Day - 6

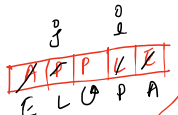
Saturday, 10 January 2026 11:10 AM

String

Q1 Given a String "Reverse it"

eg "APPLE"

o/p "ELPPA"

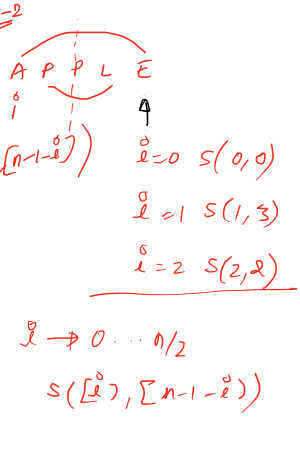



```
str reverse(str) {
    i=0 , j=n-1
    while (i ≤ j) {
        swap([i],[j])
        i++
        j--
    }
}
```

TC = O(n/2) ≃ O(n)

SC ~ O(1)

M-2

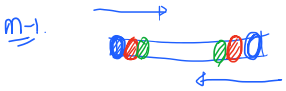


Q2 Given a string check if it's a Palindrome or not?

eg i/p "apple" o/p (f)

i/p "nitin" o/p (t) ✓

M-1



```
boolean isPalindrome(str) {
    i=0 ; j=n-1
    while (i ≤ j) {
        if (str[i] ≠ str[j])
            return (f) ✓
        i++
        j--
    }
    return true
}
```

TC = O(n)

SC ~ O(1)

Q3 Given a str. Find 1st non-repeating char. ('a-z')

eg "abacd" o/p ⇒ "b"

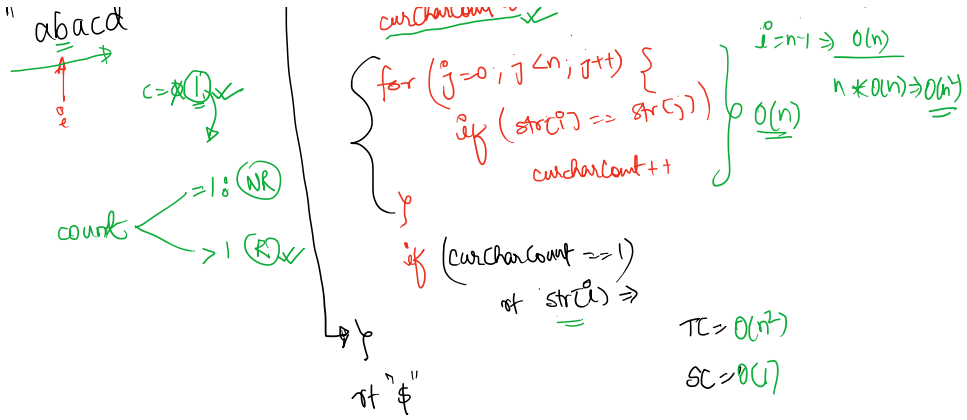
eg "abacbacdecf" o/p ⇒ (e)

eg "abaab" o/p ⇒ "$" ✓

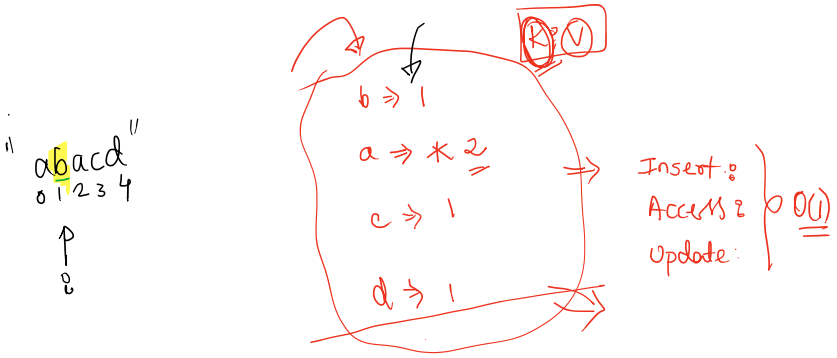
```
char firstNonRepeatingChar(Str) {
    for (i=0; i<n; i++) {
```

i=0 ⇒ O(n)

i⇒1 ⇒ O(n)



M-2

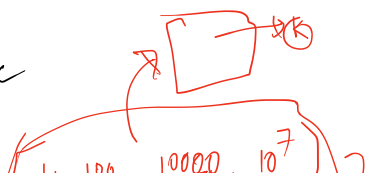


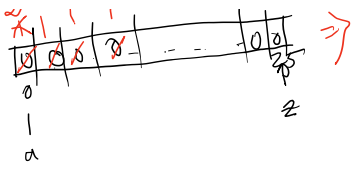

```
char firstNonRepeatingChar(Str) {
// 1st iter.
map[char] = index.                    map[key] = value

O(n)   for (i=0; i<n; i++) {
         if  map.contains(str[i])
             map[str[i]]++                 } Calc the freq of chars
         else
             map[str[i]] = 1
       }

// 2nd
O(n)   for (i=0; i<n; i++) {
         if (map[str[i]] == 1) {           } Identify the NR char
           ⇒ rt str[i]
       }
     }
rt "$"
}
```

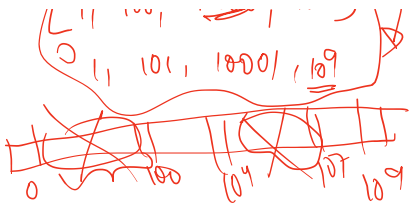
"a-z"

TC ⇒ O(2N) ≃ O(N)

SC ⇒ O(26) ≃ O(1)







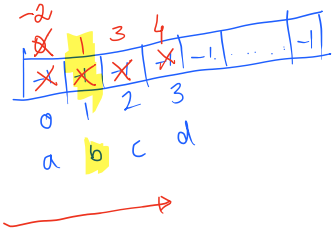
m=3

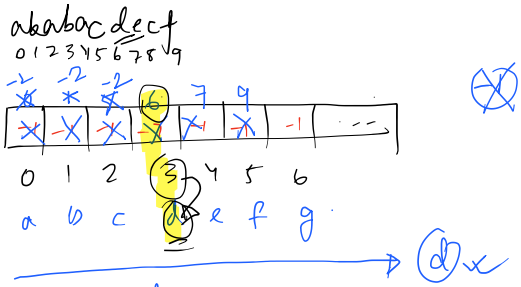
"abacd"
0 1 2 3 4

-1 : Not Present

-2 : Reapting chr

+ve : RIR ✗

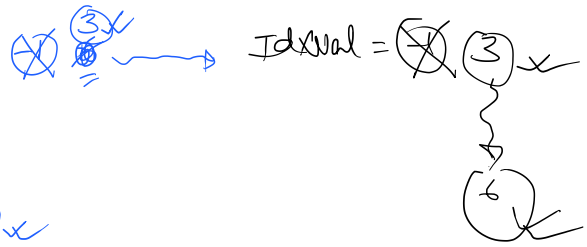




Default value

mapArr (-1, 26) size

```
for (i=0; i<n; i++) {
    curChar = str[i]
    curCharIdx = curChar - 'a'
    if (mapArr[curCharIdx] == -1)
        mapArr[curCharIdx] = i;
    else
        mapArr[curChIdx] = -2;
}
idxVal = -1;
for (i=0; i<=25; i++)
    if (mapArr[i] != 0) {
        if (idxVal == -1)
```



'a' → 0

'a' - 'a' ⇒ 0-0 ⇒ 0 ✗

'b' - 'a'

(0+1) - 0 ⇒ (1) ✗

idxVal = i

else if (mapArr[idxVal] > mapArr[i])

idxVal = i

}

}

of 'a' + idxVal // of str[mapArr[idxVal]]

smallPost = n

for i ← 0 .. 25 {

if (mapAP[i] > 0)

if mapArr[i] < smallPos

smasPos = mapArr[i]

}

}

if (smallPo == n)

of '!$'

else of str[smallPost]