

## K Anagrams

$$k = 3$$

$S_1: \quad a \ b \ a \ a \ c \ b \ d \ c \ b$

a3      b3      c2      d1

s2 :      a a a ~~a~~ ~~a~~ b b b ~~b~~  
                c c                 d

$$\begin{array}{cccc} - & \cancel{a_5} & \cancel{b_4} & \cancel{c_0} & \cancel{d_0} \\ & a_3 & b_3 & c_2 & d_1 \\ \hline & -2 & -1 & 2 & 1 \end{array}$$

$a_1 \rightarrow$  freq. of  $a$  in first st.  
 $\Delta = (a_1 - a_2) + (b_1 - b_2) + \dots + (z_1 - z_2)$   
 $= (a_1 + b_1 + c_1 + \dots + z_1) - (a_2 + b_2 + \dots + z_2)$

$a_2 \rightarrow$  freq. of  $a$  in second string  $s_2$ .  
 $= 0$

$a_2$  - freq. of  $a$  in

Second string s2.

s1:        a a a a a b b b b

s2;        a b a a c b d c b

a - ~~5~~ ~~4~~ 2

b - ~~4~~ ~~3~~ 1

c - (-2)

d - (-1)

## Group Anagrams

5

pepcoding codingpep pepper rapper repepp

key vs value

fmap

vs

$AL < string >$

↳ Hashmap  $\rightarrow$  equals, hashCode

for a class to be used key  $\rightarrow$  equals, hashCode

Class :

(i) equals

(ii) hashCode

(iii) compareTo

(iv) toString

5

pepcoding codingpep pepper rapper repepp

[ [pepcoding, codingpep],  
 [pepper, repepp],  
 [rapper]  
]

Fmap vs Ad <string>

p-2  
e-1  
c-1  
o-1  
d-1  
-1  
g-1  
n-1

→

pepcoding, codingpep

p-3  
e-2  
r-1

→

pepper, repepp

r-1  
a-1  
p-2  
e-1

→

rapper

# Group Shifted String

9

acd dfg wyz yab mop bdfh a x moqs

acd dfg mop wyz yab

a x

bdfh moqs

2  
a c d  $\rightarrow 2 @ 1$

d f g  $\rightarrow 2 @ 1$

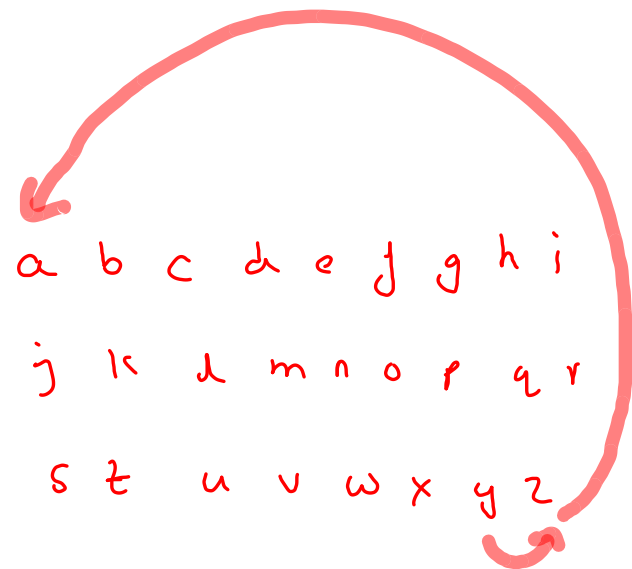
m o p  $\rightarrow 2 @ 1$

w y z = 2 @ 1

-24  
y a b = -24 @ 1

||

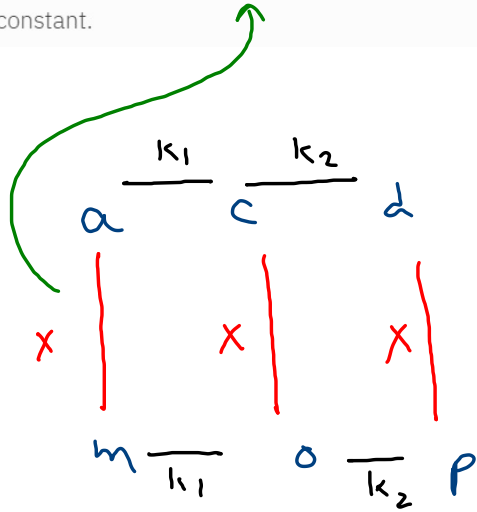
(-24 + 26)  $\rightarrow 2$



3. Two strings s1 and s2 are shifted if -

-> Length of both the strings is the same.

-> The difference between ASCII values of every character of s1 and s2 is constant.

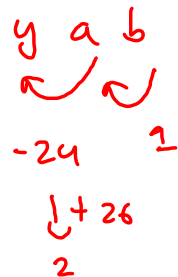
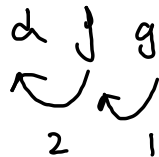
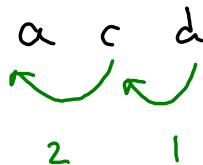


$$c - a = k_1$$

$$o - m = (c + x) - (a + x) = c - a = k_1$$

9

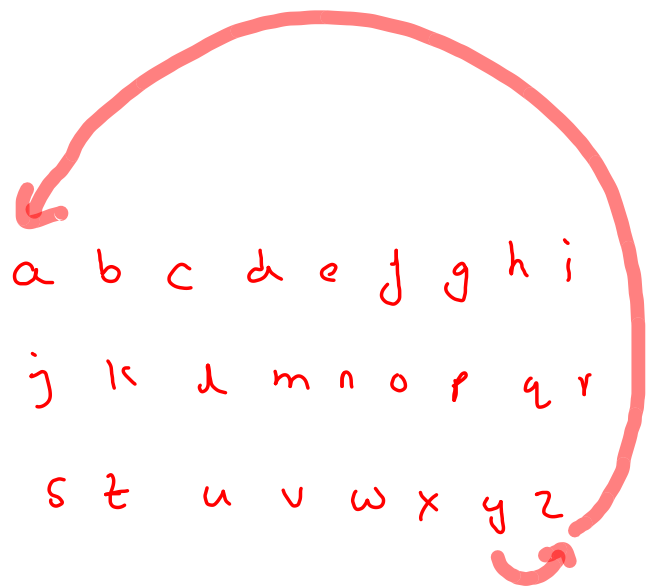
acd dfg wyz yab mop bdfh a x moqs



2@1 → acd, dfg, wyz, yab, mop

2@2@2 → bdfh, moqs

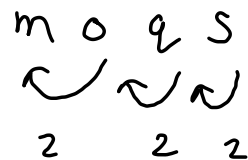
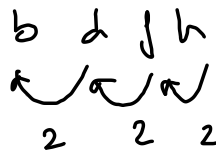
→ a, x



a b c d e f g h i

j k l m n o p q r

s t u v w x y z



## Word Pattern

abab  
pep coding pep coding

one on one mapping

a b a b  
↓ ↓ ↓ ↓  
pep coding pep coding

char vs string

a - pep

b - coding

hs

pep
coding



a      b      c      b

pep      coding      pep      coding

char vs string

a - pep  
b - coding

return false

hs

pep
coding

a      b      a      b      a  
pep   coding   pep   coding   tea

char vs string

a - pep

b - coding

return false

hs

pep  
coding

## Isomorphic Strings

pepcoding  
sosherlok

p e p c o d i n g  
| | | | | | |  
s o s h e r l o k

*Handwritten red arrow pointing to the 'n' in 'ding' with the word 'false' written next to it.*

char vs char

p-s

e-o

c-h

o-e

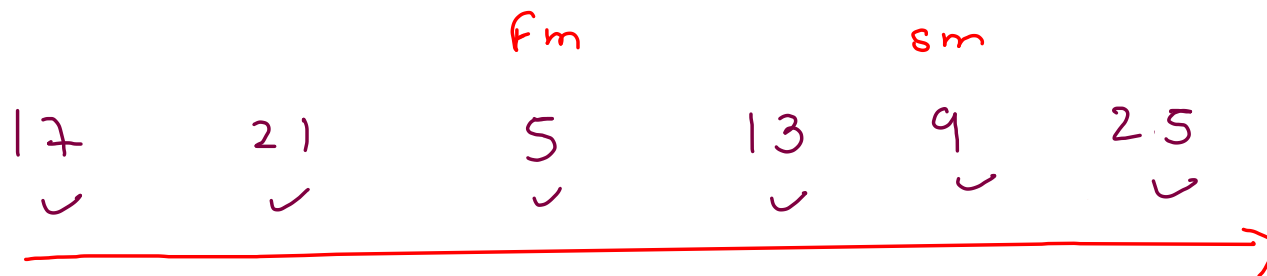
d-r

i-u

hs

r	s
e	o
d	h

## 1502. Can Make Arithmetic Progression From Sequence



$$cd = s_m - f_m;$$

$$5 + 0$$

$$5 + 4 = 9$$

$$9 + 4 = 13$$

$$13 + 4 = 17$$

$$17 + 4 = 21$$

$$21 + 4 = 25$$