Lecture of 4th March 2022

Friday, March 4, 2022 9:16 PM

1. CBS
2. AB
3. TSS ✓
4. CC Comb
5. II Perm
6. 01 KS
7. UB KS
8. F KS

1. Count Binary String of length n

n = 5

9:19 to 9:21

2 minute

00000
10101
11111

10011 X

11010 ✓

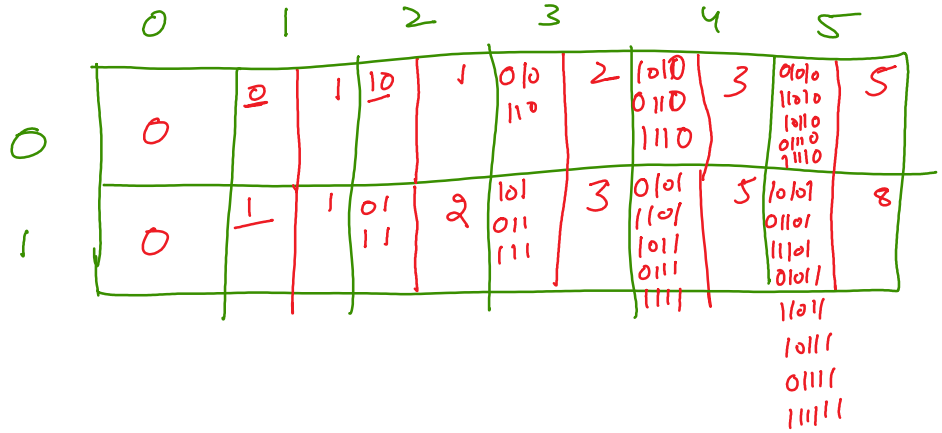
1010 ✓ 01101 ✓

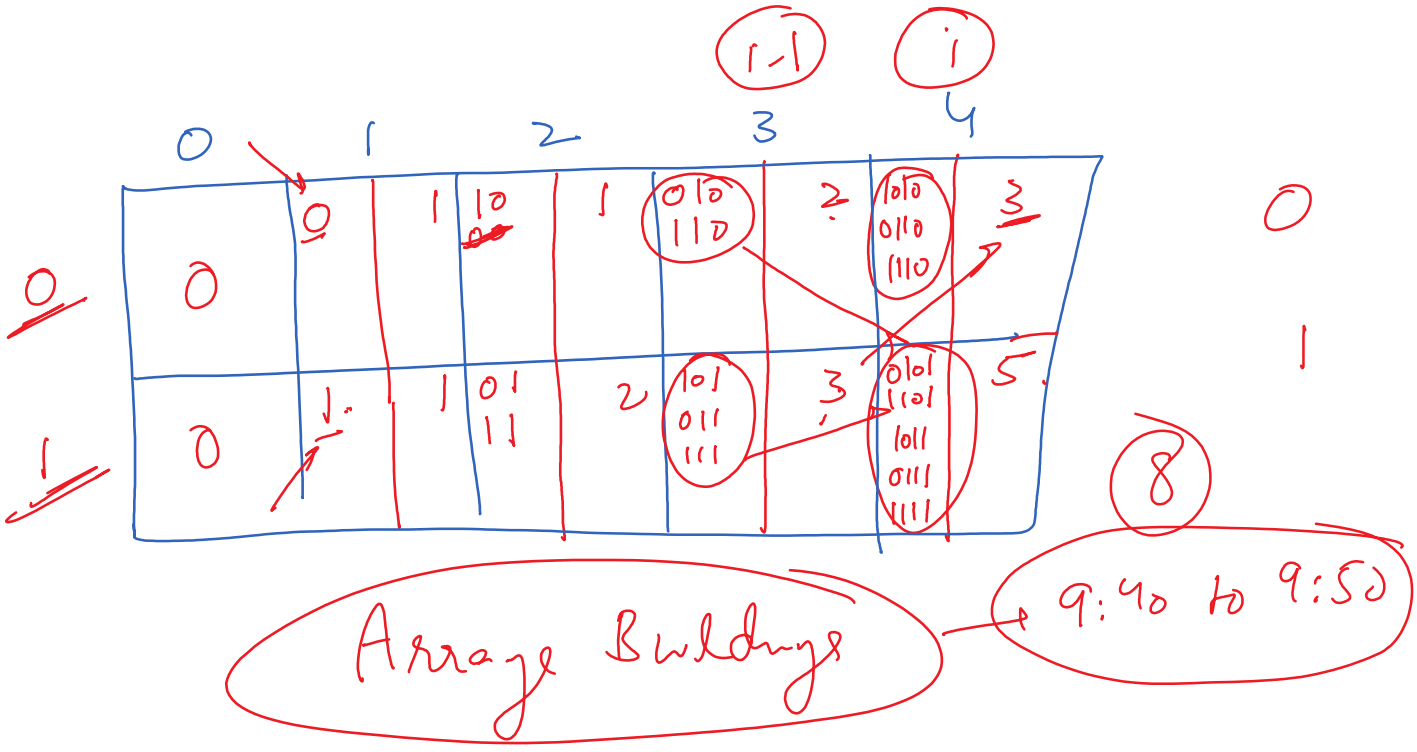
11111 ✓ 01010 ✓

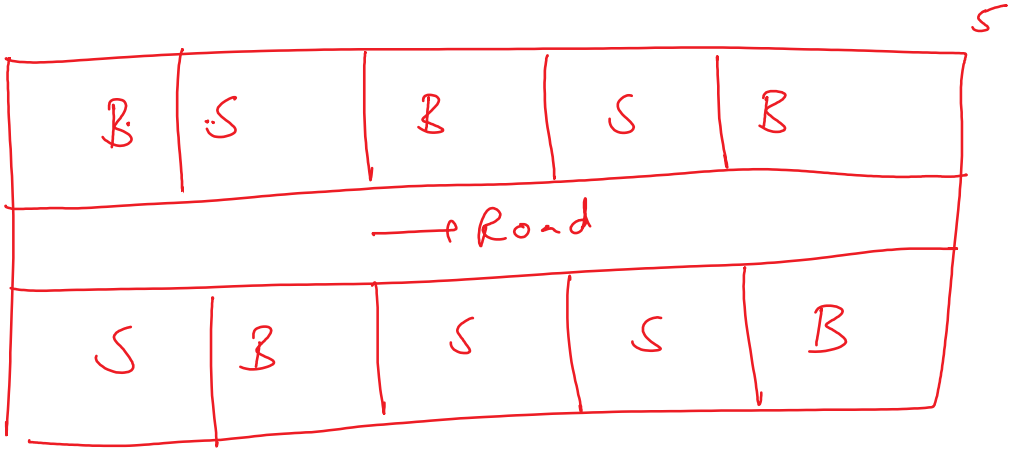
11011 ✓ 01001 X

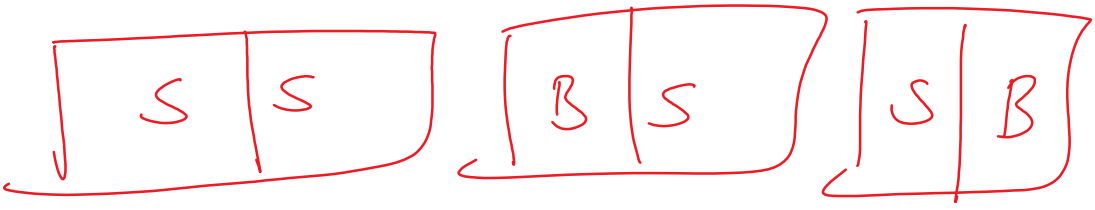
O(n)

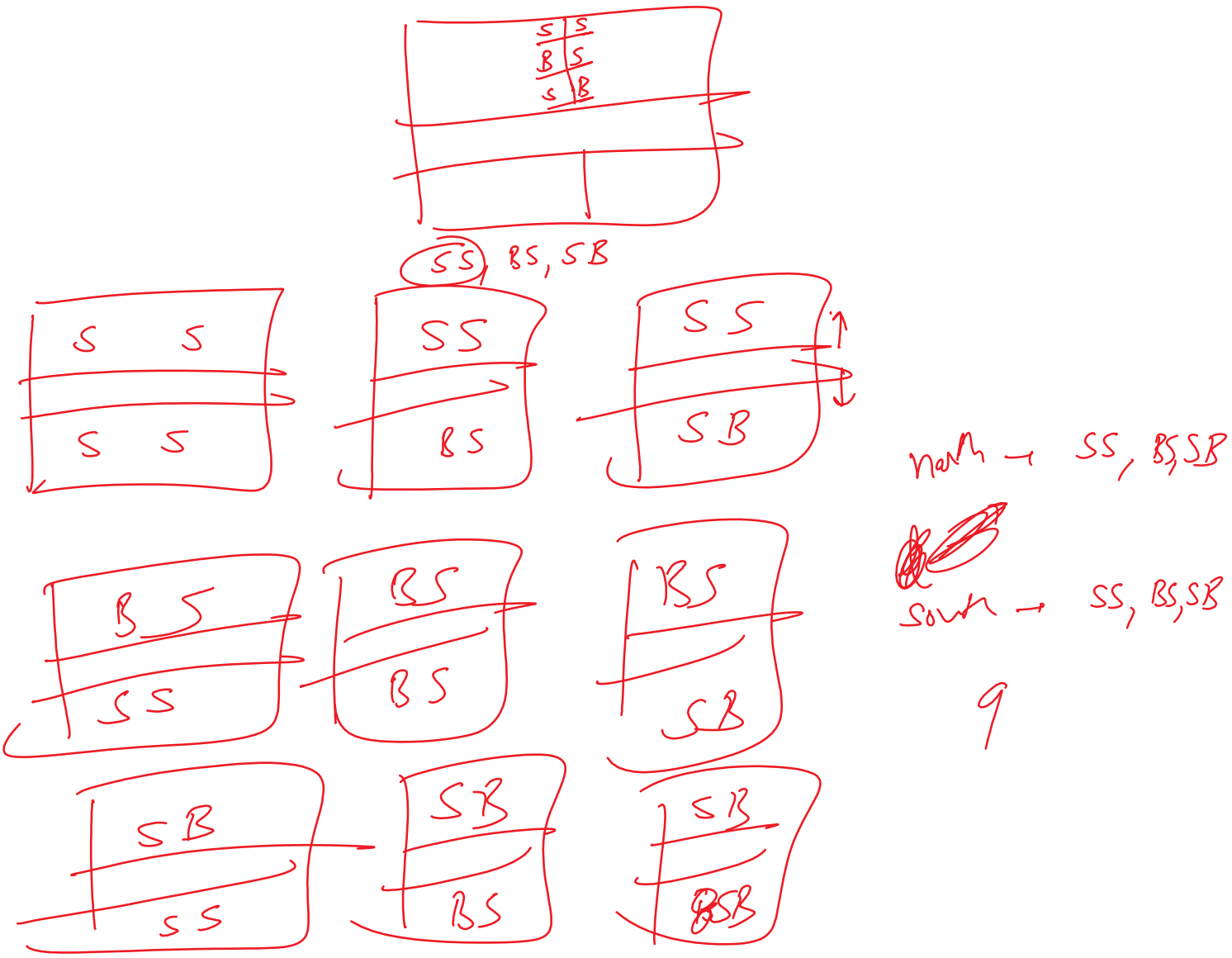
1, 2, 3



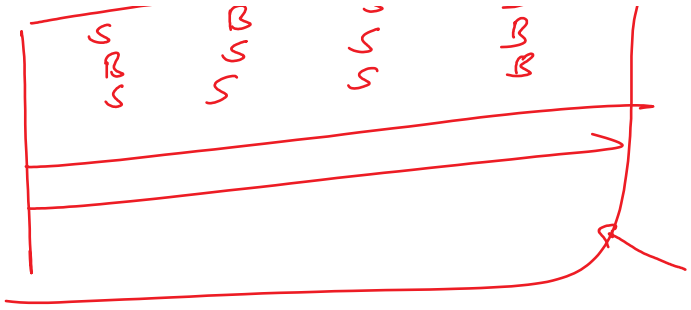

i-1
i
0
1
2
3
4
0
1
8
Array Buildings
9:40 to 9:50

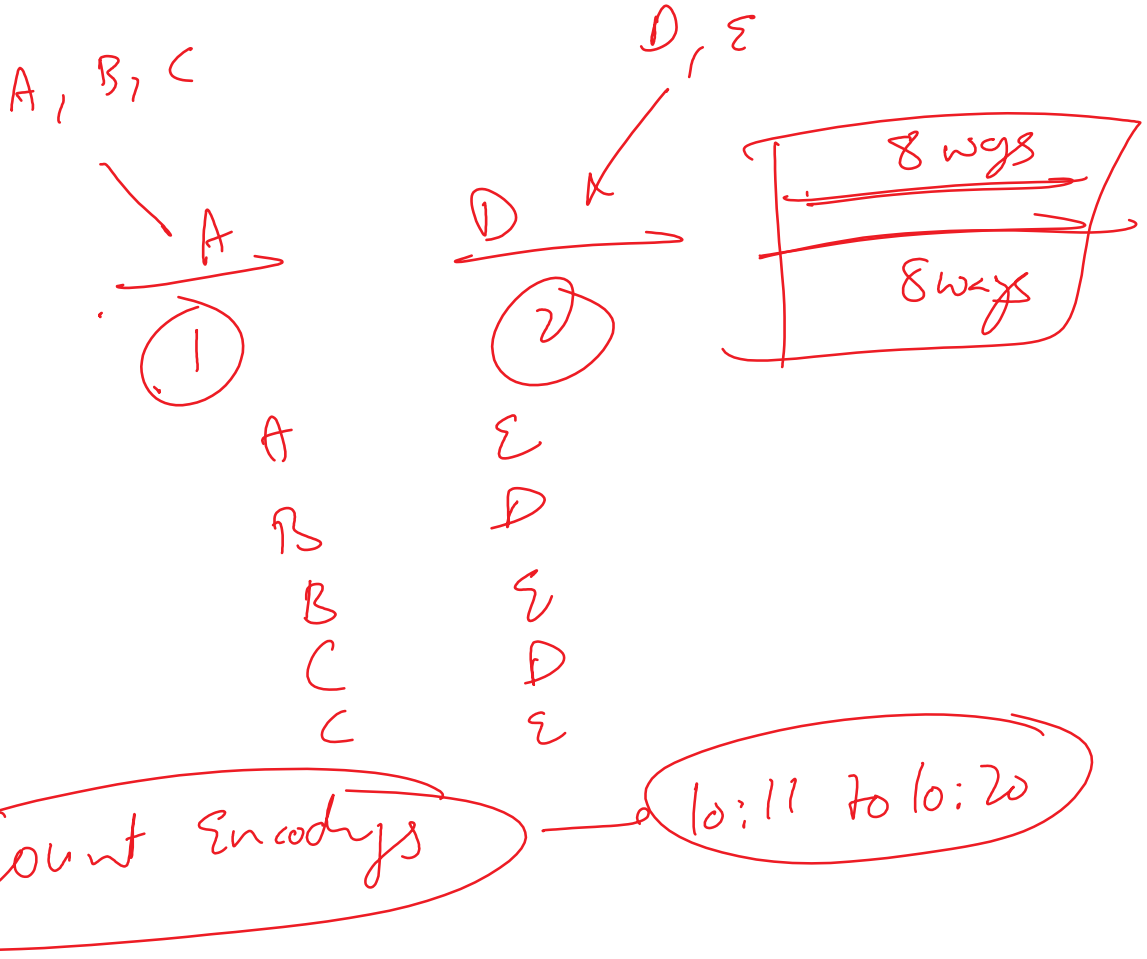

5
B
S
B
S
B
Road
S
B
S
S
B


S
S
B
S
S
B

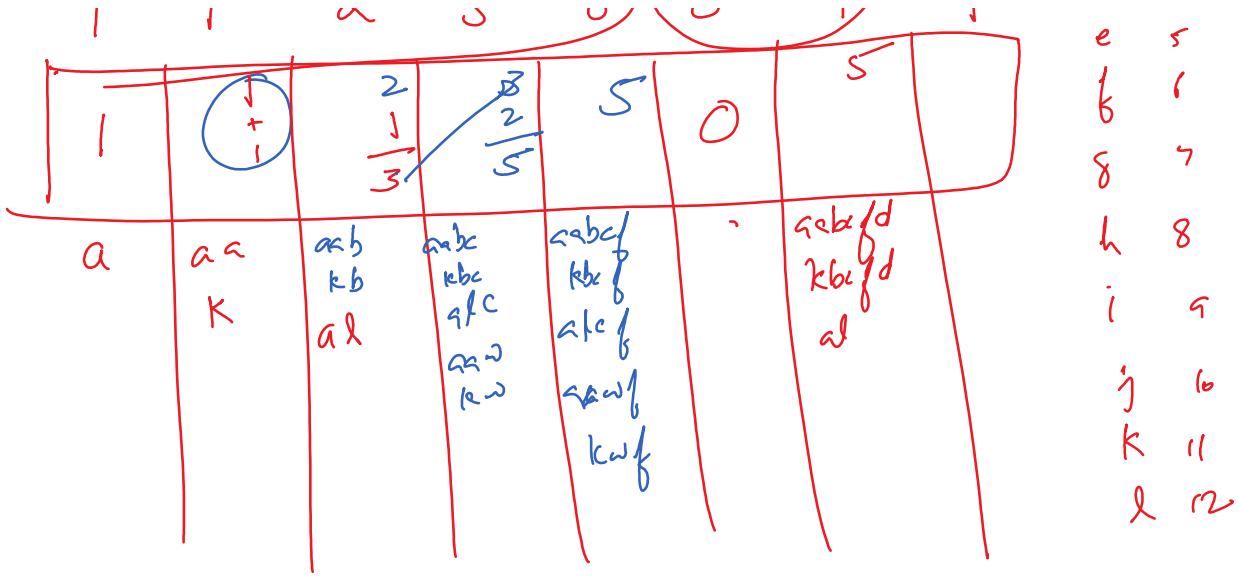

SS, BS, SB
north → SS, BS, SB
south → SS, BS, SB
9

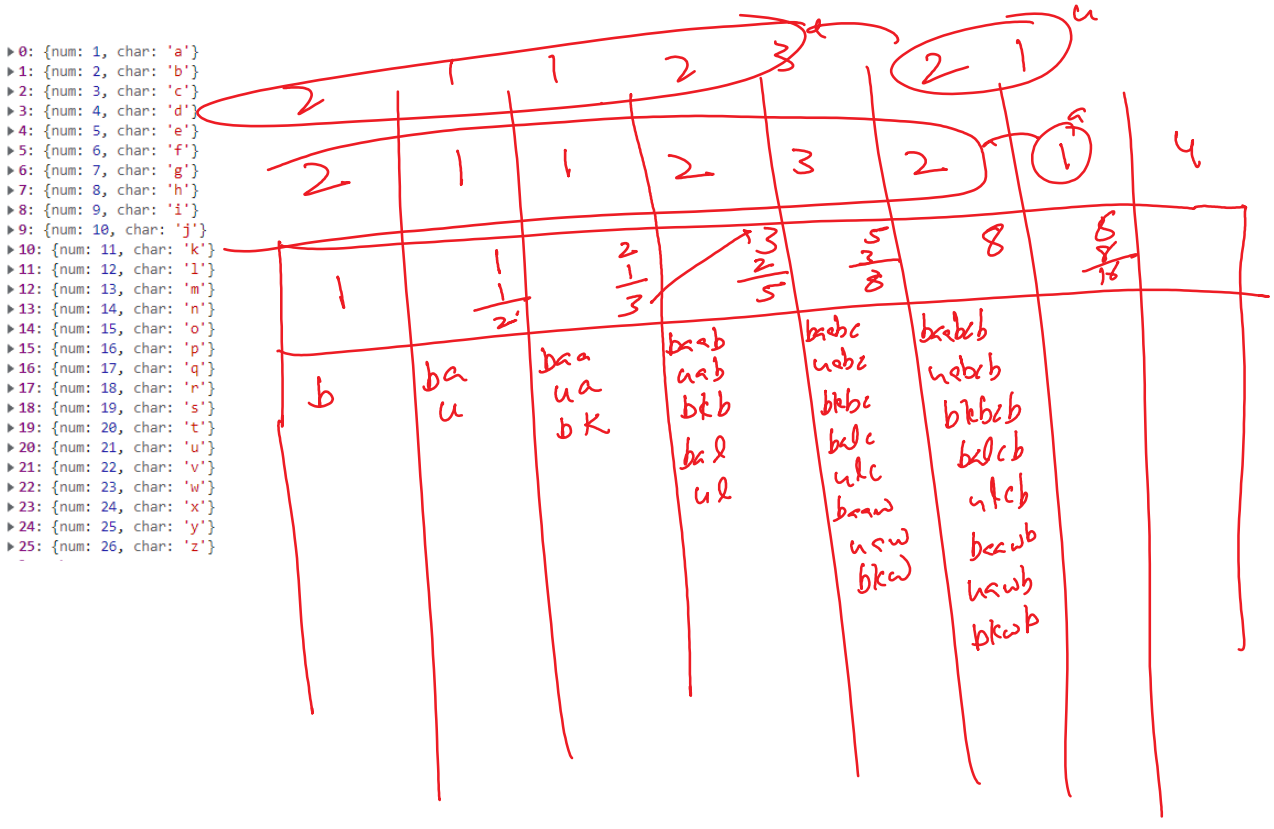
0 1 2 3 4
8

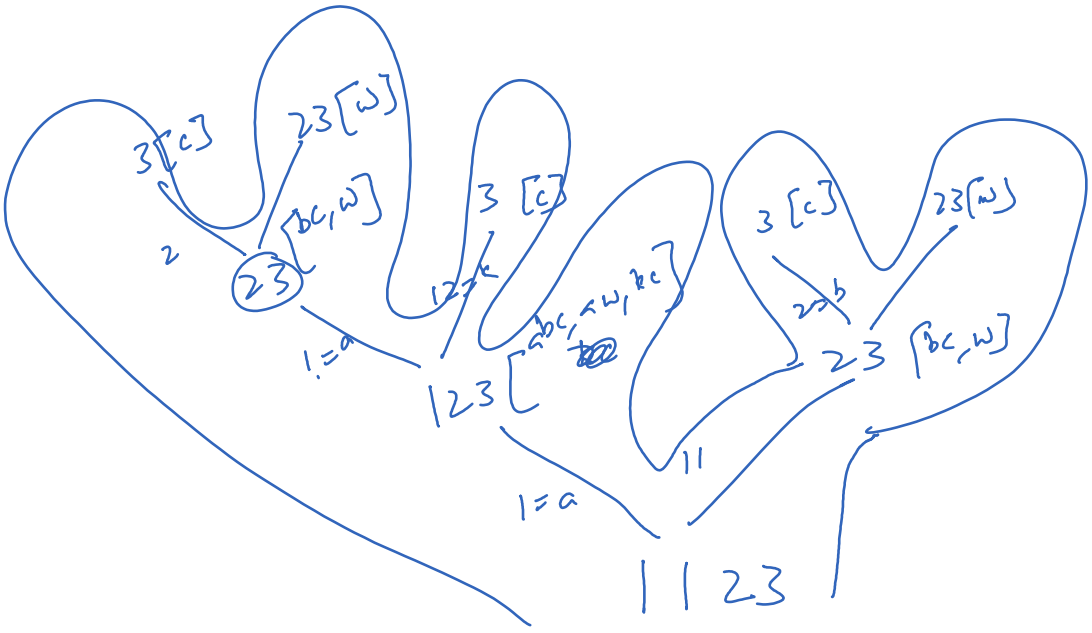


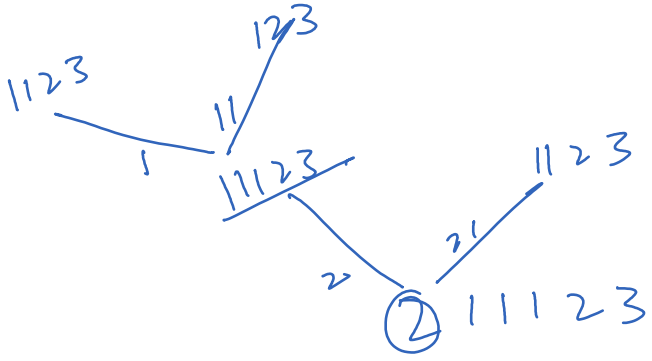

A, B, C
D, E
A
D
1
2
8 ways
8 ways
A
B
B
C
C
E
D
E
D
E
Count Encodings
10:11 to 10:20

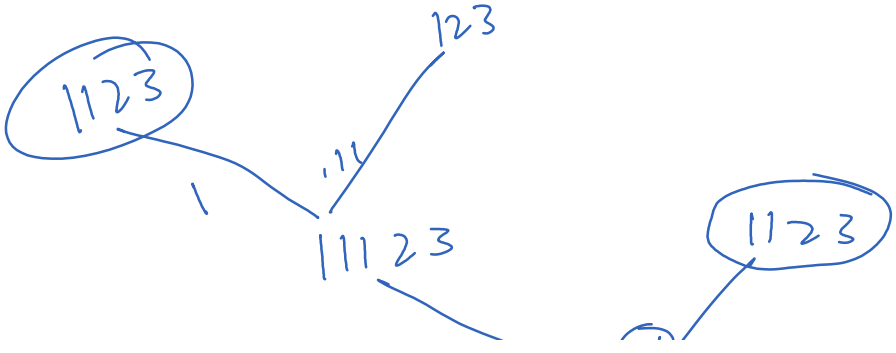
1 1 2 3 6 0 4 1
a 1
b 2
c 3
d 4
e 5
l 1

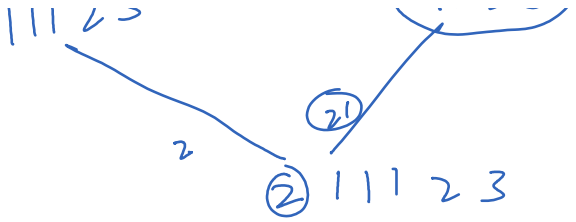


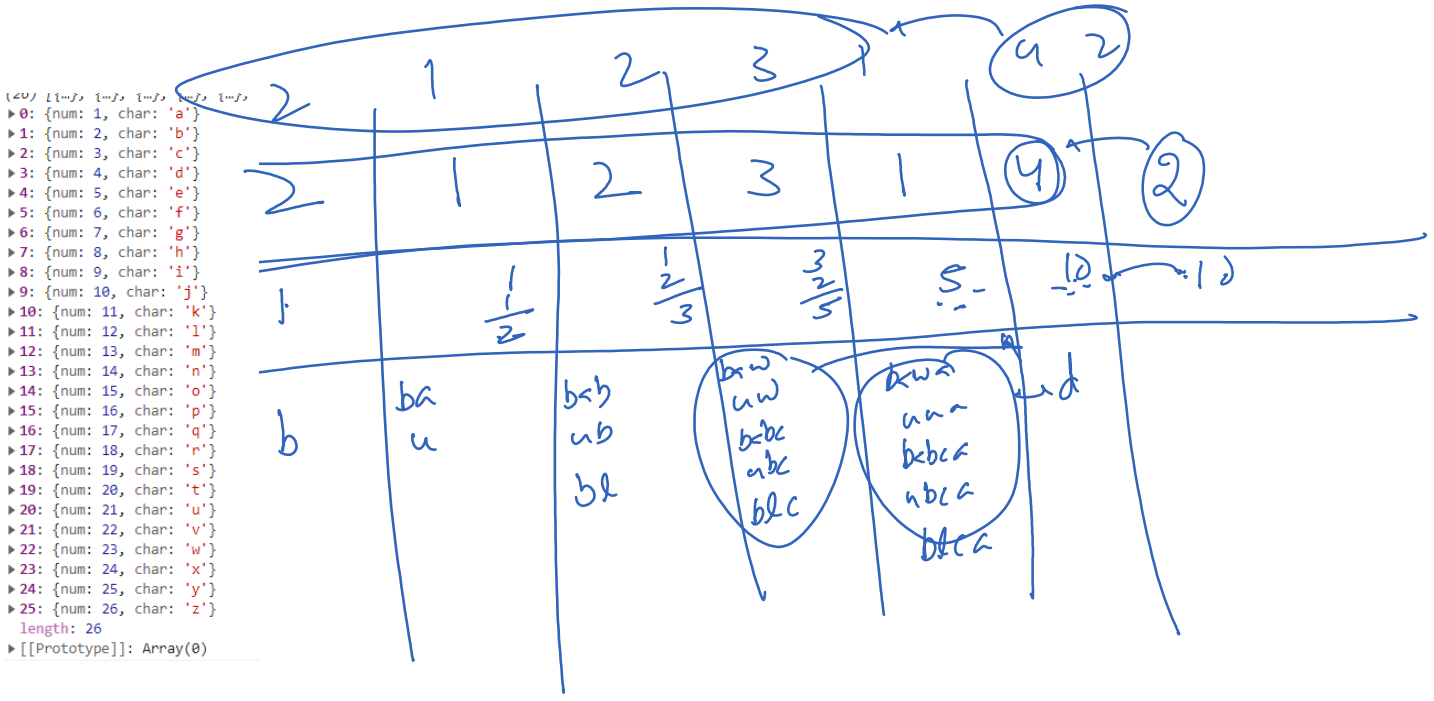

0: {num: 1, char: 'a'}
1: {num: 2, char: 'b'}
2: {num: 3, char: 'c'}
3: {num: 4, char: 'd'}
4: {num: 5, char: 'e'}
5: {num: 6, char: 'f'}
6: {num: 7, char: 'g'}
7: {num: 8, char: 'h'}
8: {num: 9, char: 'i'}
9: {num: 10, char: 'j'}
10: {num: 11, char: 'k'}
11: {num: 12, char: 'l'}
12: {num: 13, char: 'm'}
13: {num: 14, char: 'n'}
14: {num: 15, char: 'o'}
15: {num: 16, char: 'p'}
16: {num: 17, char: 'q'}
17: {num: 18, char: 'r'}
18: {num: 19, char: 's'}
19: {num: 20, char: 't'}
20: {num: 21, char: 'u'}
21: {num: 22, char: 'v'}
22: {num: 23, char: 'w'}
23: {num: 24, char: 'x'}
24: {num: 25, char: 'y'}
25: {num: 26, char: 'z'}

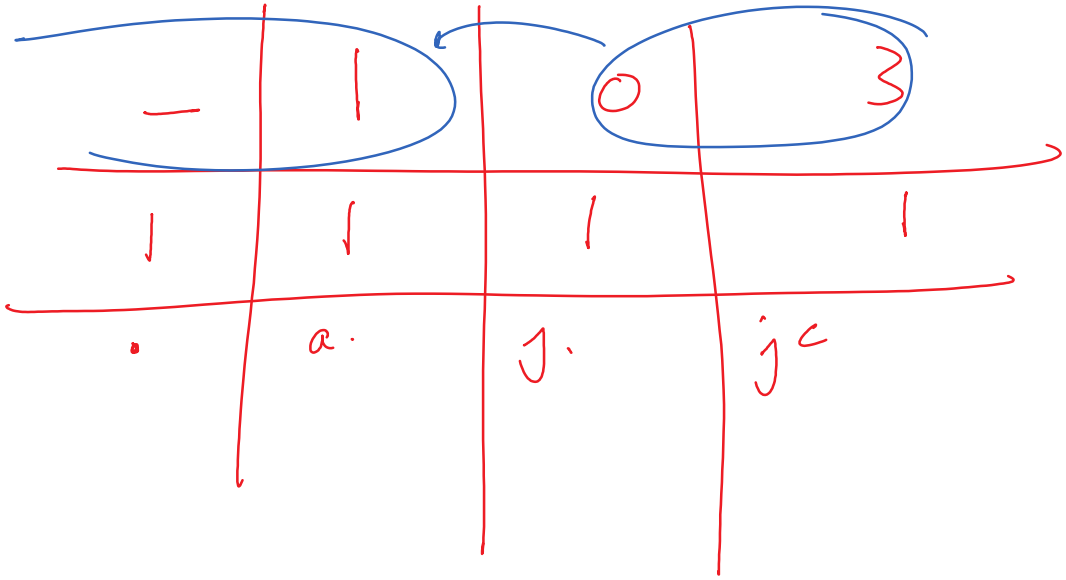

3[c]
23[w]
2
23[bc,w]
3[c]
12=k
1=a
123[abc,aw,bc]
3[c]
23[w]
2=b
23[bc,w]
11
1=a
1123

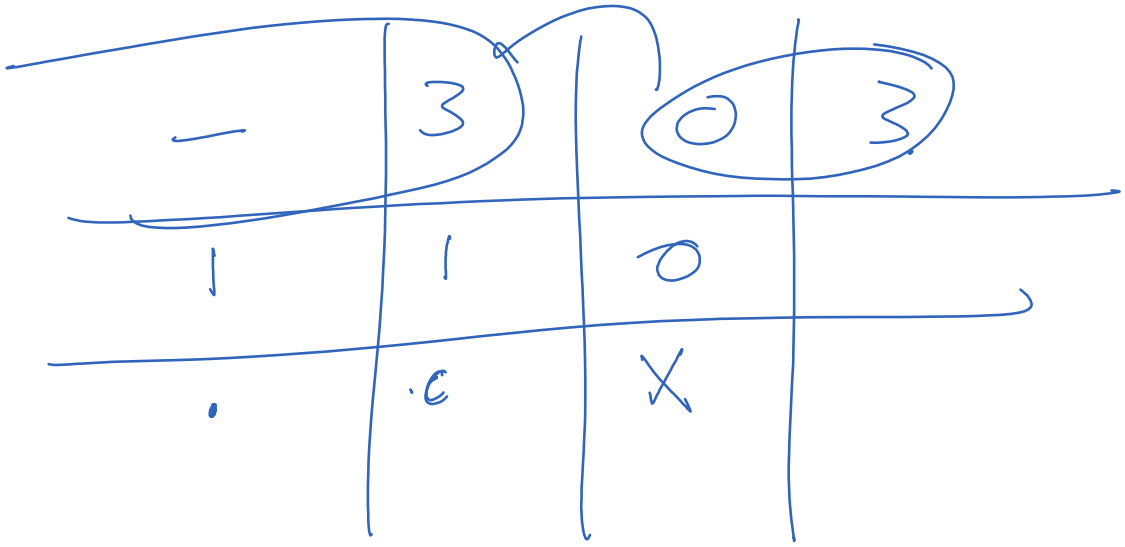

1123
123
11
1
11123
1123
21
2
2 11123


1123
123
11
1
11123
1123




0: {num: 1, char: 'a'}
1: {num: 2, char: 'b'}
2: {num: 3, char: 'c'}
3: {num: 4, char: 'd'}
4: {num: 5, char: 'e'}
5: {num: 6, char: 'f'}
6: {num: 7, char: 'g'}
7: {num: 8, char: 'h'}
8: {num: 9, char: 'i'}
9: {num: 10, char: 'j'}
10: {num: 11, char: 'k'}
11: {num: 12, char: 'l'}
12: {num: 13, char: 'm'}
13: {num: 14, char: 'n'}
14: {num: 15, char: 'o'}
15: {num: 16, char: 'p'}
16: {num: 17, char: 'q'}
17: {num: 18, char: 'r'}
18: {num: 19, char: 's'}
19: {num: 20, char: 't'}
20: {num: 21, char: 'u'}
21: {num: 22, char: 'v'}
22: {num: 23, char: 'w'}
23: {num: 24, char: 'x'}
24: {num: 25, char: 'y'}
25: {num: 26, char: 'z'}
length: 26
[[Prototype]]: Array(0)


0: {num: 1, char: 'a'}
1: {num: 2, char: 'b'}
2: {num: 3, char: 'c'}
3: {num: 4, char: 'd'}
4: {num: 5, char: 'e'}
5: {num: 6, char: 'f'}
6: {num: 7, char: 'g'}
7: {num: 8, char: 'h'}
8: {num: 9, char: 'i'}
9: {num: 10, char: 'j'}
10: {num: 11, char: 'k'}
11: {num: 12, char: 'l'}
12: {num: 13, char: 'm'}
13: {num: 14, char: 'n'}
14: {num: 15, char: 'o'}
15: {num: 16, char: 'p'}
16: {num: 17, char: 'q'}
17: {num: 18, char: 'r'}
18: {num: 19, char: 's'}
19: {num: 20, char: 't'}
20: {num: 21, char: 'u'}
21: {num: 22, char: 'v'}
22: {num: 23, char: 'w'}
23: {num: 24, char: 'x'}
24: {num: 25, char: 'y'}
25: {num: 26, char: 'z'}
length: 26



12

10

90.

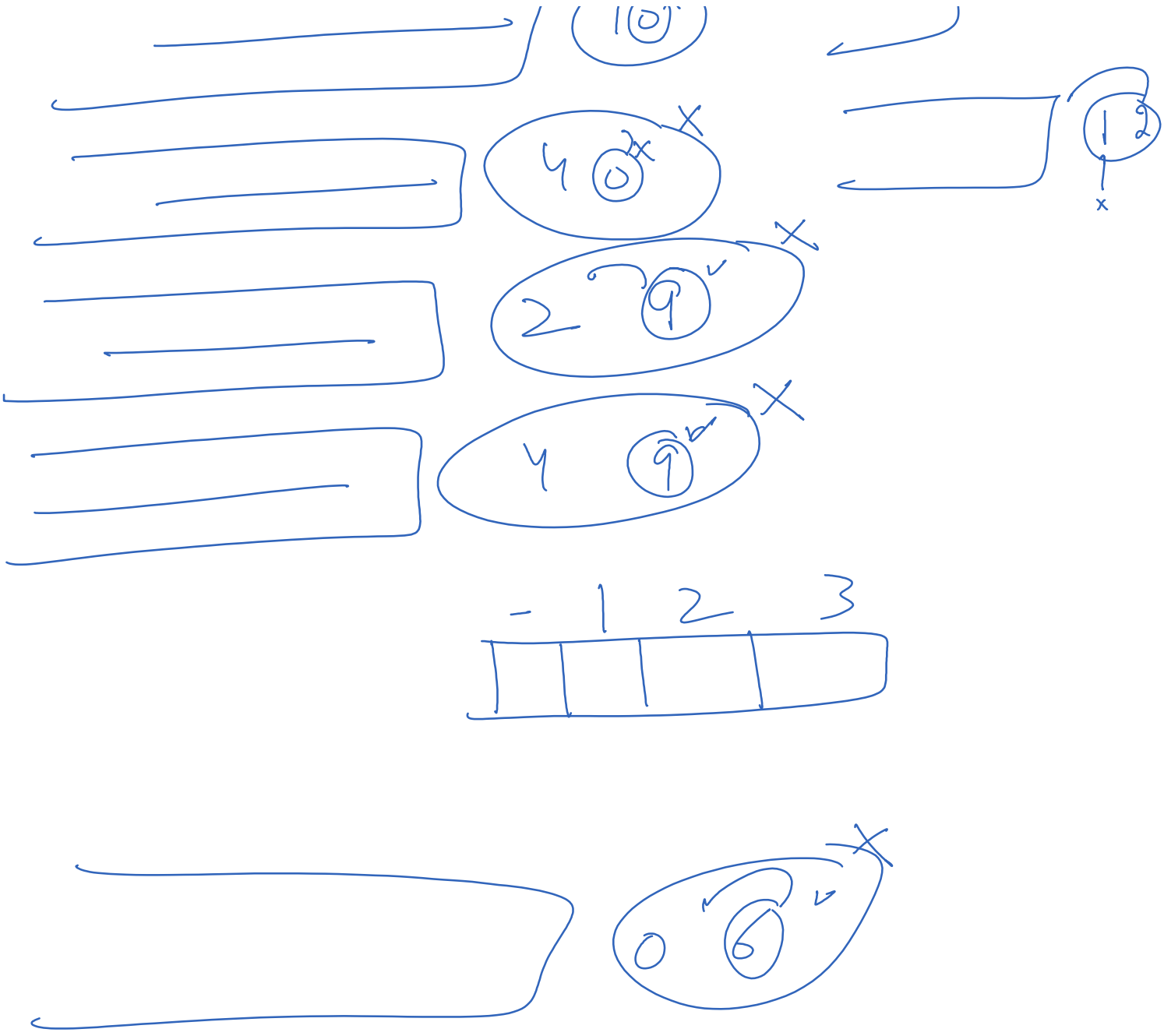
3?

12

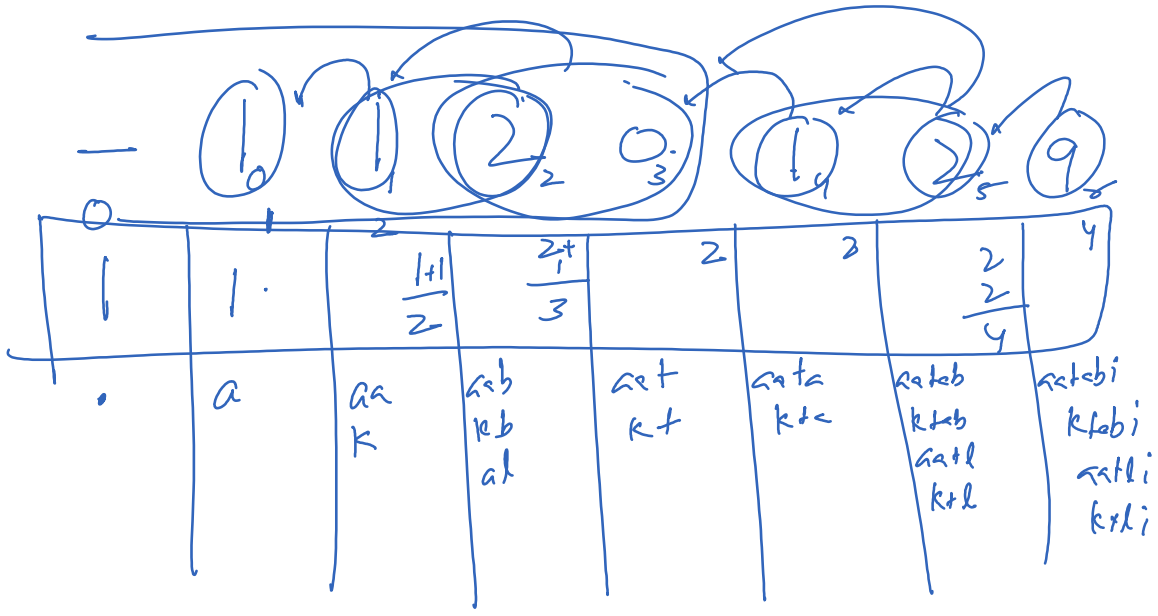
12

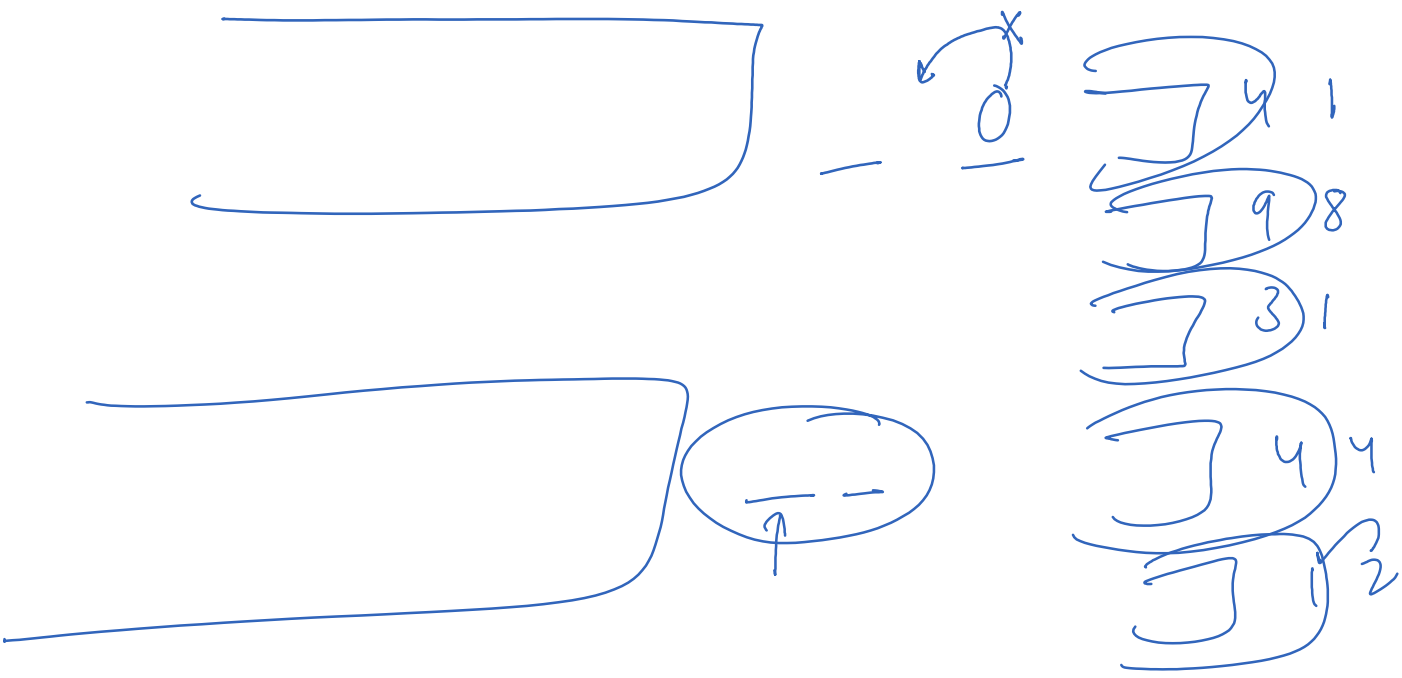
10

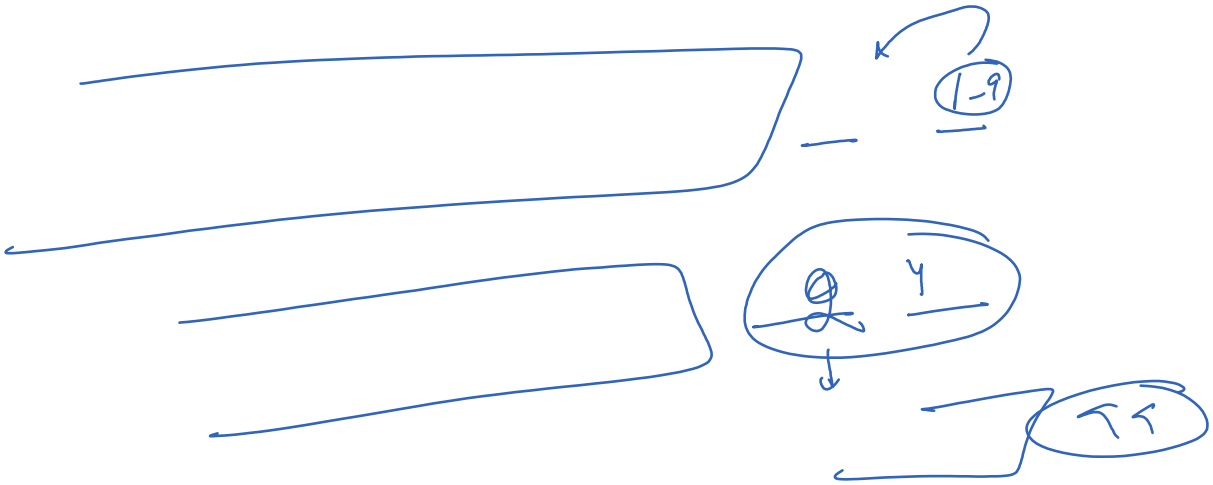
10

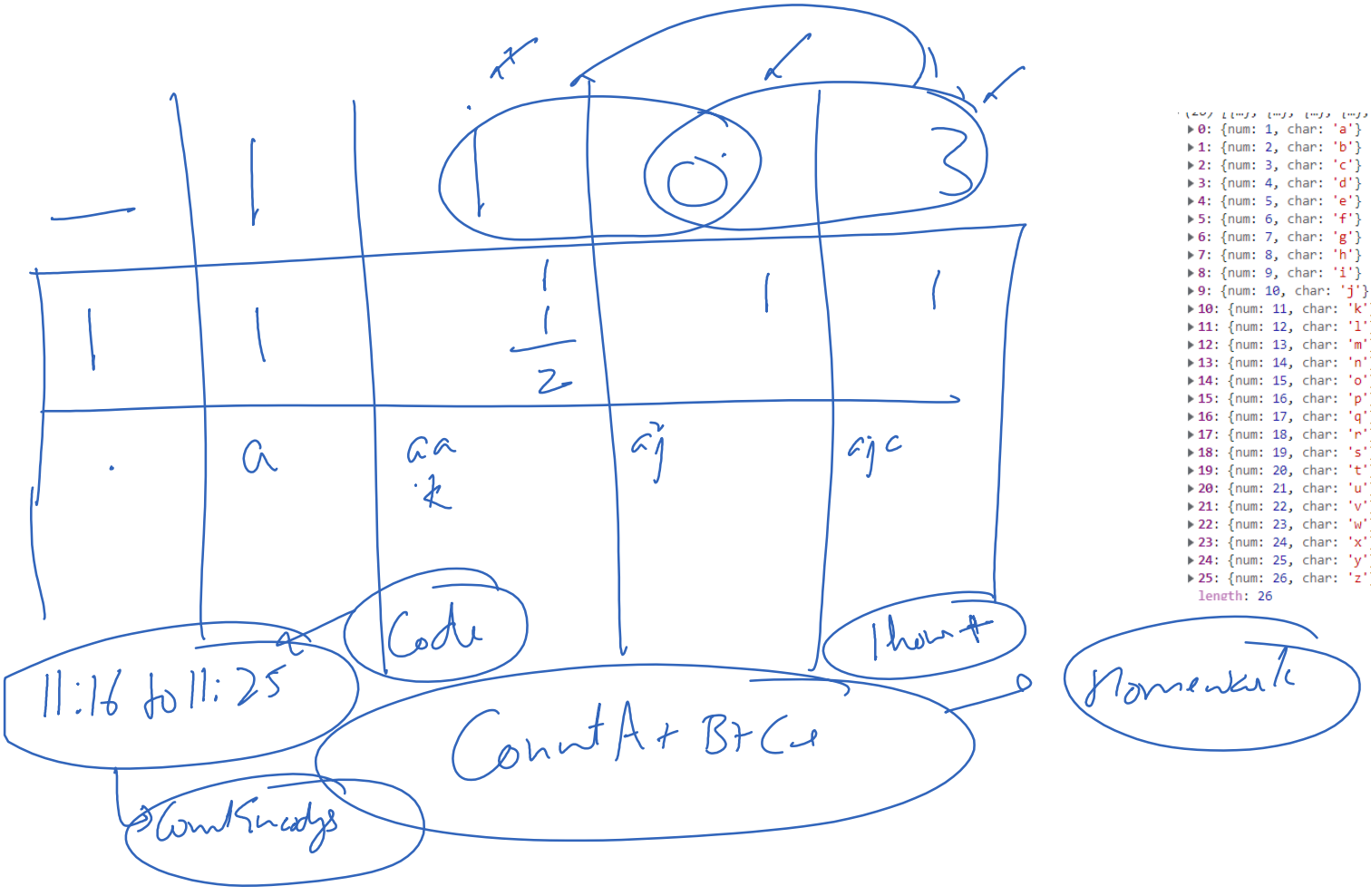

1 0
4 0
2 9
4 9
1 2
x
- 1 2 3
0 6

```
▸ 0: {num: 1, char: 'a'}
▸ 1: {num: 2, char: 'b'}
▸ 2: {num: 3, char: 'c'}
▸ 3: {num: 4, char: 'd'}
▸ 4: {num: 5, char: 'e'}
▸ 5: {num: 6, char: 'f'}
▸ 6: {num: 7, char: 'g'}
▸ 7: {num: 8, char: 'h'}
▸ 8: {num: 9, char: 'i'}
▸ 9: {num: 10, char: 'j'}
▸ 10: {num: 11, char: 'k'}
▸ 11: {num: 12, char: 'l'}
▸ 12: {num: 13, char: 'm'}
▸ 13: {num: 14, char: 'n'}
▸ 14: {num: 15, char: 'o'}
▸ 15: {num: 16, char: 'p'}
▸ 16: {num: 17, char: 'q'}
▸ 17: {num: 18, char: 'r'}
▸ 18: {num: 19, char: 's'}
▸ 19: {num: 20, char: 't'}
▸ 20: {num: 21, char: 'u'}
▸ 21: {num: 22, char: 'v'}
▸ 22: {num: 23, char: 'w'}
▸ 23: {num: 24, char: 'x'}
▸ 24: {num: 25, char: 'y'}
▸ 25: {num: 26, char: 'z'}
  length: 26
```

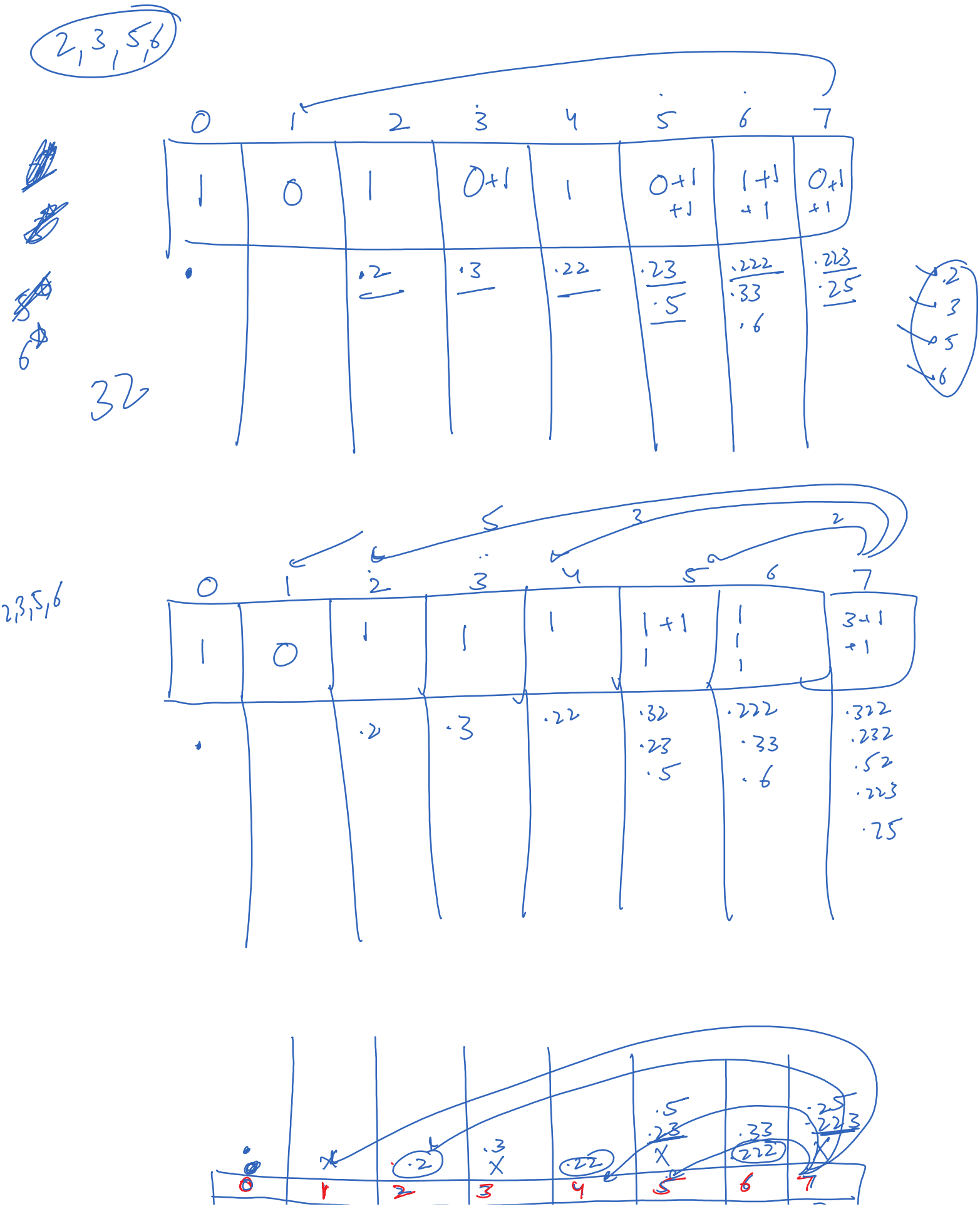


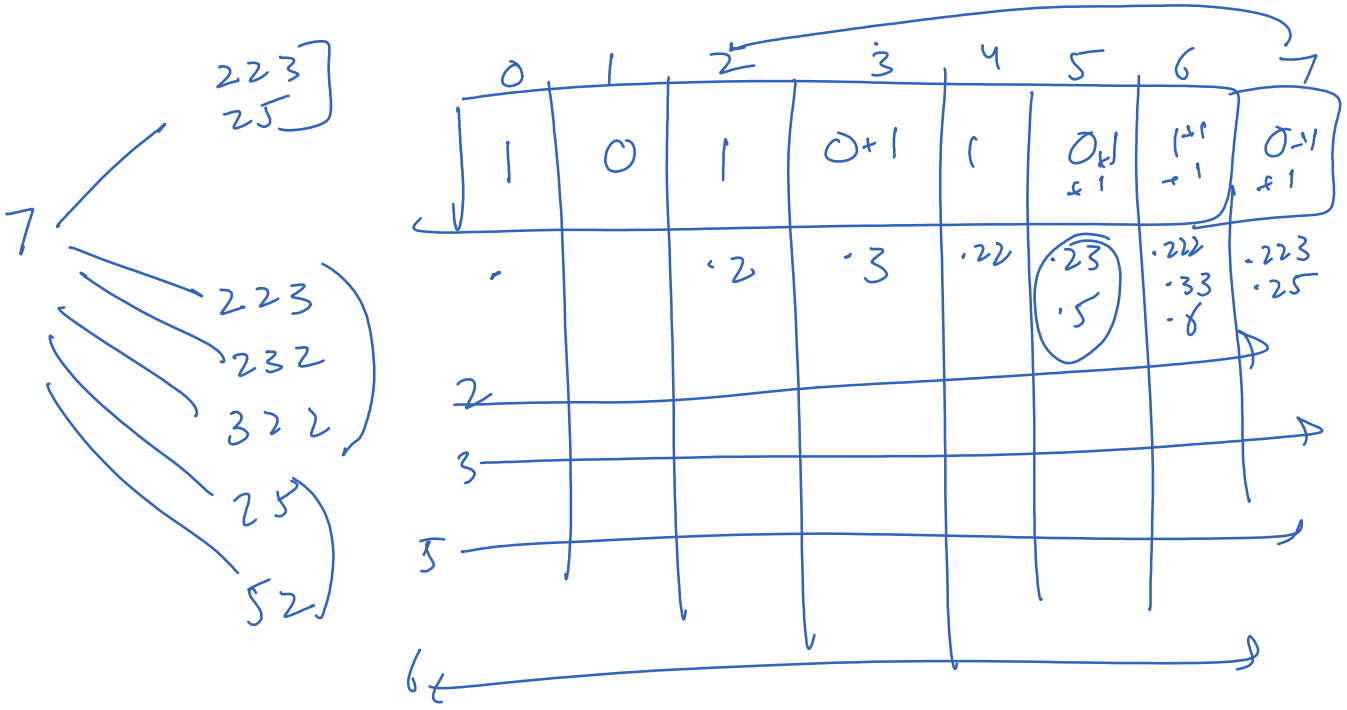


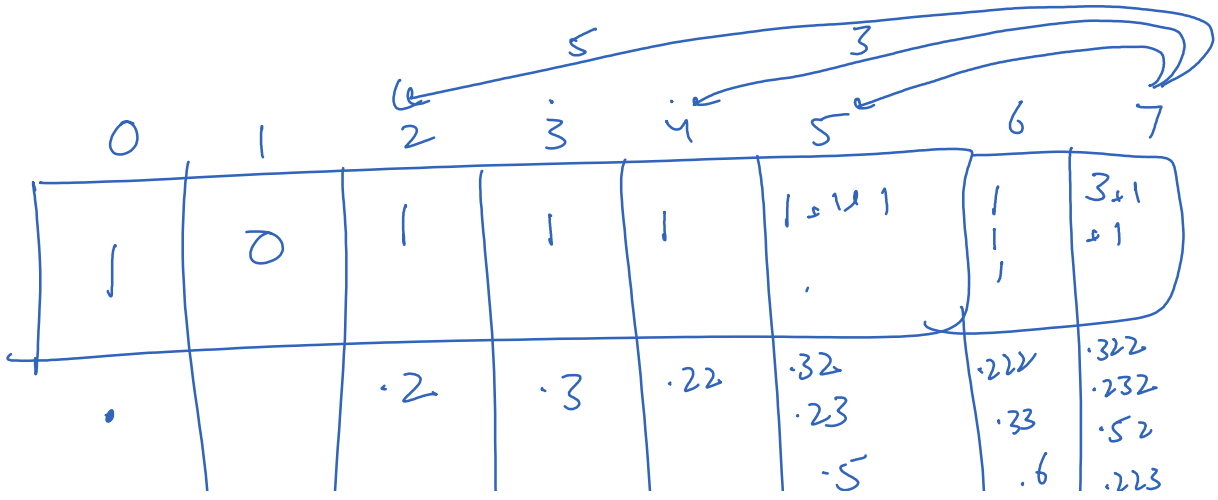


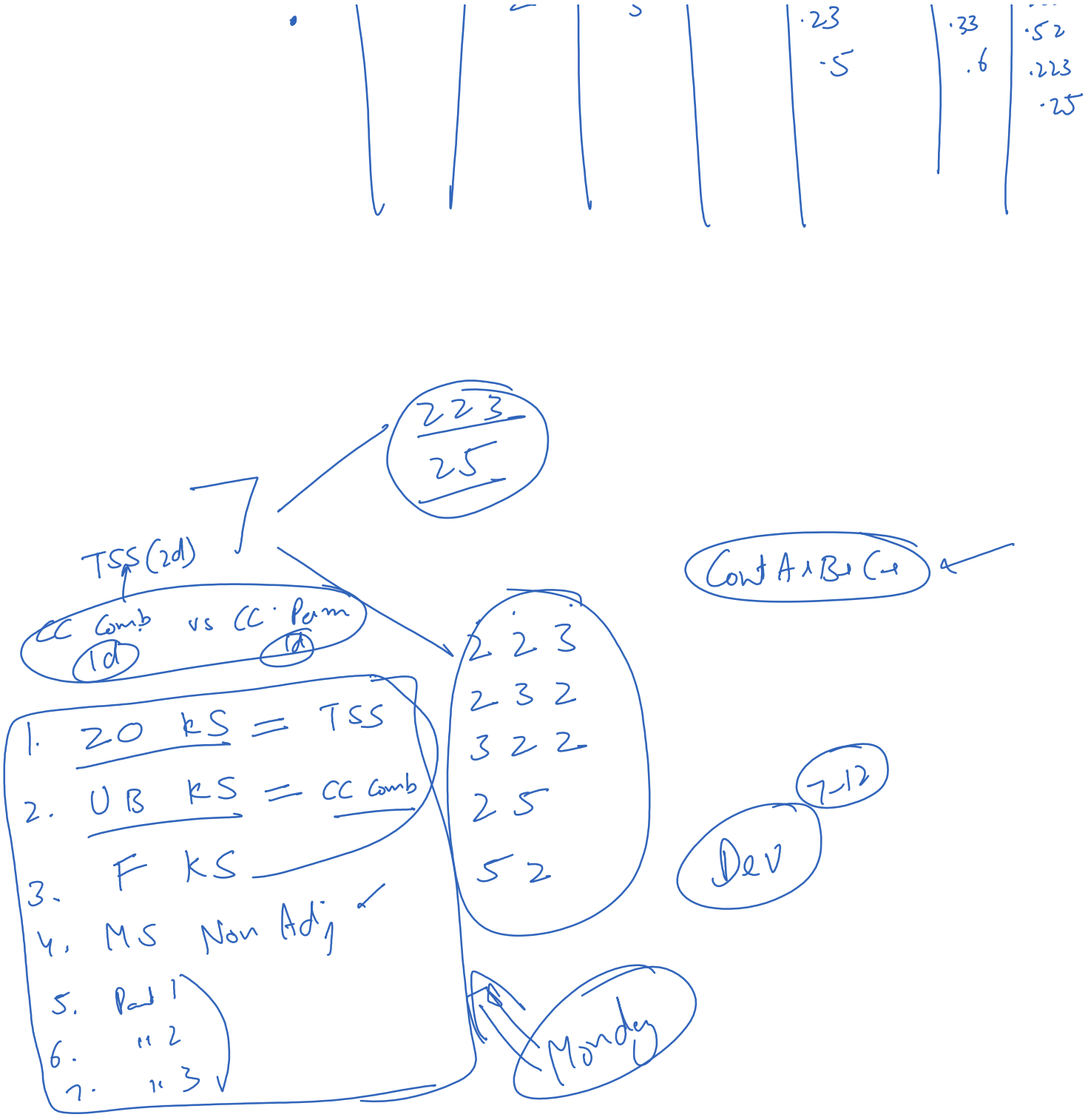


▶ 0: {num: 1, char: 'a'}
▶ 1: {num: 2, char: 'b'}
▶ 2: {num: 3, char: 'c'}
▶ 3: {num: 4, char: 'd'}
▶ 4: {num: 5, char: 'e'}
▶ 5: {num: 6, char: 'f'}
▶ 6: {num: 7, char: 'g'}
▶ 7: {num: 8, char: 'h'}
▶ 8: {num: 9, char: 'i'}
▶ 9: {num: 10, char: 'j'}
▶ 10: {num: 11, char: 'k'}
▶ 11: {num: 12, char: 'l'}
▶ 12: {num: 13, char: 'm'}
▶ 13: {num: 14, char: 'n'}
▶ 14: {num: 15, char: 'o'}
▶ 15: {num: 16, char: 'p'}
▶ 16: {num: 17, char: 'q'}
▶ 17: {num: 18, char: 'r'}
▶ 18: {num: 19, char: 's'}
▶ 19: {num: 20, char: 't'}
▶ 20: {num: 21, char: 'u'}
▶ 21: {num: 22, char: 'v'}
▶ 22: {num: 23, char: 'w'}
▶ 23: {num: 24, char: 'x'}
▶ 24: {num: 25, char: 'y'}
▶ 25: {num: 26, char: 'z'}
length: 26


2,3,5,6
0 1 2 3 4 5 6 7
1 0 1 0+1 1 0+1 +1 1+1 +1 0+1 +1
.2 .3 .22 .23 .5 .222 .33 .6 .223 .25
32
2,3,5,6
0 1 2 3 4 5 6 7
1 0 1 1 1 1+1 1 1 1 3+1 +1
.2 .3 .22 .32 .23 .5 .222 .33 .6 .322 .232 .52 .223 .25
.5 .23 .3 .2 .22 .33 .222 .25 .223






.23
.5
.33
.6
.52
.223
.25
223
25
TSS (2d)
CC Comb vs CC Perm
1d
1d
Cont A, B, C
223
232
322
25
52
1. 20 KS = TSS
2. UB KS = CC Comb
3. F KS
4. MS Non Adj
5. Part 1
6. " 2
7. " 3
7-12
Dev
Monday