

→ Naive Pattern Matching  
→ Rabin - Karp  
→ Z - Algorithm  
→ KMP Algorithm

→ NFA DFA automata  
→ Aho - Corasick

[20 pat]   
 [1 text]

Q

Prefix number

given a no.

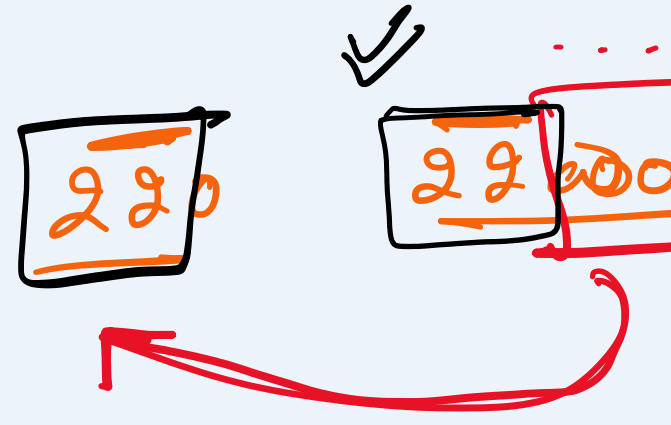
220

denote a & b

$$\frac{b}{10^p} = a \quad p \geq 0$$

Eg: 220   
 a=2 b=20   
 count = 1   
  $\frac{20}{10^1} = 2$

Eg: 2202200   
 a=220 b=2200   
 count = 2   
  $b = \frac{2200}{10^1} = 220$    
  $p=1$

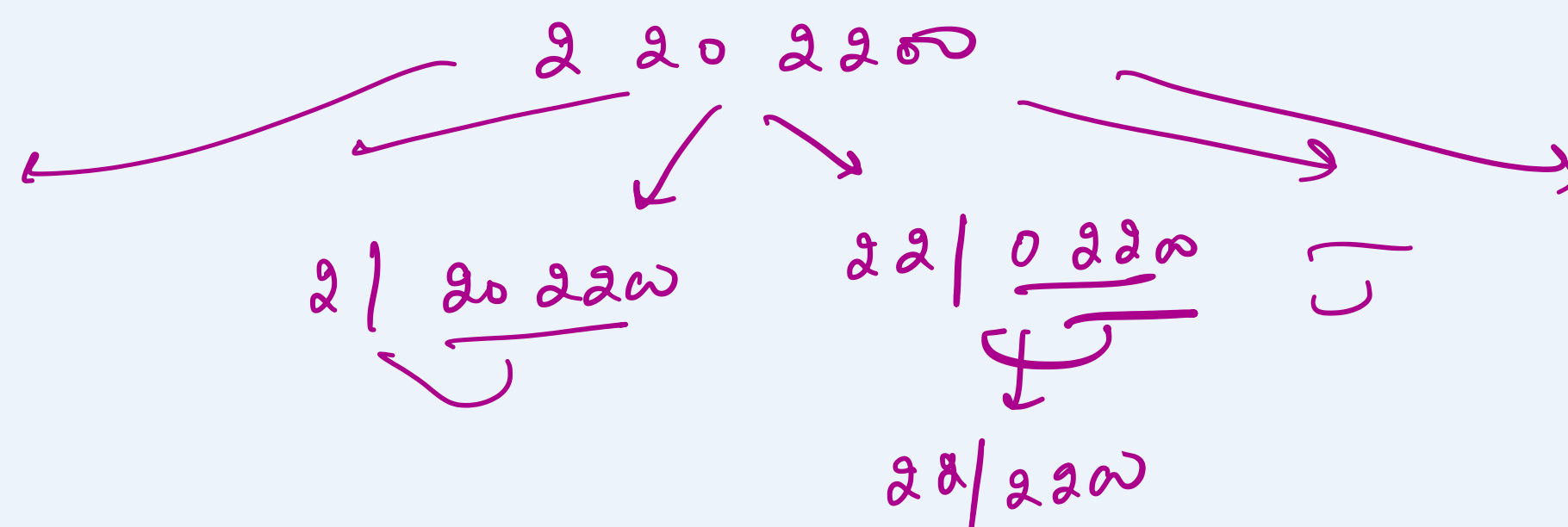


a=2 b=20200   
  $b = \frac{20200}{10^5} = 2.02$

- 1  $1 \leq \text{no. of digits} \leq 10^5$
- 2  $\lfloor \rfloor$  division
- 3 a & b X leading zeroes

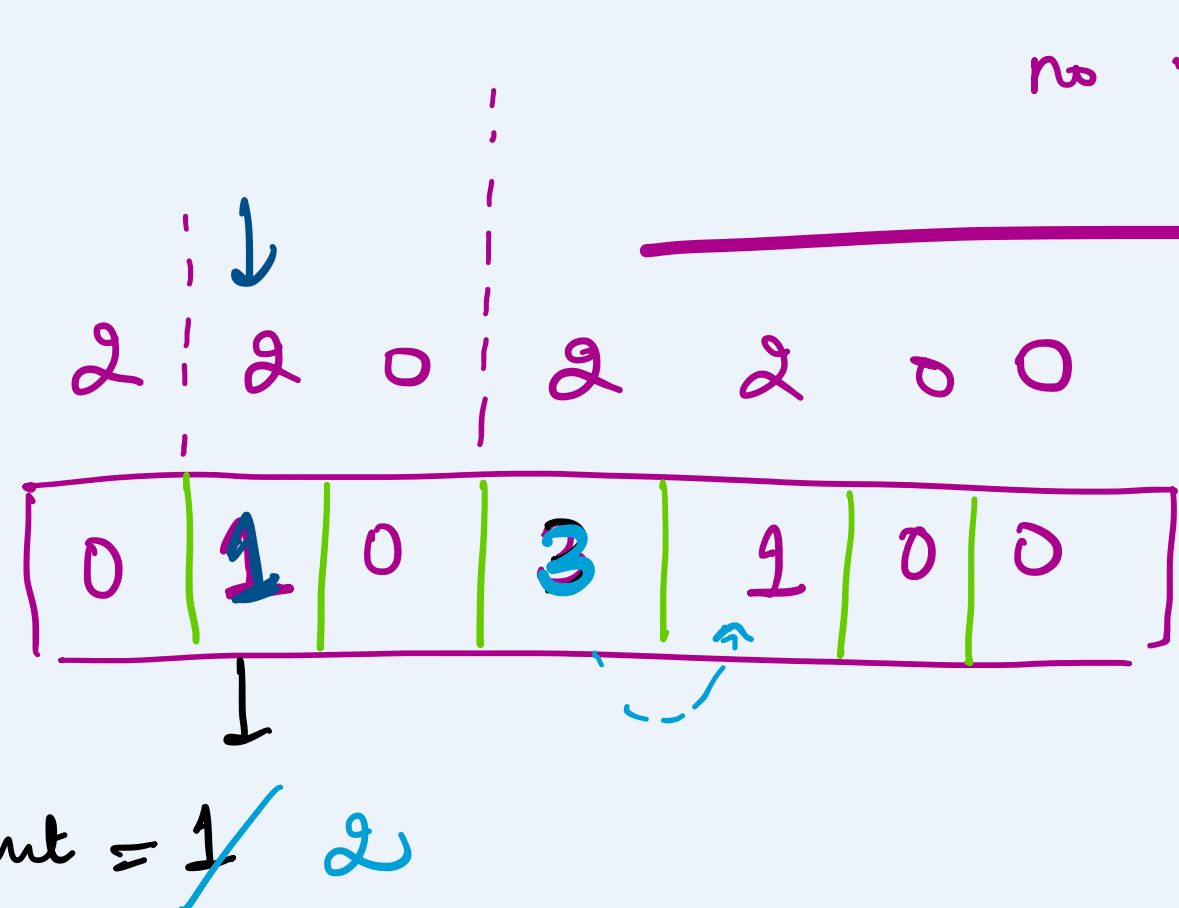
5 → 10<sup>k</sup>

store → string



Z - Algorithms

①

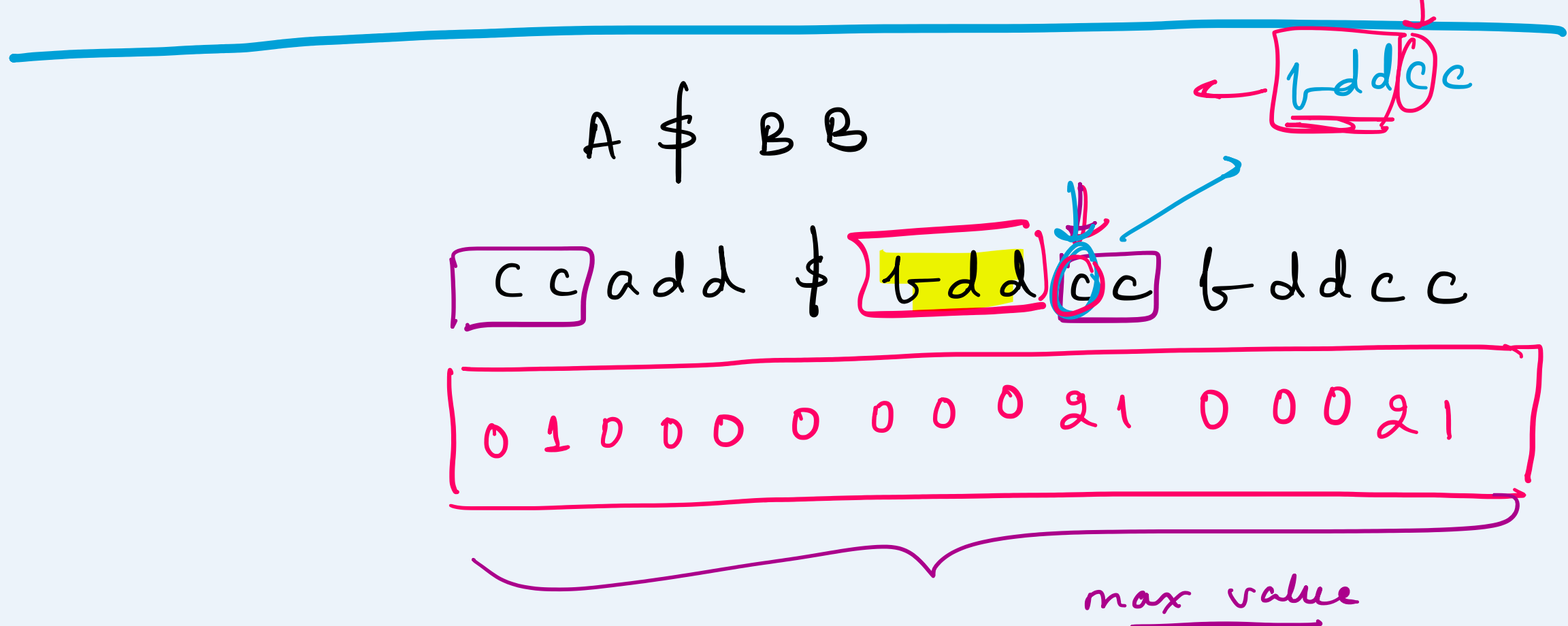


$p \geq 0$    
 no. of digit (a) = x   
 no. of digit (b) < x   
  $\frac{2202}{10^2} = 22.02$

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

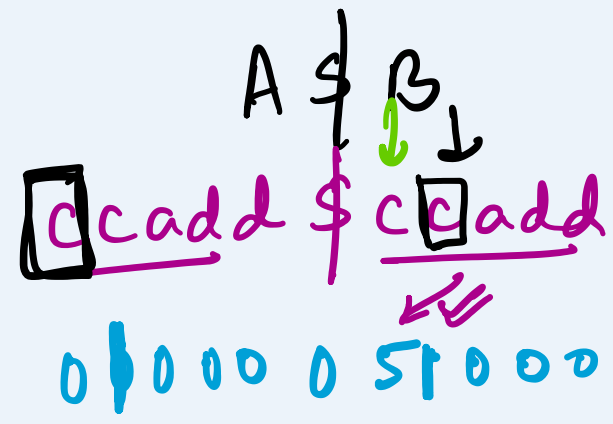
count = 3

a = 2   
 b = 22222   
 a = 22   
 b = 2222   
 c = 222   
 d = 222



total 1-2   
 ③

ccadd



A → ccaddcc

mkklecca

A & B   
 ccaddcc & dkklecca

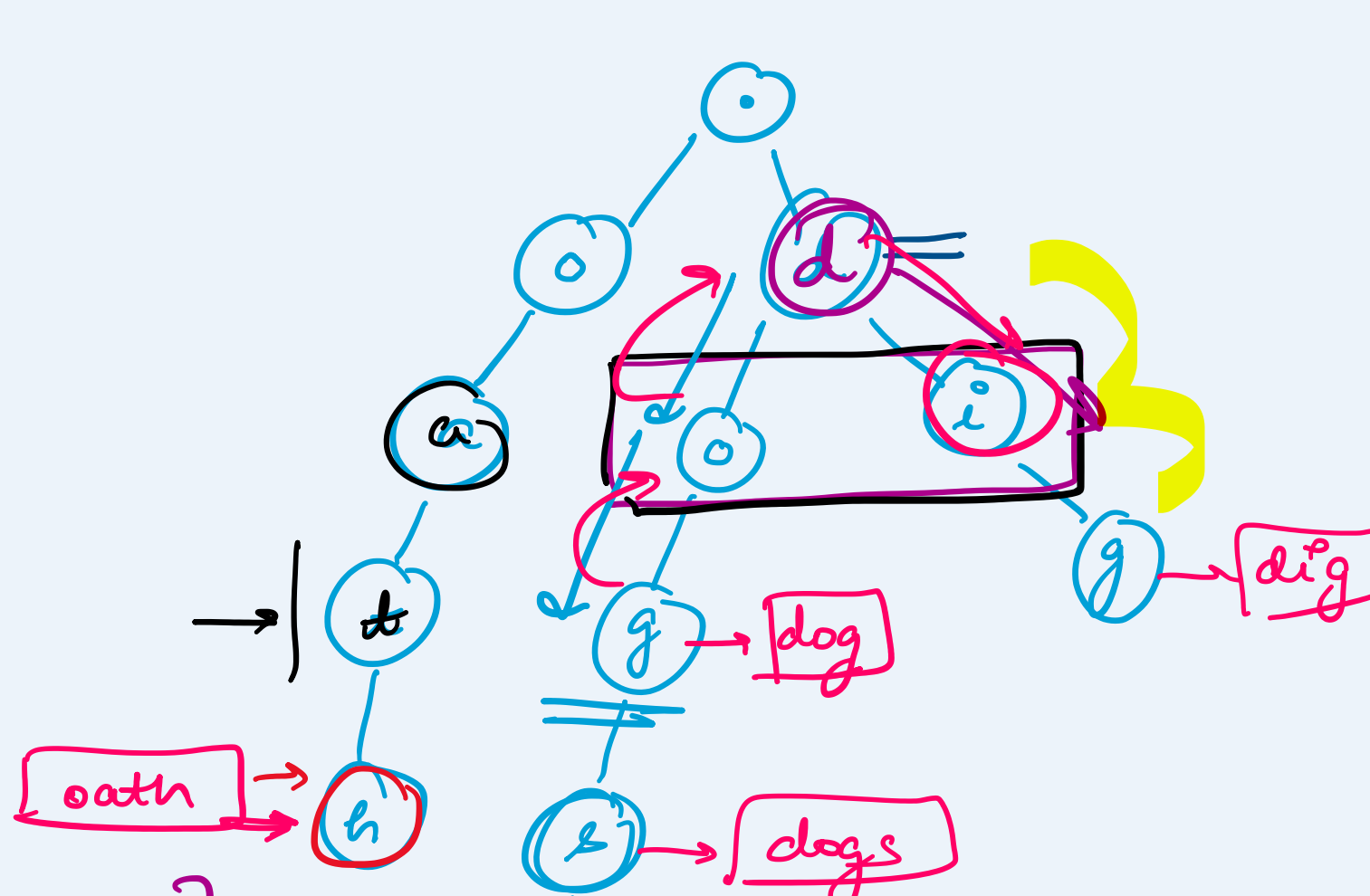
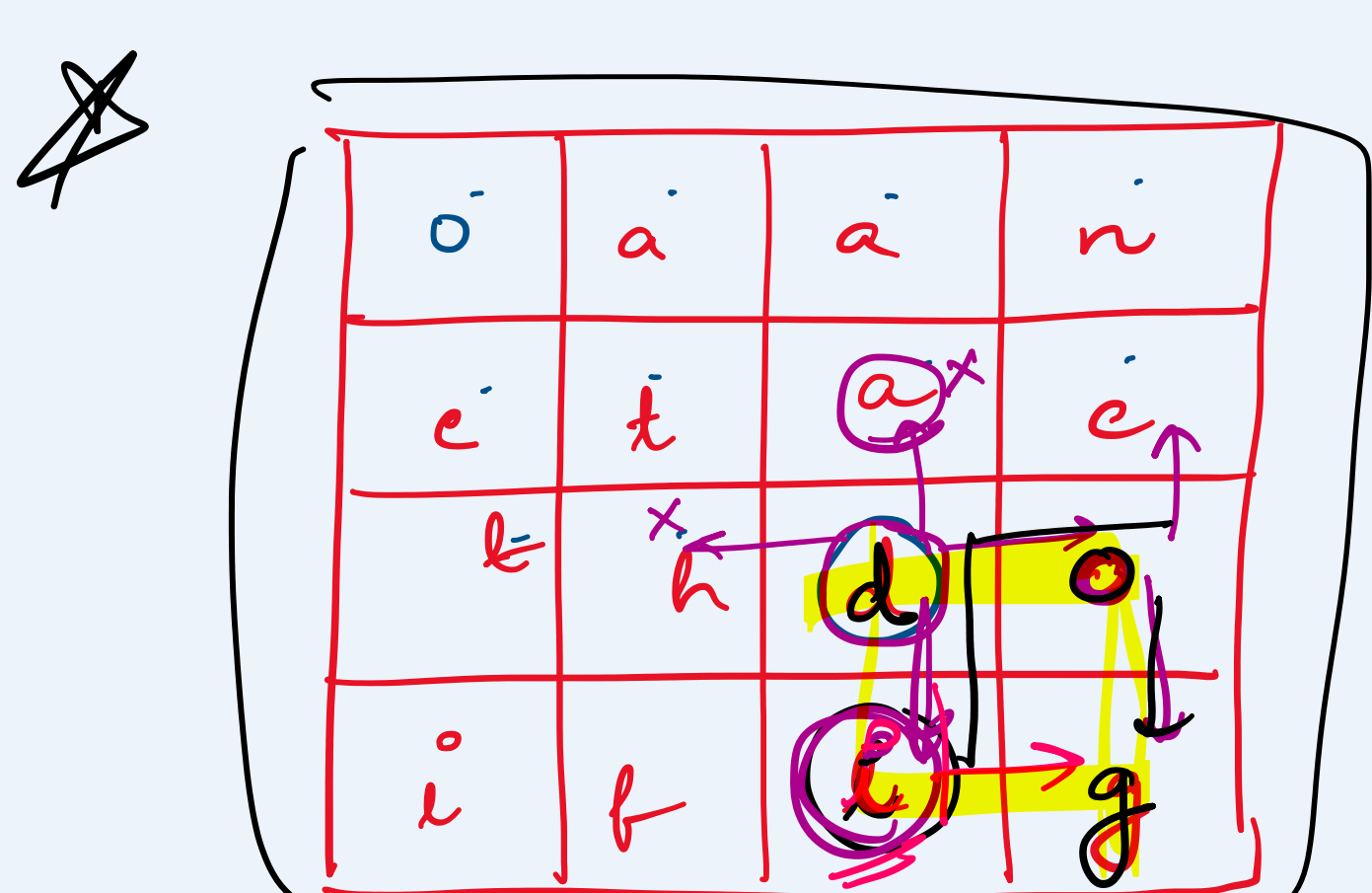
0 1 0 0 0 0 0 0 0 0 3 0

A ccadd B addcc   
 0 1 0 0 0 0 0 0 2 1

5-2 = 3   
 ② - ③

KMP

A & B xx   
 A & BB ✓



[oath, dig, dog, dogs]

output → [oath, pea]