Final Round Questions

1. Program to implement FLAMES game?

FLAMES is a popular game named after the acronym: Friends, Lovers, Affectionate, Marriage, Enemies, Sibling. This game does not accurately predict whether or not an individual is right for you, but it can be fun to play this with your friends.

There are few steps in this game:

- Take the two names.
- Remove the common characters with their respective common occurrences.
- Get the count of the characters that are left .
- Take FLAMES letters as ["F", "L", "A", "M", "E", "S"]
- Start removing letter using the count we got.
- The letter which last the process is the result.

Example :

Input: Player1 = AJAY, Player2 = PRIYA

Output: Player 1 is Friend to Player 2

Logic:

In above given two names A and Y are common letters which are occurring one time(common count) in both names so we are removing these letters from both names. Now count the total letters that are left here it is 5. Now start removing letters one by one from FLAMES using the count we got and the letter which lasts the process is the result.

Counting is done in an anti-clockwise circular fashion.

FLAMES

counting starts from F, E is at 5th count so we remove E and start counting again but this time start from S.

FLAMS

M is at 5th count so we remove M and counting starts from S.

FLAS

S is at 5th count so we remove S and counting start from F.

FLA

L is at 5th count so we remove L and counting starts from A.

FA

A is at 5th count so we remove A. now we have only one letter is remaining so this is the final answer.

F

So, the relationship is F i.e. Friends

2. **Write a program that compares two app versions to detect if it is an upgrade or downgrade.**

Sample input/output:

Input:

Version 1 = 9.0.23

Version 2 = 9.0.24

Output: Upgraded

Input:

Version 1 = 4.0.1

Version 2 = 4.0

Output: Downgraded

Input:

Version 1 = 1.01.15

Version 2 = 1.1.15

Output: Equal

Input:

Version 1 = 1.9.15

Version 2 = 1.9.15

Output: Equal

3. Problem Statement: Permuted Multiples

It can be seen that some numbers and their multiples contain exactly the same digits, but in a different order. For instance, **142857** and its double, **285714**, consist of the same digits, though rearranged.

Your task is to find the smallest positive integer x such that $2x$, $3x$, $4x$, $5x$, and $6x$ all contain the same digits. Write a program to find this smallest positive integer

Input:

There is no input for this problem.

Output:

The smallest positive integer x is: **142857**

i.e, 142857 * 2 = 285714

    142857 * 3 = 428571

    142857 * 4 = 571428

    142857 * 5 = 714285   (All contains same digits but order differs)*

multiples $2x$, $3x$, $4x$, $5x$, and $6x$ all contain the same digits.