


# Isogramic String (22 July)

a = m a c h i n e

m - 1  
a - 1  
c - 1  
h - 1  
i - 1  
n - 1  
e - 1



→ occurs 1 time → isogram

Sh = machine

$m-1$   
 $\boxed{a-2} \rightarrow \text{isogram } X$

$c-1$

$h-1$

$j-1$

$n-1$

$e-1$

0 1 2 3 4 5 6

Str = m a c h i n e

freq map

m - 1 ←

a - 1 ←

c - 1 ← all the char is 1 time

h - 1 ←

i - 1 ←

n - 1 ←

e - 1 ←

0 1 2 3 4 5 6  
 Str = m a c h i n e

① Sorting  $\rightarrow$

i      j  
 ↓      ↓

str = a c e h i m n

$ch_i == ch_j \rightarrow \text{return F}$   
 $ch_i \neq ch_j \rightarrow i++ j++$

algo cost = one char

Time - Sorting =  $n \log n$   
 Iterations =  $n$

$$\Rightarrow (n \log n + n) = O(n \log n)$$

str = m a a c h i n e

↓ sort

i i

↓ ↓

a a c e h i m n

$ch[i] = ch[j] \rightarrow \text{True}$

↓

~~False~~

not isogram

$M^2$

str =

$\downarrow \quad \downarrow$   
a b c a b c  
└──────────┘

Ch<sub>i</sub> └──┐

Brute  
Force  
└

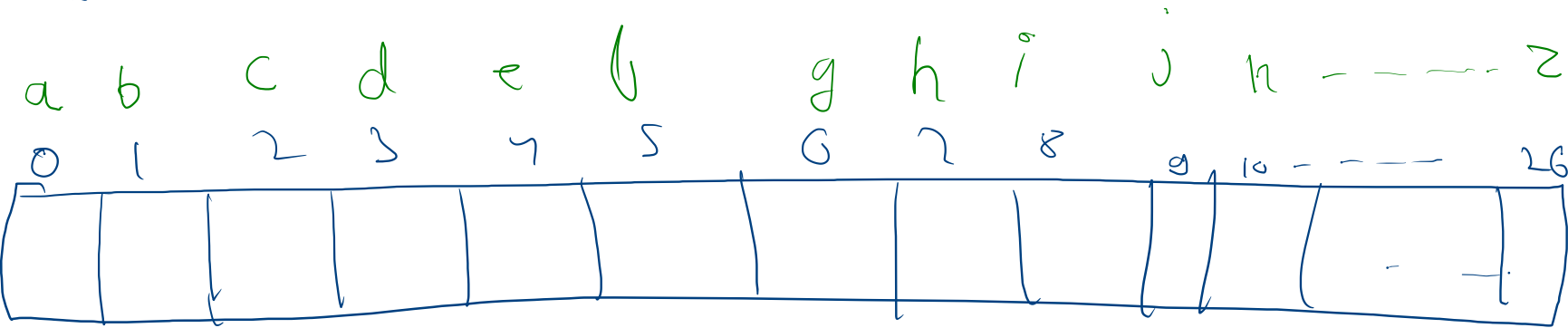
max  
time

$n^2$   $\Rightarrow$  Time

→ only lower alphabets

m3 freq nob

arr → ind → [26]



ASCII

$$a \rightarrow 97 - (10^9) = 0$$

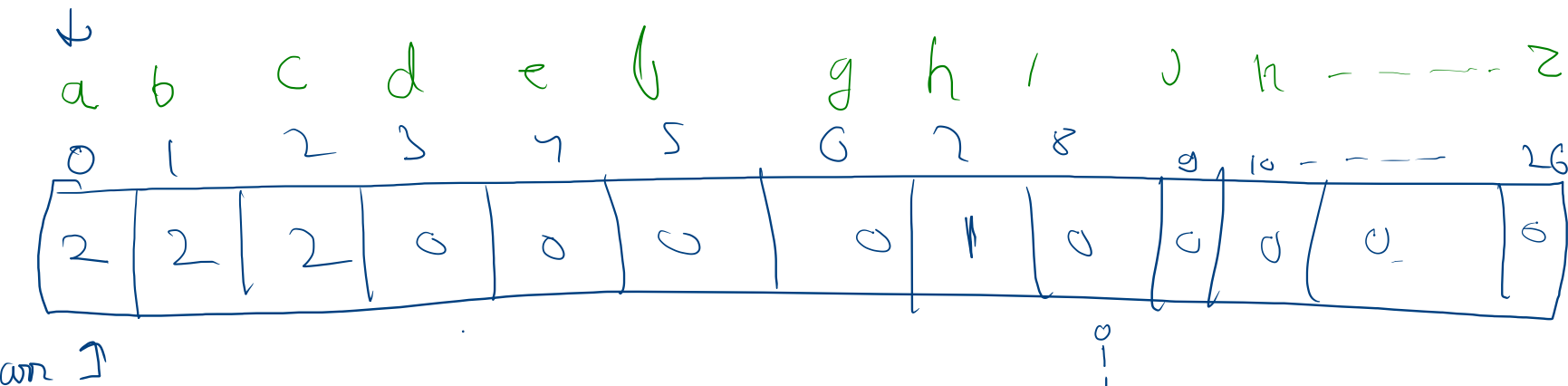
$$b \rightarrow 98 - (10) = 1$$

$$c \rightarrow 99 - 10 = 2$$

$$d \rightarrow 100 - (10) = 3$$

$$e \rightarrow 101 - (10) = 4$$

$$f \rightarrow 102 - (10) = 5$$



arr = a b c a b c h

$ch_i = a$   
 $idx = \text{idx}(ch_i - 'a')$   
 $arr[idx]++;$

$a - a = 0$

$arr[0]++$

$arr[2]++$

$\rightarrow arr[2] = arr[2] + 1$   
 Prev



# Check Anagram (22 July)

Str<sub>1</sub> = P e e k } → Permutations

Str<sub>2</sub> = k e e P

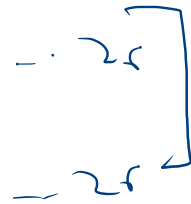
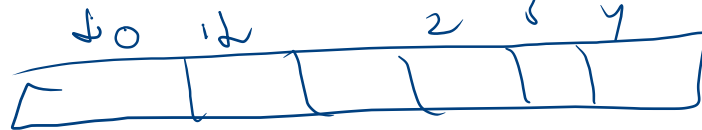
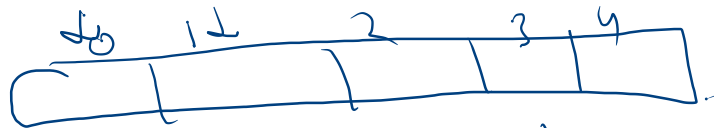
e e P k } → Anagram

k P e e

Method 1

FM<sub>1</sub> → Str<sub>1</sub>

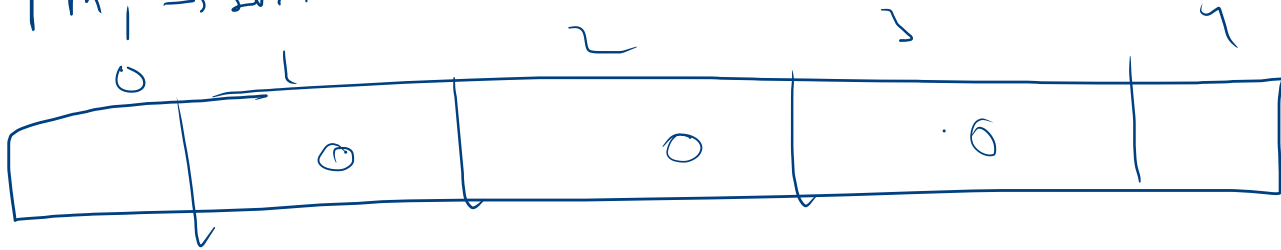
FM<sub>2</sub> → Str<sub>2</sub>



Both same  
↓  
Anagram

Method 2

FM<sub>1</sub> → SH<sub>1</sub>



— — 28

SH<sub>2</sub> ↗ updd

# Special Edge case of str

① null string

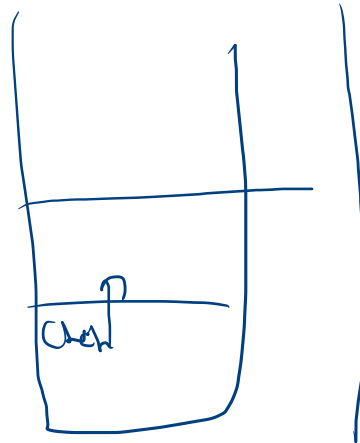
non primitive datatype → null value

```
Exception in thread "main" java.lang.NullPointerException
    at IsAnagrams.checkAnagram(IsAnagrams.java:14)
    at IsAnagrams.main(IsAnagrams.java:9)
```

null.length()

↳ NPE

check  
main



## Print First Vowel occurrence (22 july)

Ex  $\Rightarrow$

0	1	2	3	4
b	c	d	a	e

a e i o u  $\rightarrow$  vowels

$\uparrow$   
 $\rightarrow$  return 3

not vowel  $\rightarrow$  return -1