Z3 Б A P ARГ
4 3 2 2 1 1 2 1
0 1 2 3 4 5 6

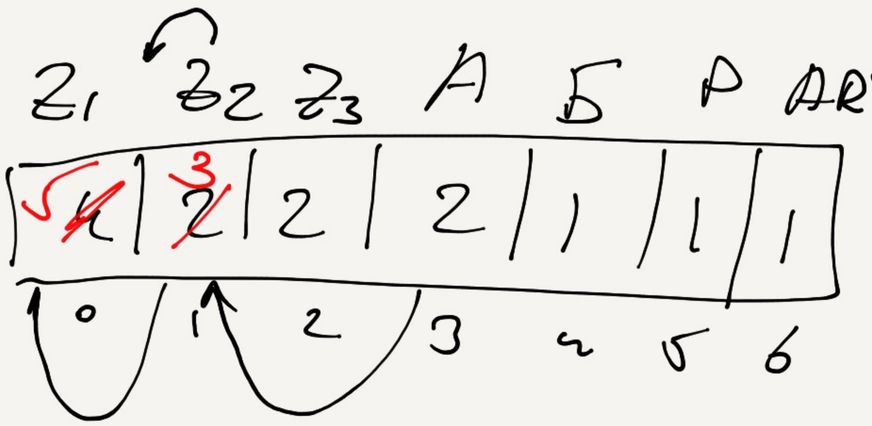
10 → 01

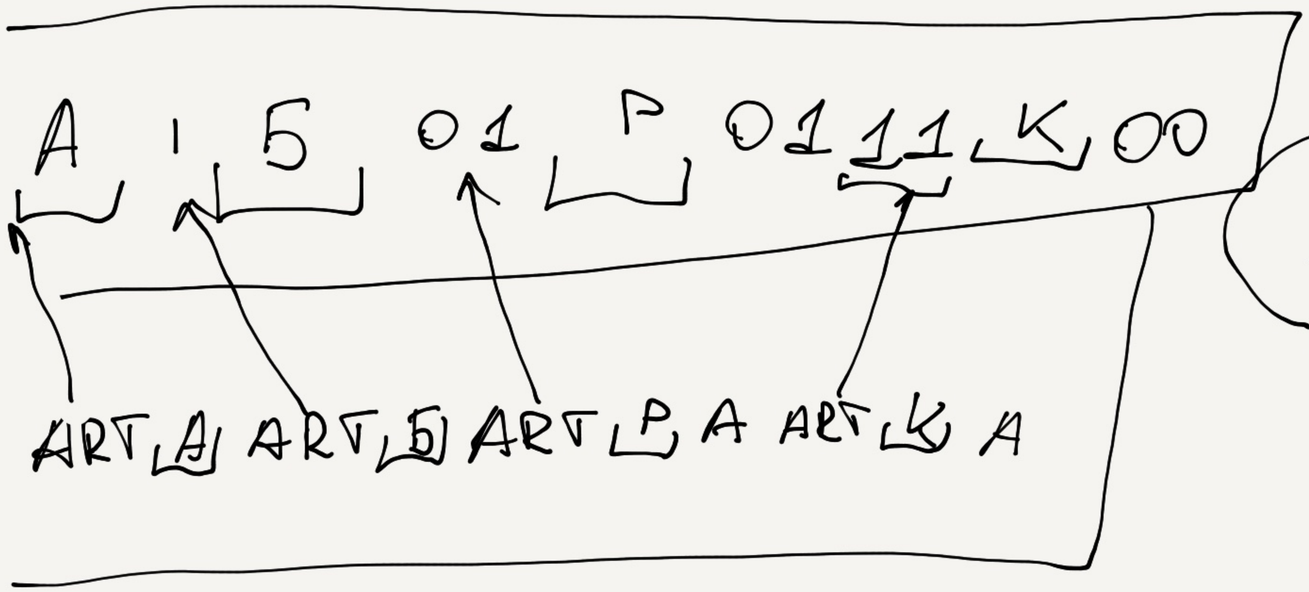

Z1
5
0
Z2
Z3
3
1
2
2
A
Б
P
ARГ
2
1
1
1
3
4
5
6

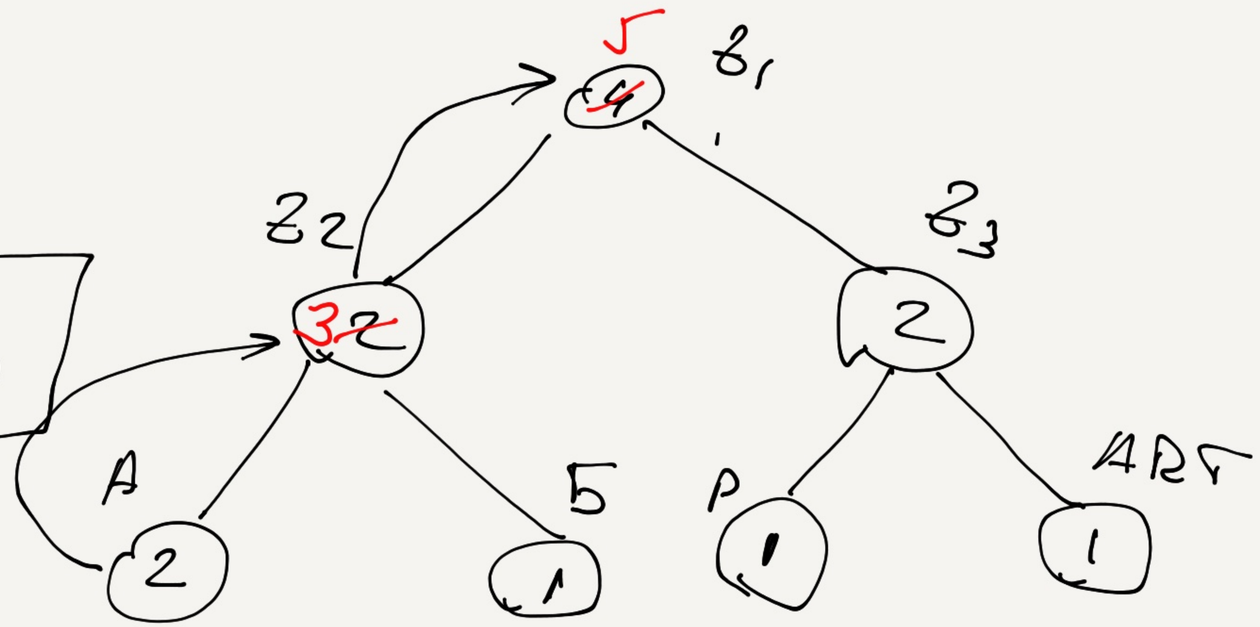

Z1 Z2 Z3 A Б P ARГ
5 3 2 2 1 1 1
0 1 2 3 4 5 6


Z1 Z2 Z3 Б А Р ART
4 2 2 1 1 1 1
0 1 2 3 4 5 6

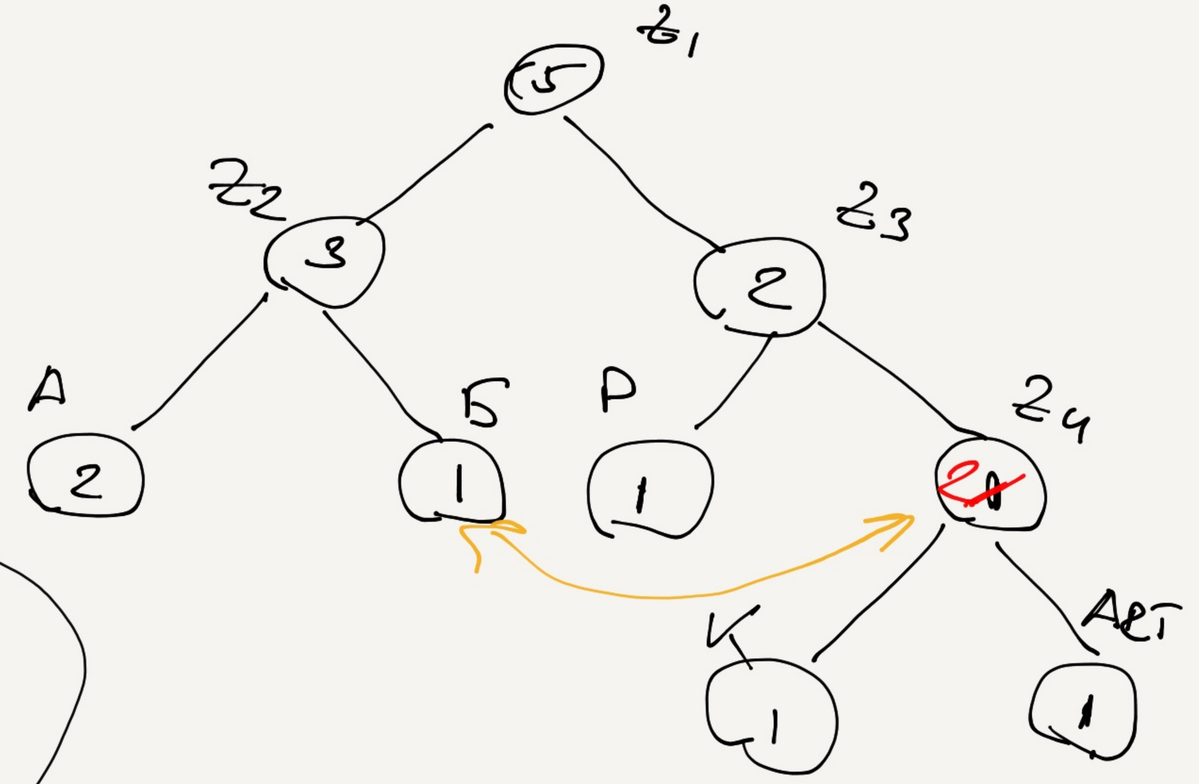

Z1
Z2
Z3
5
Б
Р
ART
4
2
2
1
1
1
1


Z1 Z2 Z3 А Б Р ART
4 2 2 2 1 1 1
0 1 2 3 4 5 6

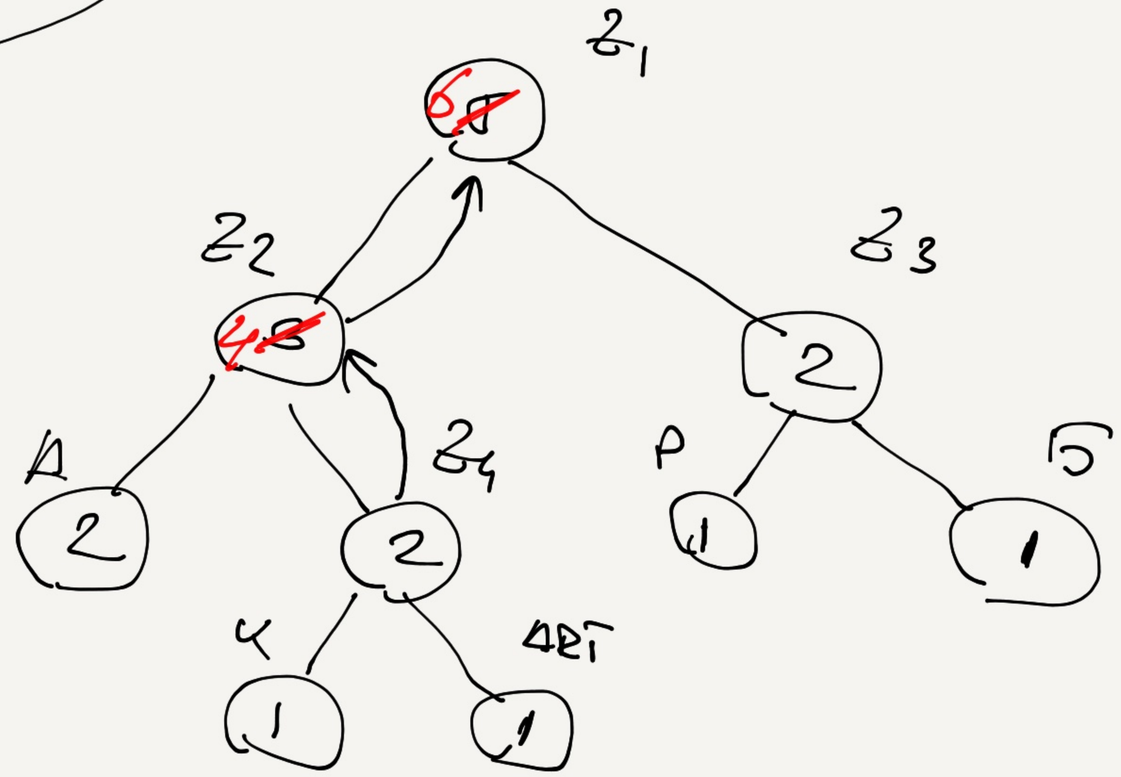

А | Б 01 Р 01 11 К 00
ART А ART Б ART Р А ART К А


Z1
Z2
Z3
4
3 2
2
А
Б
Р
ART
2
1
1
1

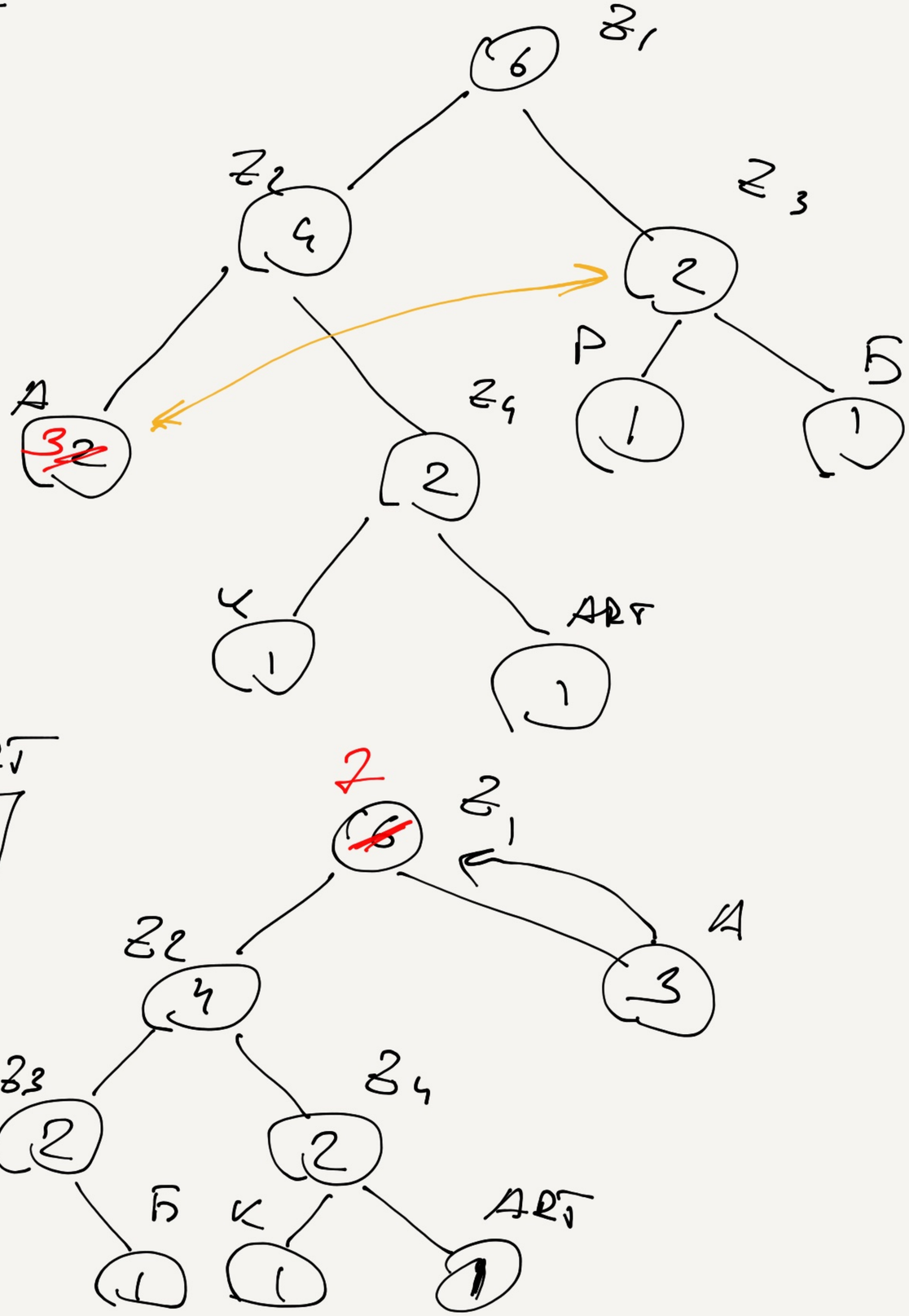
Z1	Z2	Z3	A	Б	Р	Z4	К	АВТ
5	3	2	2	1	1	~~4~~ 2	1	1
0	1	2	3	4	5	6	7	8



Z1	Z2	Z3	A	Z4	Р	Б	К	АВТ
6 ~~5~~	~~3~~ 4	2	2	2	1	1	1	1
0	1	2	3	4	5	6	7	8

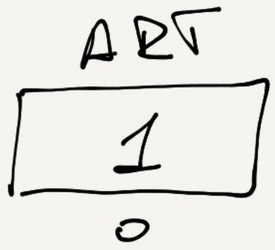


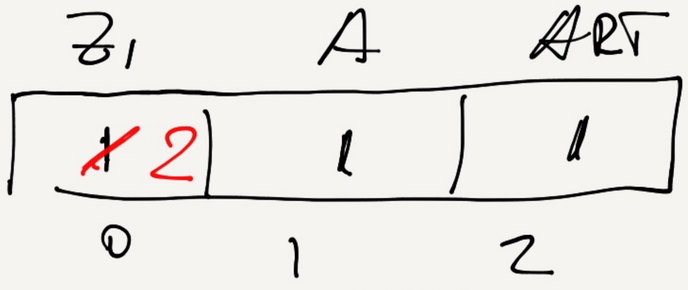
z_1	z_2	z_3	А	z_4	Р	Б	К	АРТ
6	4	2	~~2~~ 3	2	1	1	1	1
0	1	2	3	4	5	6	7	8

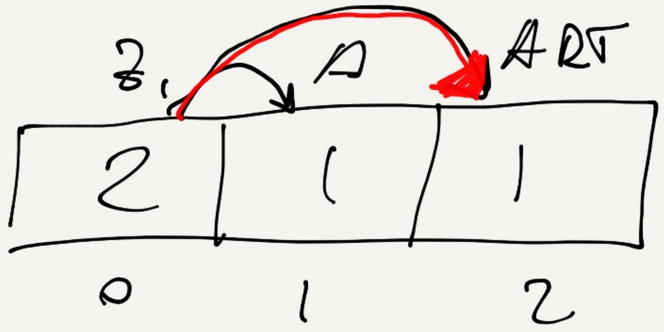


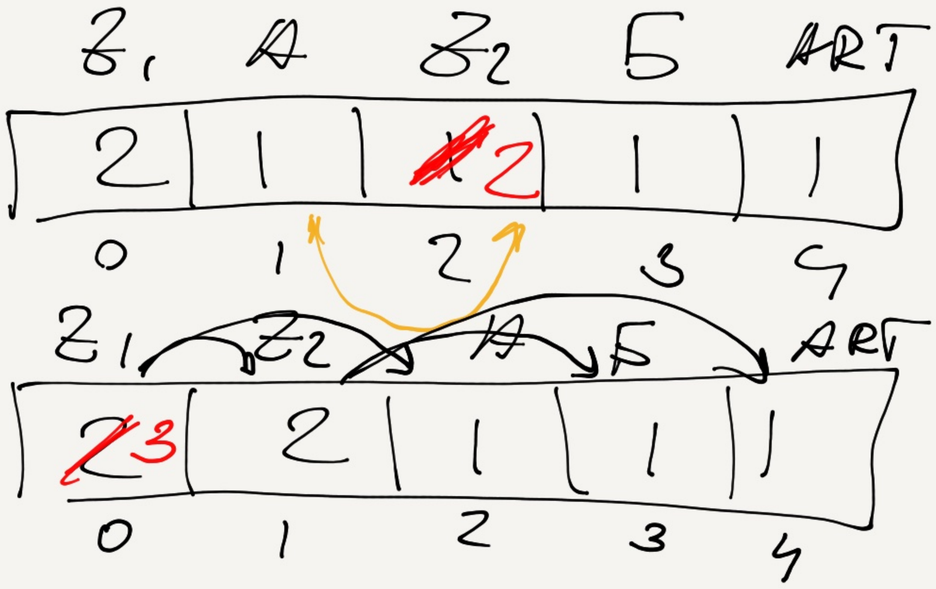
z_1	z_2	А	z_3	z_4	Р	Б	К	АРТ
~~7~~ 6	4	3	2	2	1	1	1	1
0	1	2	3	4	5	6	7	8

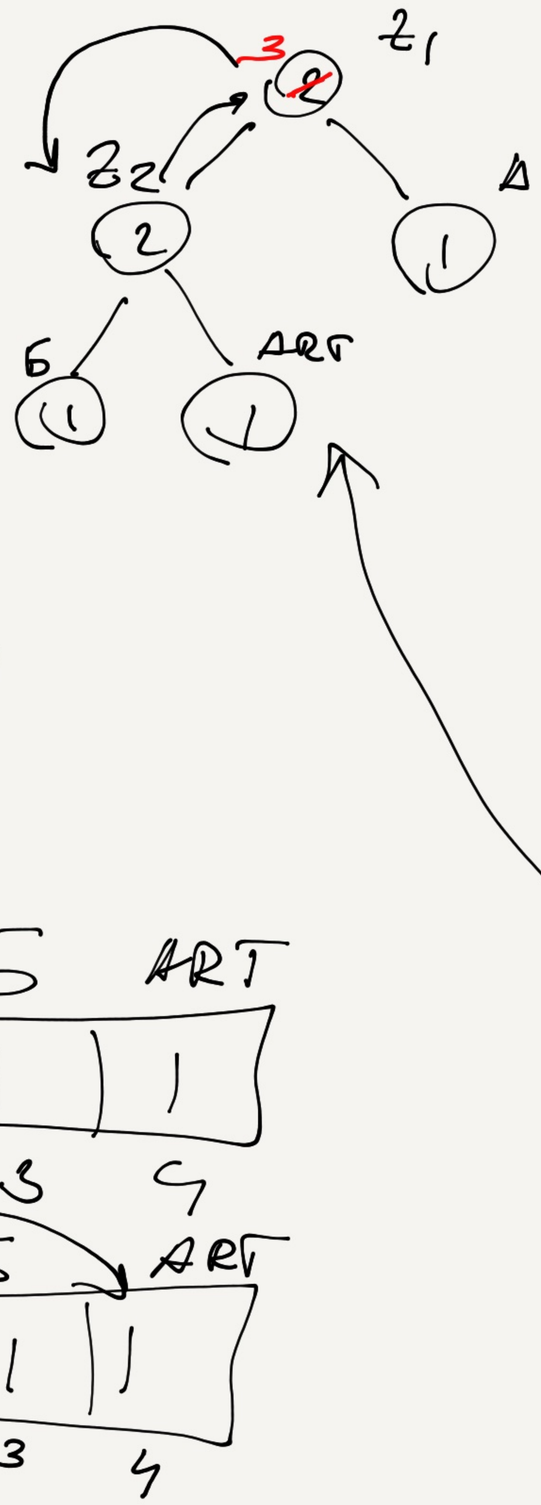
А 1 Б 01 Р 01 1 1 К 00 → АБРА

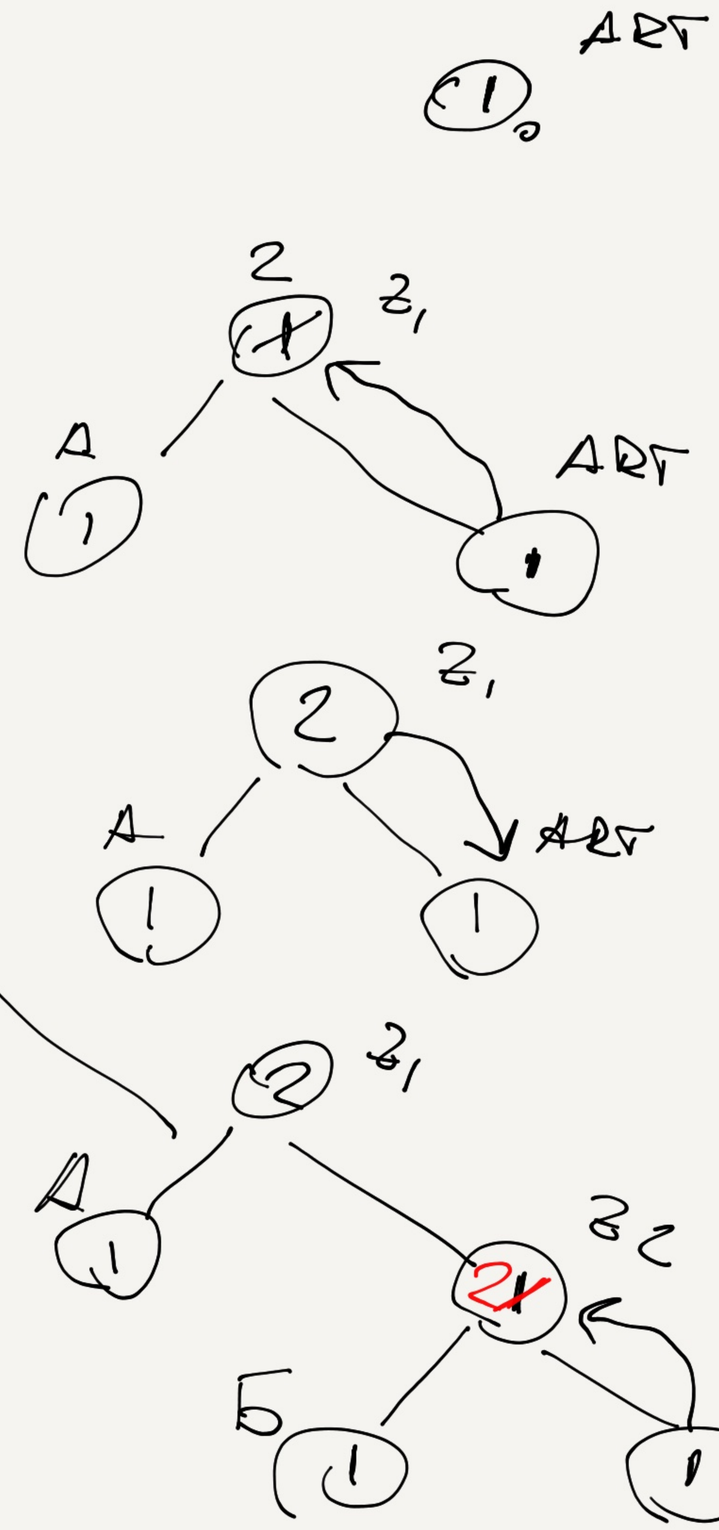


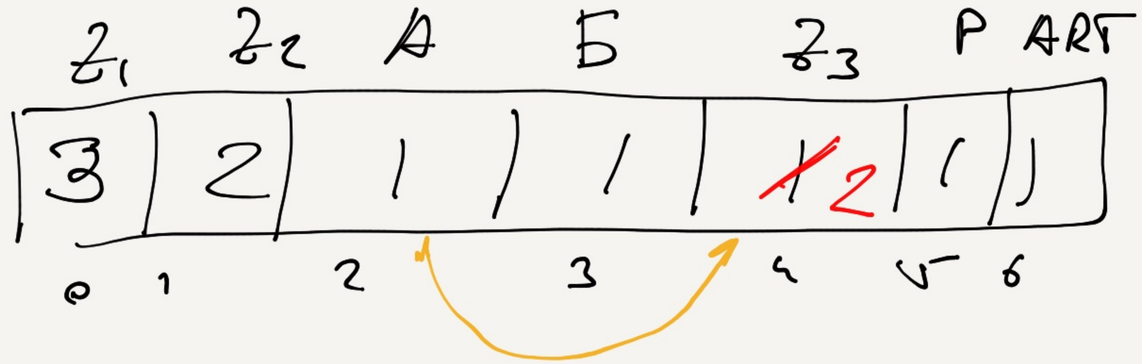


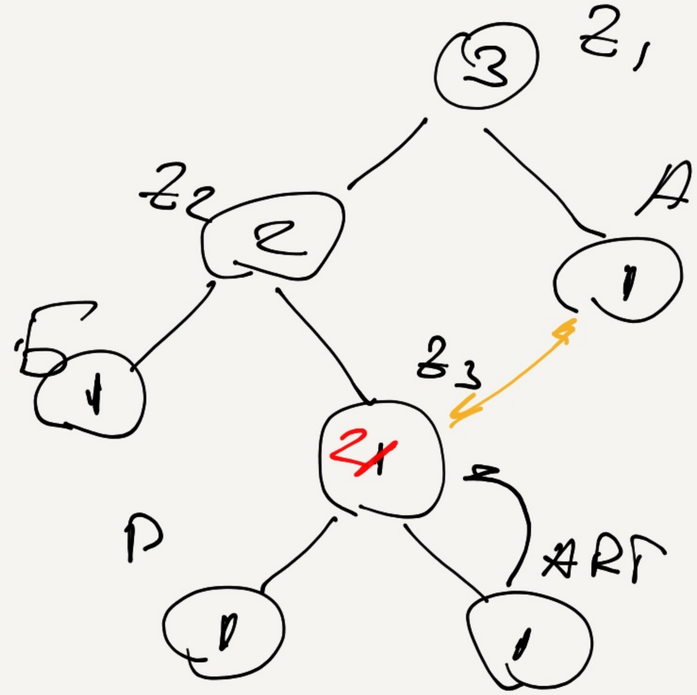


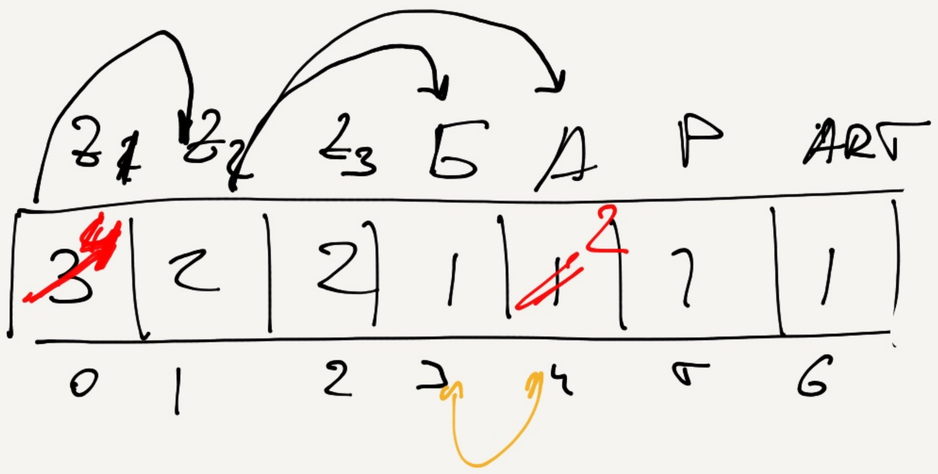


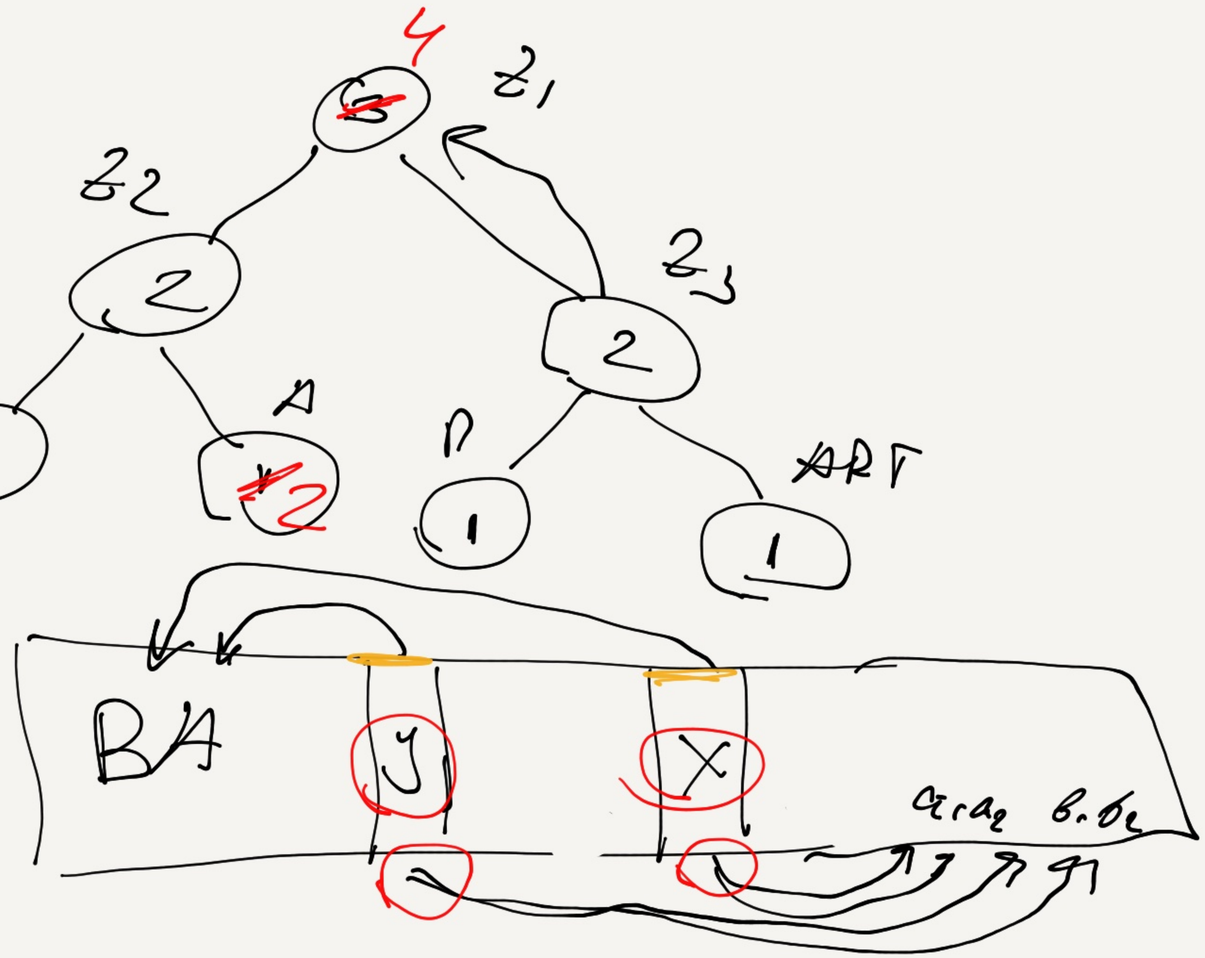


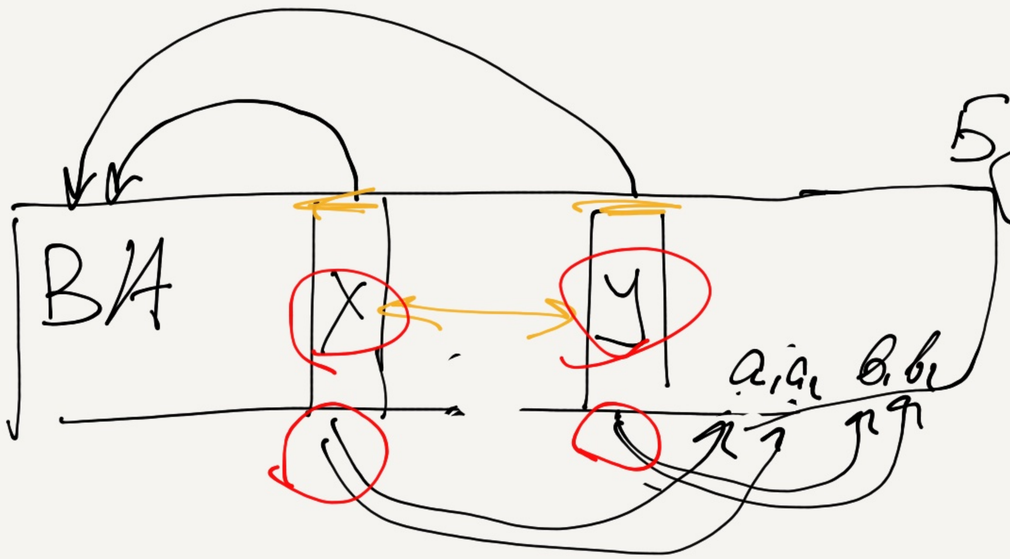



З1 З2 А Б З3 Р АРГ
3 2 1 1 2 1 1
0 1 2 3 4 5 6

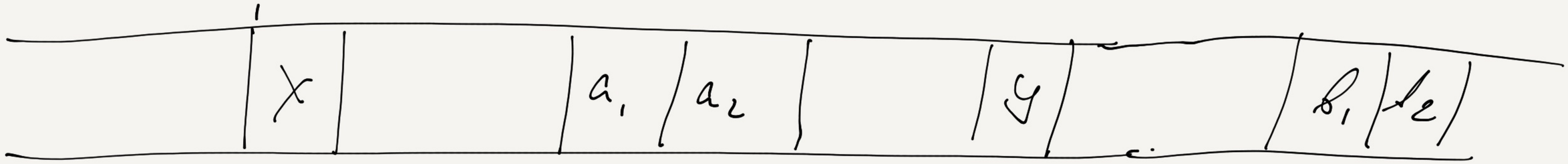

3
З1
З2
2
А
1
1
З3
2
Р
АРГ
1
1


З1 З2 З3 Б А Р АРГ
3 2 2 1 1 1 1
0 1 2 3 4 5 6


4
З1
3
З2
2
З3
2
Б
1
А
2
Р
1
АРГ
1
ВА
y
x
ВА
y
x


ВА
x
y
a1 a2 b1 b2

a1 a2 b1 b2



$X = a_1 + a_2$

$Y = b_1 + b_2$

$x \geq a_1 = a_2 \geq y \geq b_1 = b_2.$

$y \geq x$

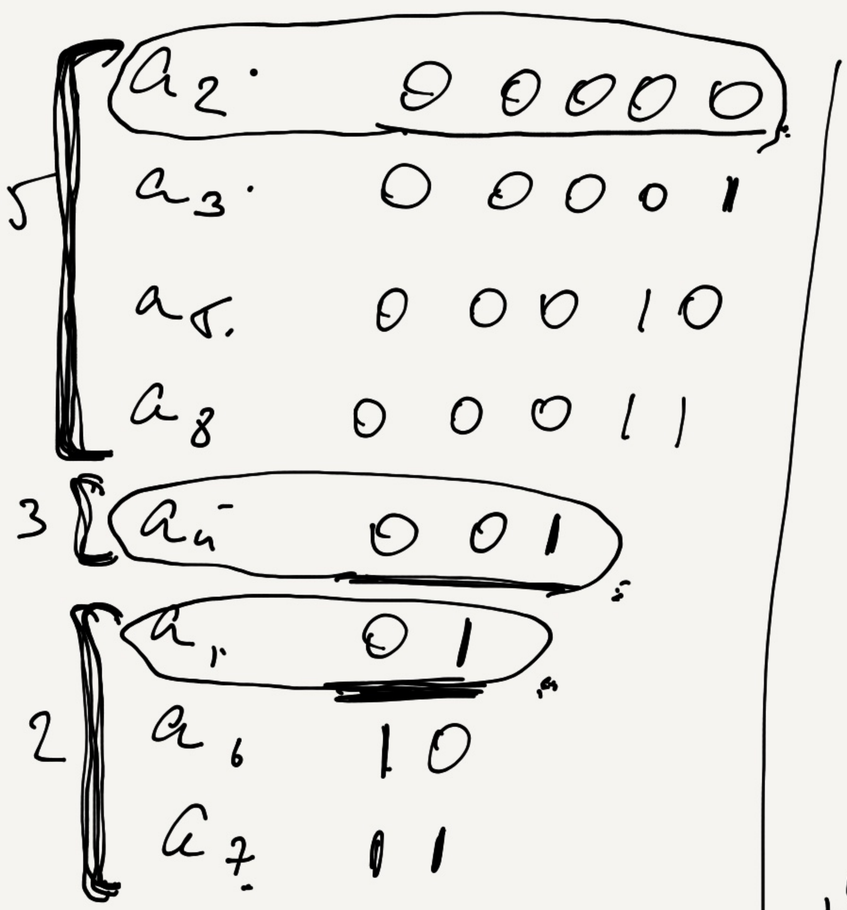
$y \quad a_1 \quad a_2 \geq x \quad b_1 \, b_2.$

Канонические коды Хаффмана

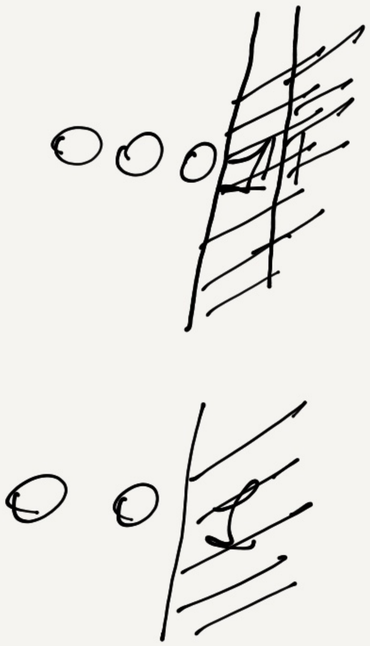
1. Длины кодов. ?
2. Код. ✓

$a_1 \le a_2 \le a_3 \le a_4 \le a_5 \le a_6 \le a_7 \le a_8$ ←

2 5 5 3 5 2 2 5



$a_5 a_5 a_4 a_6 a_3 a_4 a_7$

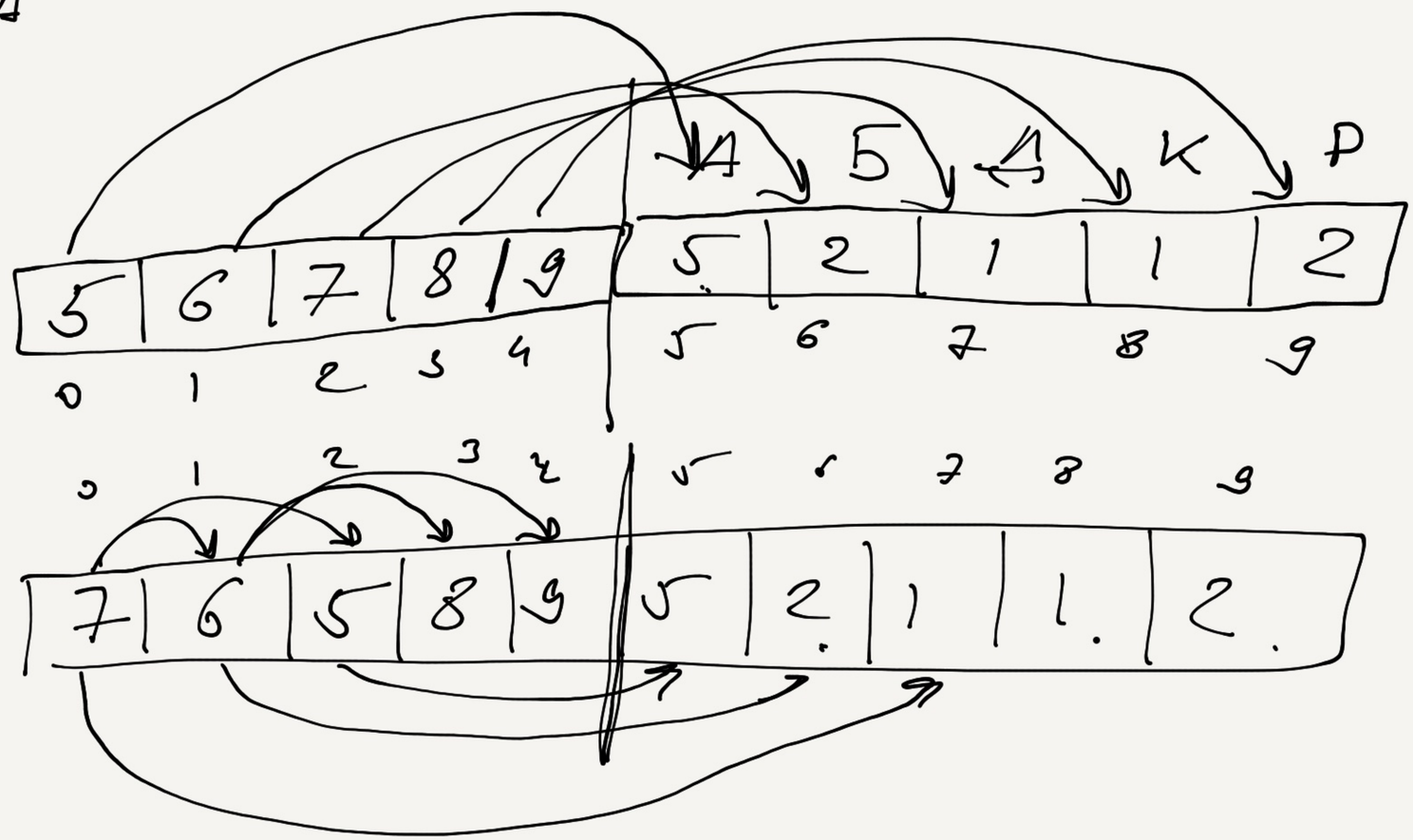


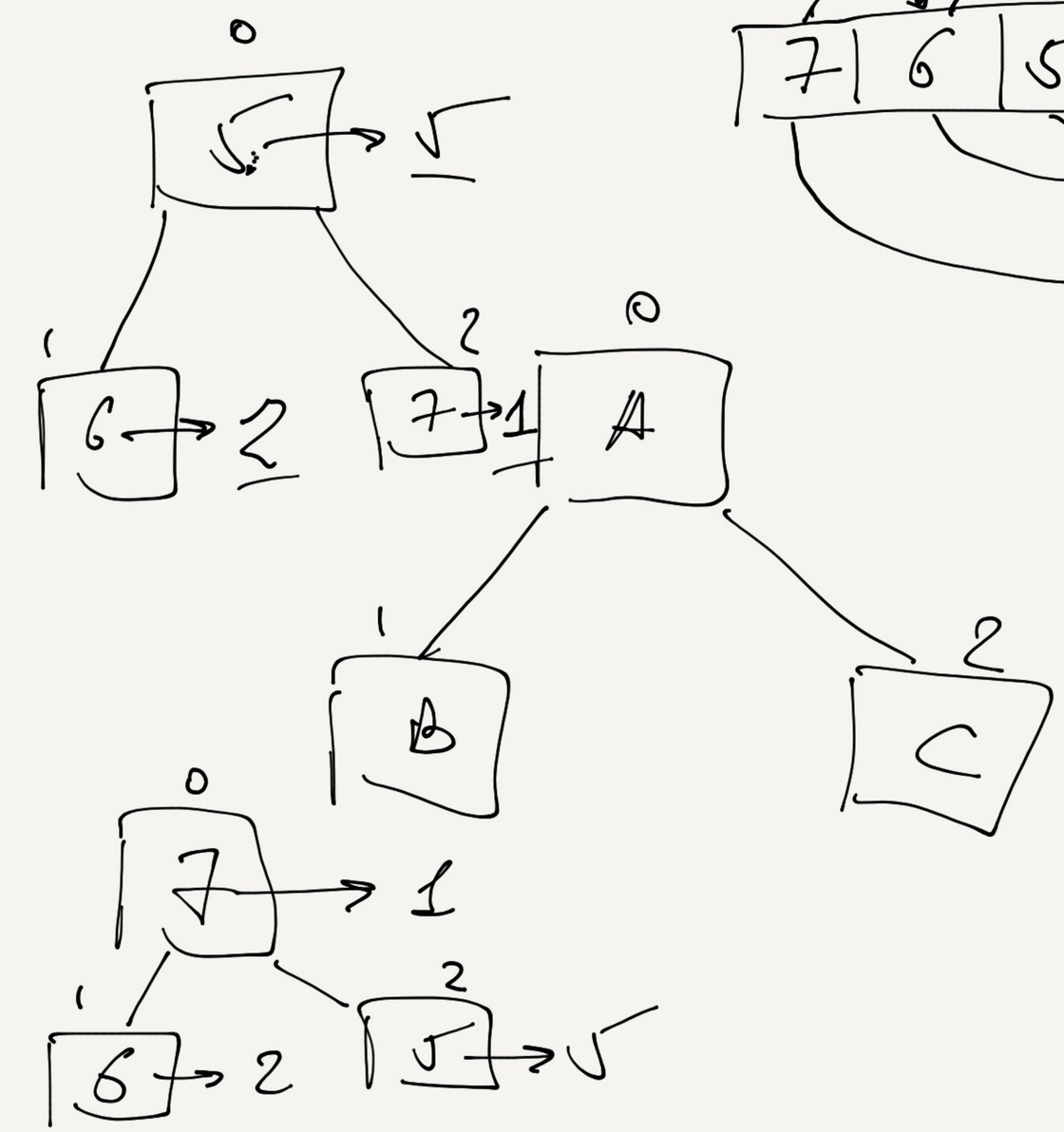
00010 00010 00 10 00001 00 11

a_5 a_5 a_4 a_6 a_3 a_4 a_7

АБРАКАДАБРА

А - 5
Б - 2
Р - 2
К - 1
Д - 1



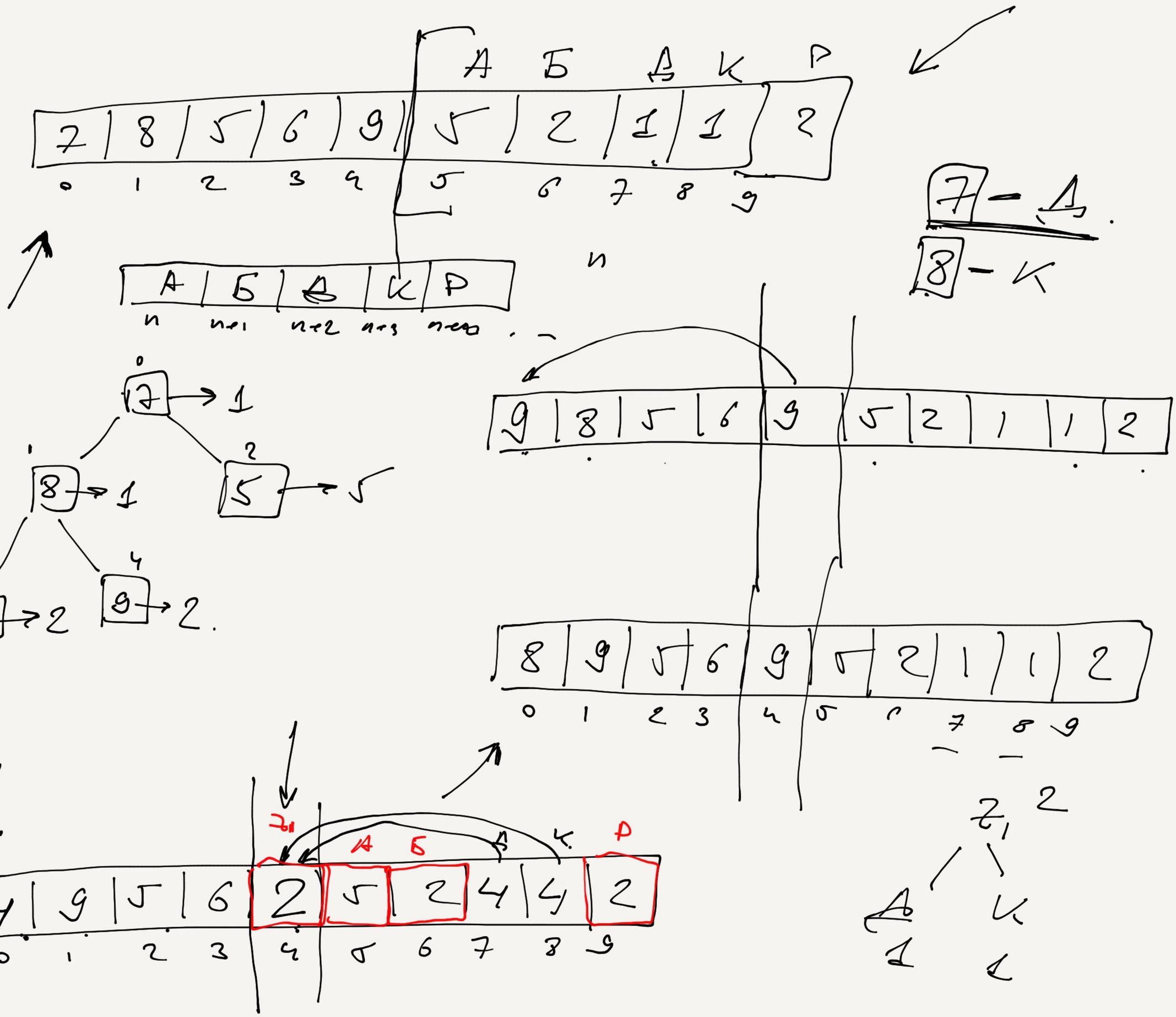


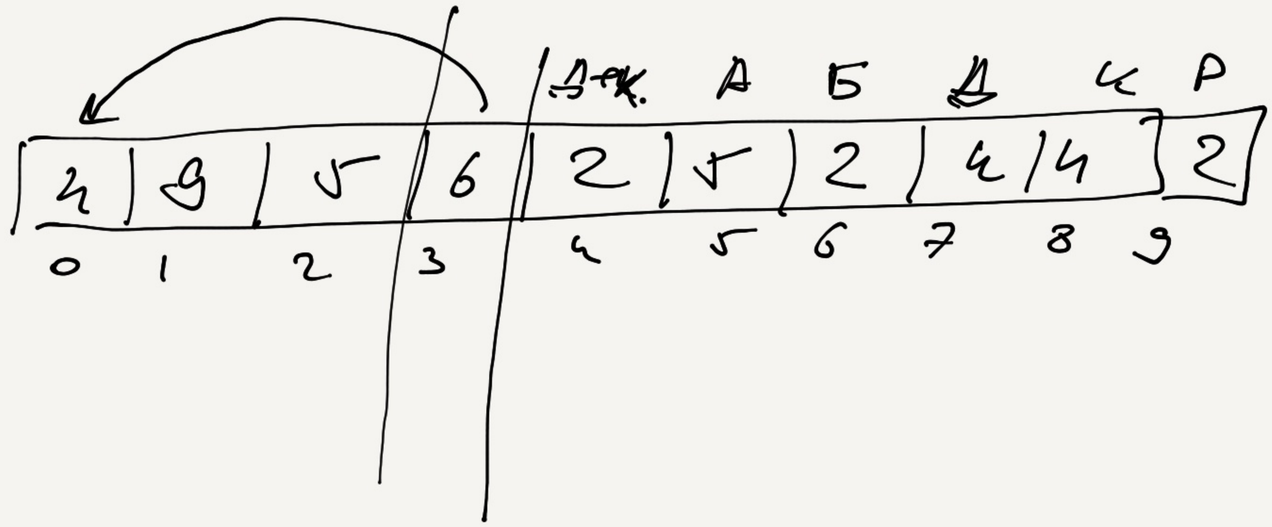
$A \le B$
$A \le C$

$a_0 \le a_{2i+1}$
$a_i \le a_{2i+2}$.

$a_i \to a[a_i]$.

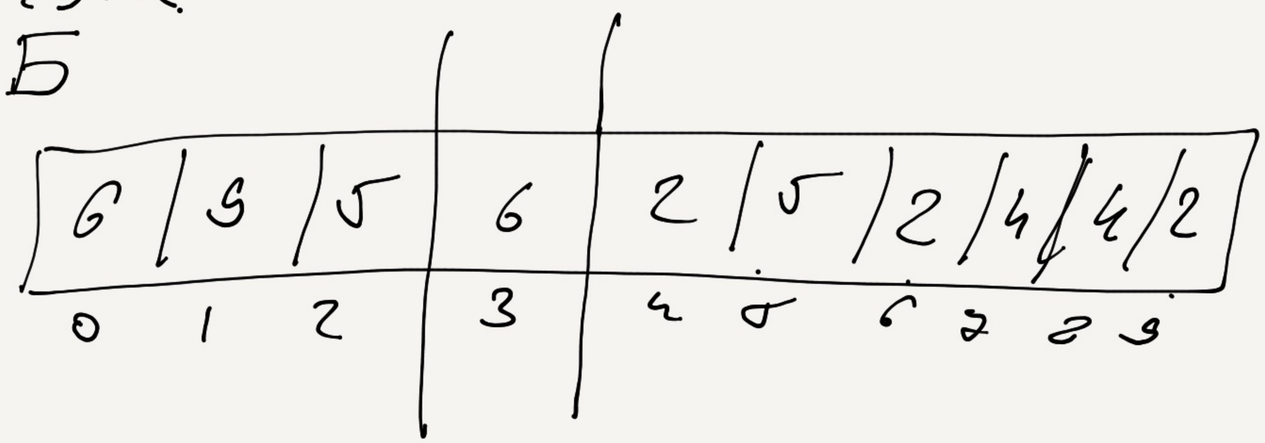
$a[a_{2i+1}]$ $a[a_{i+2}]$.

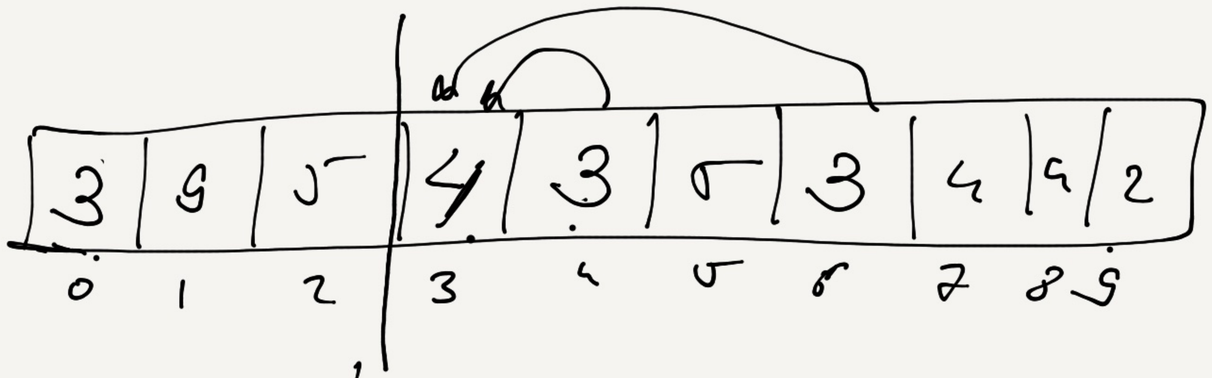

А Б А К Р
7 8 5 6 9 5 2 1 1 2
0 1 2 3 4 5 6 7 8 9
7 — А
8 — К
А Б А К Р
n n+1 n+2 n+3 n+4
9 8 5 6 9 5 2 1 1 2
8 9 5 6 9 5 2 1 1 2
4 9 5 6 2 5 2 4 4 2
А Б А К Р
Z1
Z1 2
А К
1 1

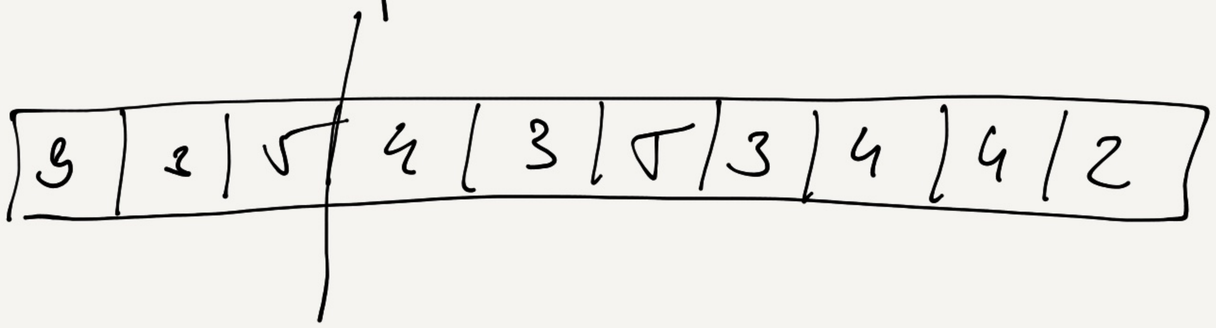


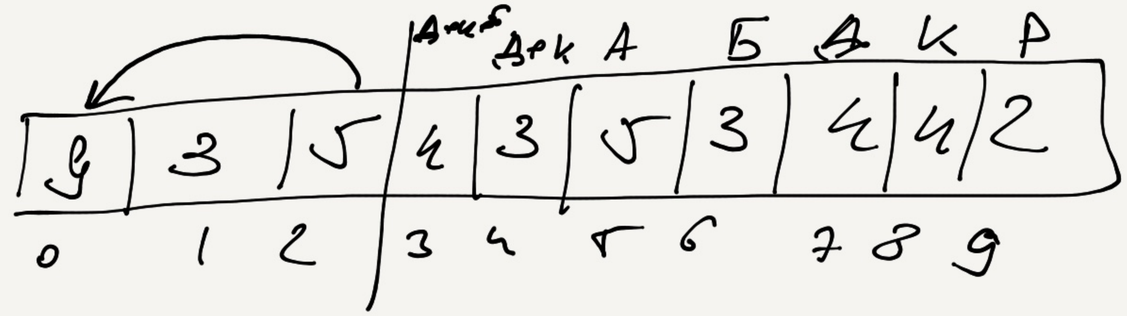
Ц – Дек. 21

б – Б

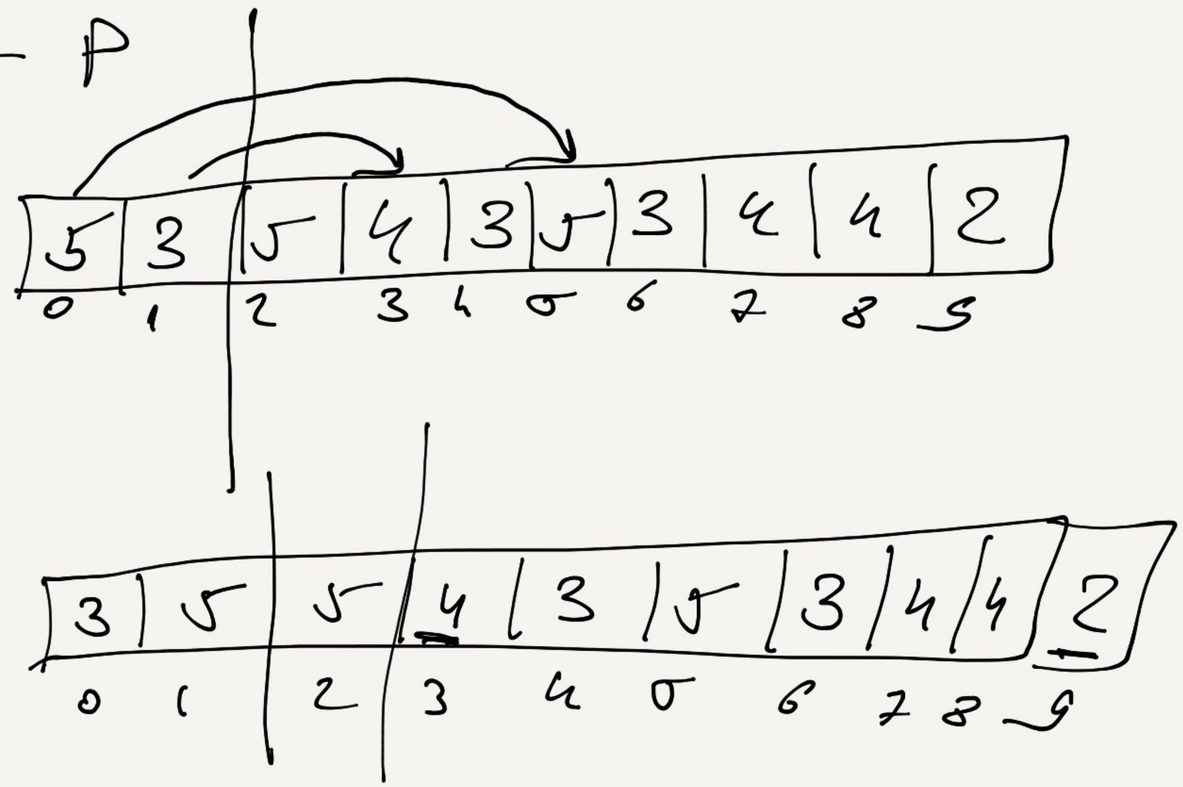




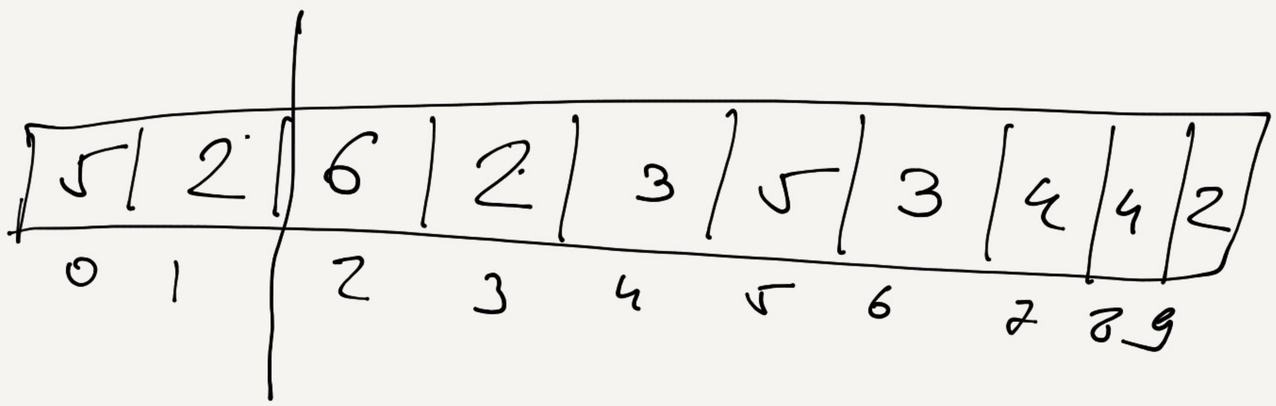


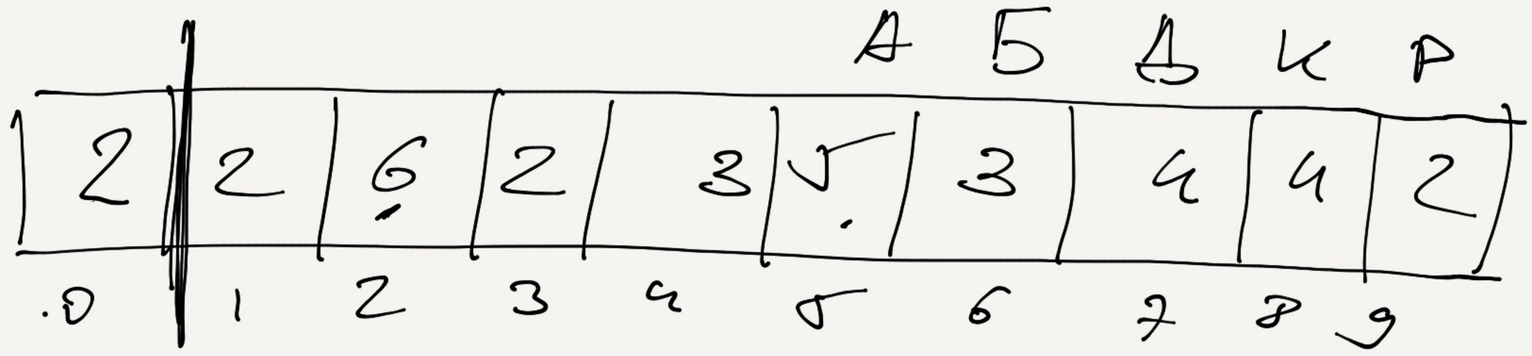

Анна
Дрк
А Б А К Р
9 3 5 4 3 5 3 4 4 2
0 1 2 3 4 5 6 7 8 9

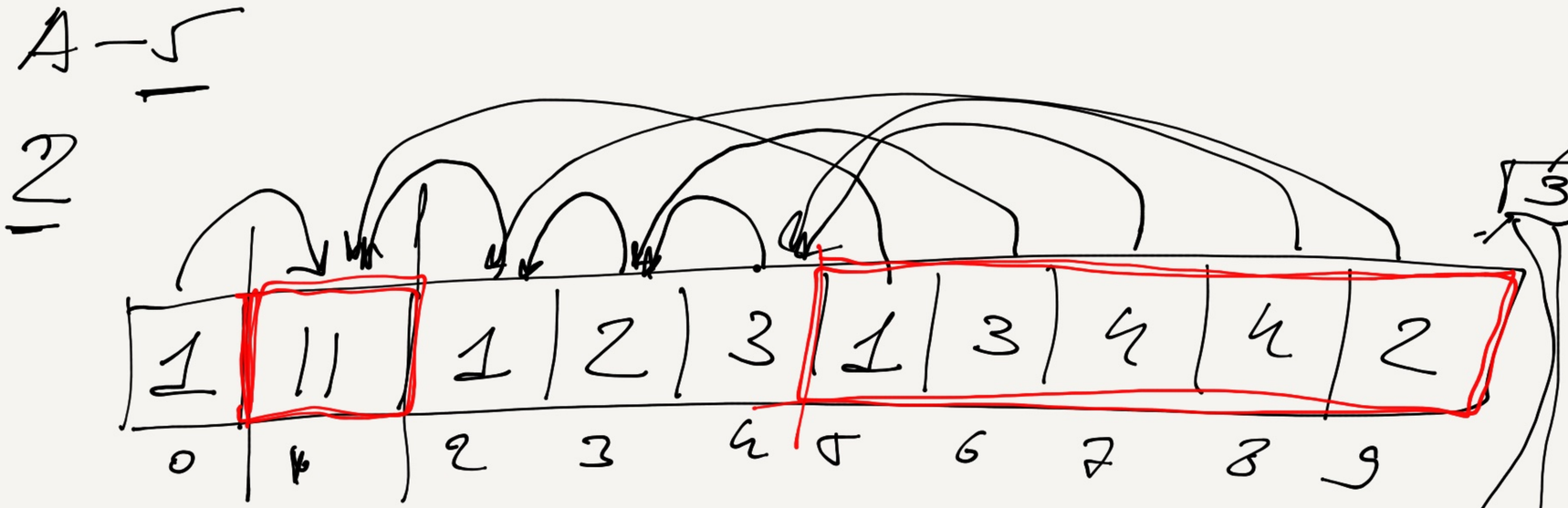
9 — Р

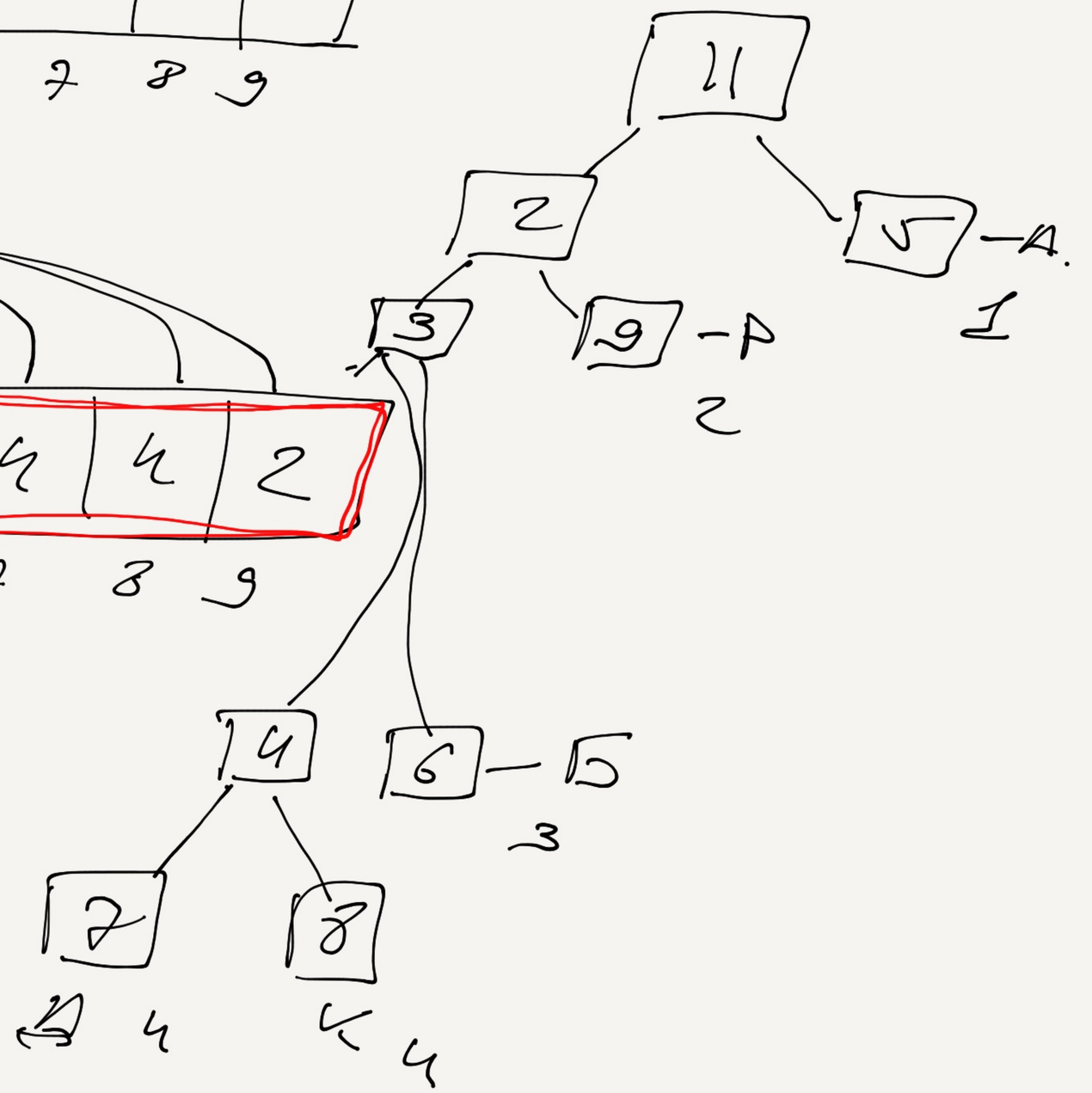

5 3 5 4 3 5 3 4 4 2
0 1 2 3 4 5 6 7 8 9
3 5 5 4 3 5 3 4 4 2
0 1 2 3 4 5 6 7 8 9

3 — (Дрк) + 5


5 2 6 2 3 5 3 4 4 2
0 1 2 3 4 5 6 7 8 9







$\leq |\Sigma|$

1 Σ letters

|Text|

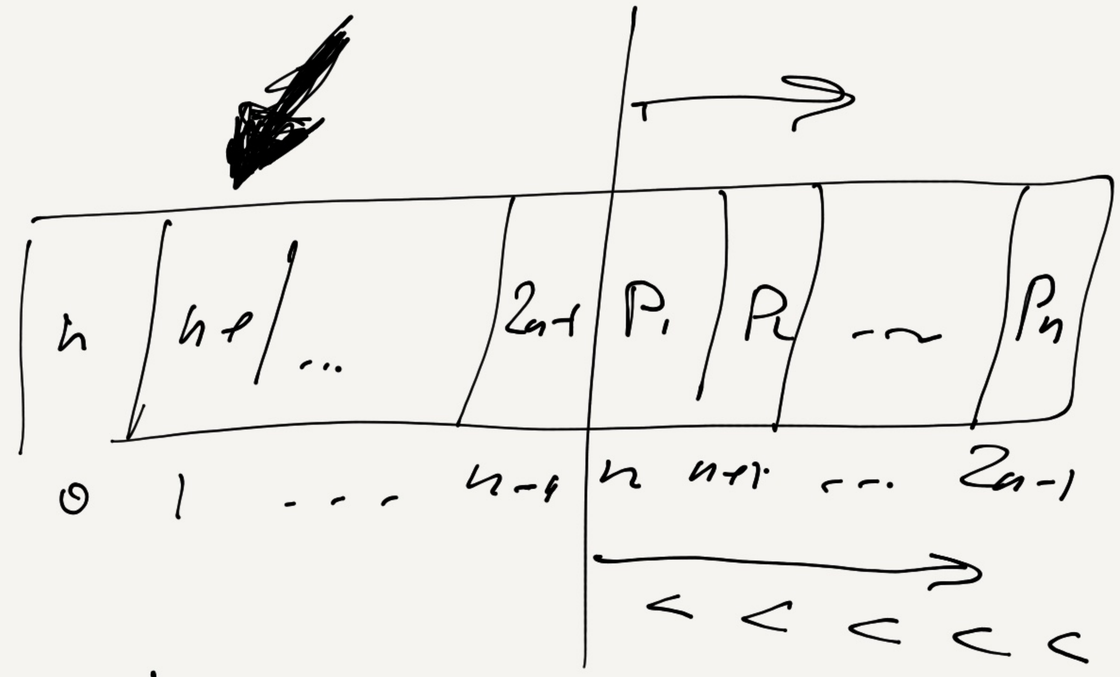
А – 1
Б – 3
Д – 4
К – 4
Р – 2

4 [A 0000
  K 0001

3 [B 001

2 [P 01

1 [A 1



$|a_i|$

$\sum_i |a_i|$