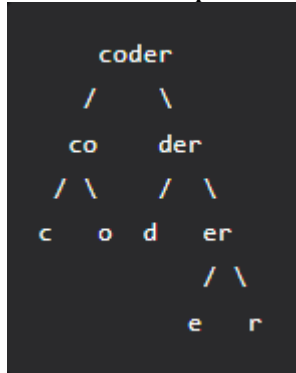


## Scrambled String

Given two strings **S1** and **S2** of equal length, the task is to determine if S2 is a scrambled form of S1.

**Scrambled string:** Given string **str**, we can represent it as a binary tree by partitioning it into two non-empty substrings recursively.

Below is one possible representation of str = **coder**:



To scramble the string, we may choose any non-leaf node and swap its two children. Suppose, we choose the node **co** and swap its two children, it produces a scrambled string **ocder**.

Similarly, if we continue to swap the children of nodes **der** and **er**, it produces a scrambled string **ocred**.

**Note:** Scrambled string is not the same as an Anagram.

Print "Yes" if S2 is a scrambled form of S1 otherwise print "No".

### **Example 1:**

**Input:** S1="coder", S2="ocder"

**Output:** Yes

**Explanation:** ocder is a scrambled form of coder.

```
ocder
/  \
```

```
    oc    der
   /  \
  o    c
```

As "ocder" can represent it as a binary tree by partitioning it into two non-empty substrings. We just have to swap 'o' and 'c' to get "coder".

### Example 2:

**Input:** S1="abcde", S2="caebd"

**Output:** No

**Explanation:** caebd is not a scrambled form of abcde.

### Your Task:

You don't need to read input or print anything. You only need to complete the function **isScramble()** which takes two strings S1 and S2 as input and returns a boolean value.

**Expected Time Complexity:**  $O(N^2)$

**Expected Auxiliary Space:**  $O(N^2)$

### Constraints:

- $S1.length = S2.length$
- $S1.length \leq 31$
- S1 and S2 consist of lower-case English letters.