

Date: 8 Nov 2023

Page _____

Day - 52

Strings Interview Questions - 2

* Largest Palindrome:

$$s = abcccdd$$

=> We have to return the longest possible palindrome.

$$\text{So, } s = abccccdd$$

$$cc = 2$$

$$cccc = 4$$

$$dccccd = 6$$

$$dcaccd = 7 \rightarrow \text{return } 7$$

=> we know that in palindrome, first & last element is same.

Ex: No man

Here 'n' & 'o' are even and m is odd.

=> That means a no. that is even times can add into my palindrome string.

So, odd elements can be come only one time.

$$s = \underline{aaaa} \underline{bb} \underline{ba} \underline{cc} \underline{c} \underline{def}$$

a a b c c

(b) c c b a a
(q)
(d)
(e)
(f)

→ only one from all these

=>

Even → add

odd → odd - 1

⇒ There is a twist in our question, we have given both capital & small letters in the string.

$$\begin{array}{l}
 \text{a A A b b A} \\
 \text{a} \rightarrow 1 \quad \left. \begin{array}{c} \\ \end{array} \right\} 0 \\
 \text{A} \rightarrow 3 \quad \left. \begin{array}{c} \\ \\ \end{array} \right\} 2 \\
 \text{b} \rightarrow 2 \quad \left. \begin{array}{c} \\ \end{array} \right\} 2 \\
 \underline{4+1=5}
 \end{array}$$

Code

```
String s;
vector<int> lower(26, 0), upper(26, 0);
```

```
for(i=0; i < s.size(); i++) {
```

```
    if(s[i] >= 'a')
```

```
        lower[s[i] - 'a']++;
```

```
    else
```

```
        upper[s[i] - 'A']++;
```

```
}
```

```
int count = 0; bool odd = 0;
```

```
for(i=0; i < 26; i++)
```

```
    if(lower[i] % 2 == 0)
```

```
        count += lower[i];
```

```
    else
```

```
        count += lower[i] - 1; odd = 1;
```

```
    if(upper[i] % 2 == 0)
```

```
        count += upper[i];
```

```
    else
```

```
        count += upper[i] - 1;
```

```
}
```

Date _____

Page _____

have
the

return count + odd;

T.C $\rightarrow O(N)$.

S.C $\rightarrow O(1)$.

* Sorting the sentence

S = "is 2 sentence4 This1 3 a 3".

=1 We have to sort the word according to their position given in the word.

=1 we will start iterating the sentence and we get the no. ~ we will stop and note the position of the word.

=1 temp = is 2 $\rightarrow (2 \rightarrow \text{is})$

=1 It is also given that there are only 9 words.

=1 So, we will create a vector to store every words to their respective position.

S = "Myself2 ME1 I4 and3"

0	1	2	3	4	5	6	7	8	9
Myself		ME1	I						

temp = Myself2

$$\begin{aligned} \text{int pos} &= \text{temp}[\text{temp.size()}-1] \\ &= '2' - '0' = 0 \end{aligned}$$

Code

```

vector<string> ans(10);
string temp;
int count = 0, index = 0;
while (index < s.size()) {
    if (s[index] == ' ') {
        int pos = temp.size() - 1 - '0';
        temp.pop_back();
        ans[pos] = temp;
        temp.clear();
        count++;
    }
    else {
        temp += s[index];
        index++
    }
    index++;
}
for (int i = 1; i <= count; i++) {
    temp += ans[i];
    temp += ' ';
}
temp.pop_back();
return temp;
}

```