Palindromic Substring — 64A

↓ continuous

return no. of palindromic substring

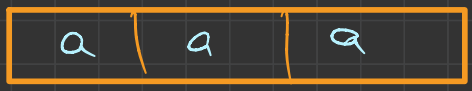
Substring

a
b
c
ab
bc
abc

Palindrome

not a palindrome

ans = 3



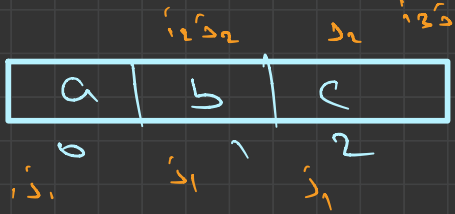
Substring

a
a
a
aa
aa
aaa

Valid palindrome

ans = 6

How to get sub-string?



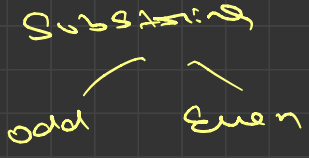
Using 2 for loop

Brute force

```
class Solution {
public:
    bool checkPalindrome(string s){
        int i = 0;
        int j = s.length()-1;

        while(i <= j){
            if(s[i] != s[j]){
                return false;
            }
            else{
                i++;
                j--;
            }
        }
        return true;
    }

    int countSubstrings(string s) {
        int count = s.length();

        for(int i = 0; i < s.length(); i++){
            string strr = string() + s[i];
            for(int j = i+1; j < s.length(); j++){
                string newStr = string() + s[j];
                strr.append(newStr);
                if(checkPalindrome(strr)){
                    count++;
                }
            }
        }

        return count;
    }
};
```

Initially single char has Palindrome itself

Check sequentially Palindrome substring



odd → Some location → i, i

Assume center
& Expand outwards

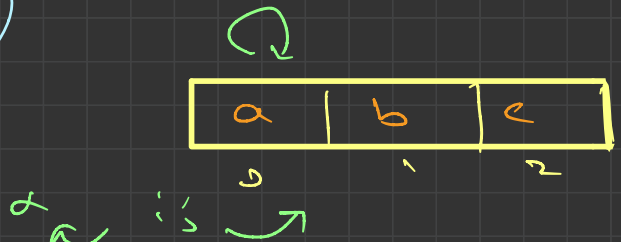
Pass i & i → no. of length

Even → i, i = i+1

↓

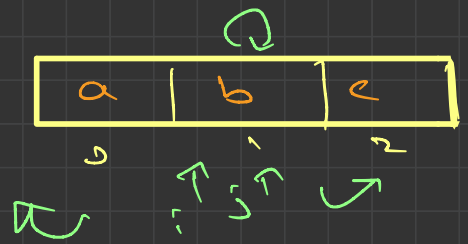
Expand outwards

odd



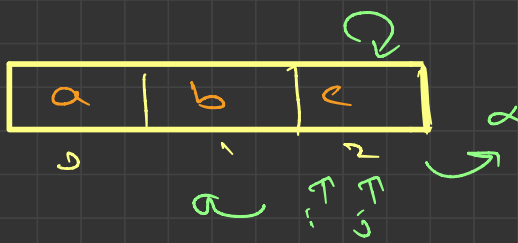
⇒ a

Count = 1



⇒ b, abc

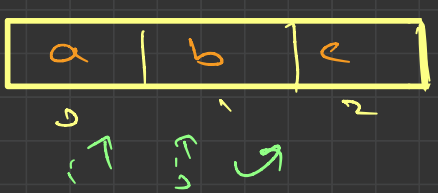
Count = 1



⇒ c

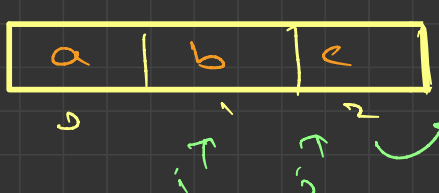
Count = 1

Even



⇒ ab

Count = 0



⇒ bc

Count = 0

Total Count = 1 + 1 + 1 = 3

```
class Solution {
public:
    int expand(string s, int i, int j){
        int count = 0;
        while(i >= 0 && j < s.length() && s[i] == s[j]){
            count++;
            i--;
            j++;
        }
        return count;
    }

    int countSubstrings(string s) {
        int totalCount = 0;

        for(int i = 0; i < s.length(); i++){
            // odd
            int oddAns = expand(s,i,i);
            // even
            int evenAns = expand(s,i,i+1);

            totalCount += oddAns + evenAns;
        }
        return totalCount;
    }
};
```