

## HIGH FREQUENCY CHARACTER

Hume ek string given hai, hume string me se vo character print krna hai jiski frequency sabse jyada ho!

a b x a c a d a b x a

FREQUENCY OF a = 5, HIGHEST

Time complexity :  $O(n)$

Input (STRING) → Output (CHARACTER WITH HIGHEST FREQUENCY)

## BASIC IDEA

① Let's for now only take small characters into considerations.

② Hum ek 26 size ka array banayenge, Aur har spot ek particular character ke liye Assigned hai!

③ Now, string me TRAVERSE krengy! Aur jo bhi character encounter hoga hum uski frequency update krengy!

0	1	2	3	...	17	26
1	1	1	1		1	
2	2				2	
3						
4						
5						
a	b	c	d	...	x	z

④ ∴ STRING: a b x a c d a b x a me hume highest frequency a ki mili. which is 5.

HIGHEST FREQUENCY → a : 5

⑤ Hume Highest frequency mil gayi, pr hume toh sirf character chahiye kiski frequency highest hai.

⑦ Toh Aab hum element ka index mil gaya hai KESE?

ASCII value of Element - ASCII value of "a" or "A" = max. Index

A	B	C	D	...	Z
65	66	67	68	...	90

a	b	c	d	...	z
97	98	99	100	...	122

⑥ uske liye, hum LOOP lagyenge taki hum check kr sake ki konsay waley Array Index pe Highest frequency Aa rhi hai uska element bhi pata layenge.

```
public static void main (String [] args) {
```

```
Scanner s = new Scanner (System.in);
```

```
String str = s.next();
```

```
int farr[] = new int [26]; // Take hum farr ke
```

↓  
Frequency Array

0<sup>th</sup> index : Frequency of (a)  
1<sup>st</sup> index : \_\_\_\_\_ (b)

25<sup>th</sup> index : \_\_\_\_\_ (z)

```
for (int i = 0; i < str.length(); i++)
```

```
{ char ch = str.charAt(i);
```

```
int idx = ch - 'a';
```

```
farr[idx]++;
```

```
}
```

String pe loop lagega!

String ke (i<sup>th</sup>) index wala character nikelga!

Jis index pe desired character hai usko initaleney ke size subtract krdo character

(a) Desired character Index

∴ 'c' - 'a' = 99 - 97

C = 2 → idx

```
int maxidx = 0;
```

```
for (int i = 1; i < farr.length; i++) {
```

```
if (farr[i] > farr[maxidx])
```

```
{ maxidx = i;
```

```
}
```

```
} // max. frequency character
```

```
char mfc = (char)(maxidx + 'a');
```

```
System.out.println(mfc);
```

```
}
```

```
}
```

Agar (maxidx) wala element is less than (i) wala ~~element~~

element, then update (maxidx) to (i)

∴ So, now maxidx = i

(maxidx) me ('a') add krne par hume (maxidx) wala character ka ASCII code mil jayega!

Aur uss ASCII code (char) me Typecast krne se hume (maxidx) wala character mil jayega!

∴ maxidx + 'a'

↓      ↓  
1      +      97

98 = ASCII code

of (b)

(char)(98) = 'c'