***String Parity***

C371\_Coding\_September2022

**Topic** : String

**Difficulty Level :** Easy

**Question / Problem Statement** :

Selina gave two strings **S** and **T** of length **N** and **M** to Wayne. String may contain both uppercase and lowercase letters.

Now Wayne’s task is to calculate the sum of ASCII values of letters of both the strings **S** and **T**. If the sum of ASCII values of letters for string **S** and **T** is sum1 and sum2.

Write a program to determine whether sum1 and sum2 are of same parity or not i.e. both sum1 and sum2 are even or both sum1 and sum2 are odd.

**Note**

**N** and **M** values may be different.

ASCII value for [a - z] = [97 - 122 ].

ASCII value for [A - Z] = [65 - 90].

**Function Description**

In the provided code snippet, implement the provided **stringCalculation(...)** method using the variables to determine whether sum1 and sum2 are of same parity or not. You can write your code in the space below the phrase **“WRITE YOUR LOGIC HERE”**.   
  
There will be multiple test cases running so the Input and Output should match exactly as provided.  
The base Output variable **result** is set to a default value of **-404** which can be modified. Additionally, you can add or remove these output variables.

**Input Format**

First line contains an integer **N**.

Second line contains a string **S**.

Third line contains an integer **M**.

Fourth line contains a string **T**.

**Sample Input**

4 –denotes N.

AbcD –denotes S.

4 –denotes M.

abAF –denotes T.

**Constraints**

1 <= **N**, **M** <= 100.

**S** and **T** contain all lower case or uppercase english alphabets.

65 <= sum1, sum2 <=12200.

**Output Format**

Output should return 1 if sum1 and sum2 are of same parity, else return 0.

**Sample Output**

1

**Explanation**

String S = “AbcD”, ASCII value of A = 65, b = 98, c = 99, D = 68.

Now sum1 = 65 + 98 + 99 + 68 = 330.

String T = “abAF”, ASCII value of a = 97, b = 98, A = 65, F = 70.

Now sum2 = 97 + 98 + 65 + 70 = 330.

Both sum1 and sum2 are even means both sum1 and sum2 have the same parity.

**Solution Steps**

1. Calculate the sum of ASCII values of letters of string **S**, denoted as sum1.

2. Calculate the sum of ASCII values of letters of string **T**, denoted as sum2.

3. Check if sum1 and sum2 are of the same parity or not. If sum1 and sum2 are of same parity then return 1, else return 0.

**Running Solution in C++** :

#include <bits/stdc++.h>

using namespace std;

int main(){

//Declaring variable N, M.

int N,M;

//Declaring string S, T.

string S,T;

//Taking inputs.

cin>>N;

cin>>S;

cin>>M;

cin>>T;

//Initialising sum1=0 and sum2=0.

int sum1=0,sum2=0;

//Iterating string S and calculating sum1.

for(int idx=0;idx<N;idx++){

sum1+=(int)S[idx];

}

//Iterating string T and calculating sum2.

for(int idx=0;idx<M;idx++){

sum2+=(int)T[idx];

}

//Checking for parity.

if((sum1%2==0 && sum2%2==0) || (sum1%2==1 && sum2%2==1))

cout<<"1\n";

else

cout<<"0\n";

return 0;

}

Input:

5

eAbDv

5

FbaeA

Output:

0

**Test Cases [Qty: 12]**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case No** | **Input** | **Output** | **Score** |
| 1 | 4  AbcD  4  abAF | 1 | 0 |
| 2 | 5  eAbDv  5  FbaeA | 0 | 0 |
| 3 | 5  eAbDc  5  FbaeA | 1 | 1 |
| 4 | 1  A  2  d | 0 | 1 |
| 5 | 100  zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz  50  zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz | 1 | 1 |
| 6 | 10  ABCDRDFGDG  12  abcdewedcfwr | 0 | 1 |
| 7 | 25  zyxabcdvghsdrgicgstybfxds  32  aedcthfzyxabcdvghsdrgicgstybfxds | 0 | 1 |
| 8 | 56  aedcthfzyxabcdvGhsdrgFcgsRTFaedcthfzyxabcdvGhsdrgFcgsRTF  28  aedcthfzyxabcdvGhsdrgFcgsRTF | 1 | 1 |
| 9 | 12  ZXGDTDKKDVTF  12  TREVLCVMDCNK | 1 | 1 |
| 10 | 6  iMocha  11  iMochaWorks | 1 | 1 |
| 11 | 13  ProblemSetter  15  ProblemReviewer | 1 | 1 |
| 12 | 14  abgddfdfAfResc  12  wewrABDXDVDe | 0 | 1 |

Plagiarism found – No

Clarity of the problem statement - Yes

Clarity of the example in the problem statement - Yes

Clarity of sample test cases - Yes

Clarity of test cases (Dual output) – Yes

Clarity of explanations - Yes

Provided Solution running – Yes

EEOC complaint (using abusive words/Indian Names/) - No

Similar Question in System - No

Difficulty Level – Easy

Question w.r.t strings concepts- Yes

Final Comment: **Rejected** (yes/no type question)