# **LAB 1 - TOY PROBLEM**

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**Problem :** You are given two strings s1 and s2 of equal length consisting of letters "x" and "y" only. Your task is to make these two strings equal to each other. You can swap any two characters that belong to different strings, which means: swap s1[i] and s2[j].

Return the minimum number of swaps required to make s1 and s2 equal, or return -1 if it is impossible to do so.

**Solution (C++) :**

class Solution {

public:

int minimumSwap(string s1, string s2) {

int x1=0, x2=0, y1=0, y2=0;

for(int i=0; i<s1.size(); i++) {

if(s1[i] == s2[i]) continue;

if(s1[i] == 'x') x1++;

else y1++;

if(s2[i] == 'x') x2++;

else y2++;

}

if((x1+x2)%2 || (y1+y2)%2) return -1;

return x1/2 + y1/2 + (x1%2) \* 2;

}

};

Input: **s1 = "xy", s2 = "yx"**

Output: 2

1.What is a toy problem?

Ans : A toy problem is a problem that resembles a real life problem but in an abstract manner, and is solvable in a small amount of time.

2.How many approaches do you have for solving the toy problem which you have taken?

Ans : There are multiple approaches, the one used above is iteration. Other approaches involve tail recursion etc.

3.Map your toy problem to any real life application.

Ans : Real life database management.