Question 9 (Palindrome or symmetry)

Given a set of ‘n’ strings, write an algorithm and the subsequent Python code to check if the string is a Palindrome string  or Symmetry string.  A string is  said to be a palindrome string  if one half of the string is the reverse of the other half. If the length of string is odd then ignore middle character. For example, strings liril, abba are palindromes.

A string is said  to be a symmetry string if both the halves of the string are same. If the length of string is odd then ignore middle character. For example, strings khokho, abab are symmetr. If the string is palindrome then print ‘Palindrome’, if the string is a symmetry string then print ‘Symmetry’ if the string (aaa) has both property then print ‘Both property’ and print ‘No property’ otherwise. Write functions to check ‘Palindrome’ and ‘Symmetry’. Make the comparisons to be case insensitive.

Solution

def pal(s) :

r=s[::-1]

if s==r :

return(1)

else :

return(0)

def sym(s) :

if len(s)%2==0 :

if s[:len(s)//2]==s[len(s)//2:] :

return(1)

else :

return(0)

else :

if s[:len(s)//2]==s[len(s)//2+1:] :

return(1)

else :

return(0)

n=int(input())

for i in range(n) :

s=input().rstrip().lower()

f1=pal(s)

f2=sym(s)

if f1==1 and f2==1 :

print('Both property')

elif f1==1 :

print('Palindrome')

elif f2==1 :

print('Symmetry')

else :

print('No property')

Input

INPUT:

s - string

Output

OUTPUT:

if f1==1 and f2==1 :

print('Both property')

elif f1==1 :

print('Palindrome')

elif f2==1 :

print('Symmetry')

else :

print('No property')

Processing

def pal(s) :

r=s[::-1]

if s==r :

return(1)

else :

return(0)

def sym(s) :

if len(s)%2==0 :

if s[:len(s)//2]==s[len(s)//2:] :

return(1)

else :

return(0)

else :

if s[:len(s)//2]==s[len(s)//2+1:] :

return(1)

else :

return(0)

Pseudocode

BEGIN

Read n

def sym()

def pal()

n=int(input())

for i in range(n) :

s=input().rstrip().lower()

f1=pal(s)

f2=sym(s)

if f1==1 and f2==1 :

print('Both property')

elif f1==1 :

print('Palindrome')

elif f2==1 :

print('Symmetry')

else :

print('No property')

END